



BNY MELLON

Introducing iFlow Carry

CARRY IS DEAD. LONG LIVE CARRY!



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- Over the past 10 years, long local EM bonds provided only a 2.5% annualized return
- By contrast, long US Treasuries returned 3.2% and global local government bonds 1.7%
- We introduce an iFlow-derived measure of investor behavior that may enhance EM local bond performance over time



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Since the global financial crisis, emerging market (EM) local bonds have been a difficult asset class to navigate. First, broad-based USD demand hit commodities and commodity-dependent economies, many of which were also affected by subsequent deleveraging in China. More recently, EM central banks have been easing significantly while accommodating weaker currencies to cushion the negative impact of higher tariffs imposed in China and the United States.

We have developed iFlow Carry to help navigate EM exposure. The behavior of flows summarized by iFlow Carry is based on the correlation between iFlow FX flows and local yields. We provide an example of the results for two alternative approaches: a long/short EM local bond strategy and a combined EM/DM bond strategy.

INTRODUCTION

Returns to carry as an FX strategy are episodic. Interestingly, however, interest rate parity conditions imply that for given interest rates in two countries, the exchange rate in the higher interest rate currency should actually depreciate, in order to preserve the law of one price. Yet the carry strategy is a classic currency investing approach; economies offering higher local yields attract investor capital and frequently see their currencies bid up.



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This is because carry remains attractive as long as investor risk appetite is high. The interest rate differential between two countries is actually a measure of the relative riskiness of their local currency bonds. If an investor believes that the higher-yielding country will not see its exchange rate fall by more than the interest rate differential, the carry trade may be profitable and the investor may go long the country offering the higher return.

Conversely, in “risk-off” environments, investors may be unwilling to take a bet that the exchange rate may not depreciate more than the interest rate differential, and they may flee the high carry currency in favor of safe havens, or so-called funding currencies.

Looking at two simple FX carry indices, it is possible to see that when carry is “on,” returns to such strategies may be rewarding. However, we can also see periods when carry strategies may be unprofitable. These periods in which carry loses money often occur very quickly; episodes of market stress and “risk-off” see carry strategies give back their gains in a very short period of time, as investors sell their positions and seek haven in lower-yielding, lower-volatility currencies.

With our iFlow data, we can measure when real money investors have been following carry strategies and when they are shunning them. In the next section, we explain the construction of iFlow Carry.

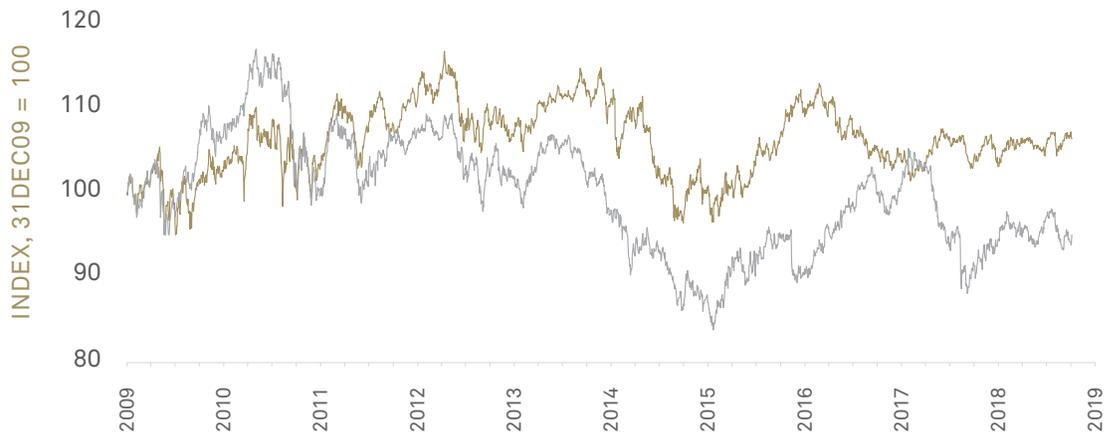
Figure 1: Returns to FX Carry Positions Are Episodic

G10 CARRY

EM CARRY

SOURCE:

Bloomberg, data through October 5, 2019.¹



¹ G10 carry measures the total cumulative return of a buy-and-hold position that goes long three-month money market securities in the three highest-yielding G10 currencies and is fully funded by corresponding short positions in the three lowest-yielding currencies (equal-weighted, daily rebalancing). EM carry measures the cumulative total return of buy-and-hold positions in three-month money market securities in eight liquid emerging market currencies (equal-weighted) fully funded by short positions in USD securities.

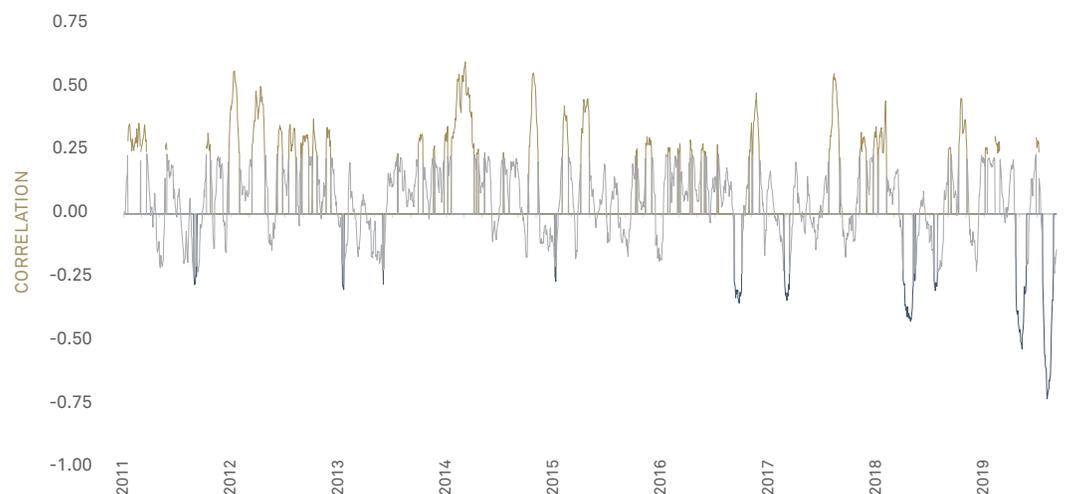
CONSTRUCTING IFLOW CARRY

To construct the iFlow Carry index we follow a simple, intuitive and transparent approach. We use aggregated and anonymized FX flows from our iFlow database, all expressed in US dollars for 33 currencies. We smooth each flow series with a five-day exponential moving average (with the weightings corresponding to a one-day half-life). Each smoothed series is then standardized by its own standard deviation (calculated over a rolling sample of 260 days). This produces a set of 33 z-scores for each currency in our sample. We also obtain five-year (local) bond yields for each currency. Both the iFlow z-scores and the bond yield series are smoothed for day-to-day noise by taking a simple 20-day rolling average.

We next compute the daily Spearman rank correlation between the 33 iFlow indicators and the bond yields in the local currency of those countries. This gauges the strength of flows' alignment with their corresponding bond yields. In other words, we measure whether or not the highest (or lowest) yield interest rates line up with the currencies with the highest (or lowest) FX flows. This provides a daily measure of the appetite for carry in FX markets. When the correlation is high, the carry trade is likely to be in favor.

Figure 2 plots the daily values of this measure: our iFlow Carry. For the Spearman rank correlation to be statistically significantly different from zero (and not just statistical noise) we also compute the P-value for this correlation, choosing a threshold of 0.20. The gold segments of iFlow Carry correspond to periods when correlation is positive and the P-value is less than or equal to 0.20, while the blue portions indicate periods when investors are fleeing carry and the Spearman rank correlation is statistically significant.

Figure 2: iFlow Carry



ABOVE THE THRESHOLD

BELOW THE THRESHOLD

CORRELATION OF FLOW W/CARRY

SOURCE:

Bloomberg, data through October 5, 2019.

A SIMPLE BACKTEST OF IFLOW CARRY

In this section, we demonstrate how iFlow Carry may provide insight into investor risk appetite and show how a simple investment strategy can be developed by clients from understanding and quantifying “risk-on/risk-off” regimes as may be inferred from iFlow Carry.

We begin with a USD-based investor who runs a long carry position. Her portfolio is proxied by the Bloomberg Barclays Emerging Market Local Currency Government Index (unhedged, total returns). This is essentially a risk-seeking strategy which profits from both the higher yields offered on EM local debt as well as the currency return. Since the beginning of 2011, this long EM portfolio averaged 2.5% annualized returns, with an IR of 1.6.

Contrarian Strategy

Next, we employ the signals from our iFlow Carry index. When iFlow Carry is statistically significant (i.e., the P-value is less than or equal to 0.20) and correlation is positive, the investor may switch her long position to an outright short position in the EM local debt index. (This corresponds to periods when the iFlow Carry index is in the gold region.) The short position may be held until the P-value rises back above 0.20.

Essentially, in these periods, carry has become either “overbought” and positions in risky assets are heavily long, or inflation and/or yield differentials have narrowed so much that carry is no longer a worthwhile strategy and the investor loses interest.

After such a run-up in carry, extended positions are at risk of being pared and sold off. We may describe this strategy as contrarian, or characterize these as periods in which the carry trade is at risk of being reversed. This strategy averages an annualized total return of 3.0%, with an IR of 1.9. Returns are better than the long-only EM local debt benchmark, with similar volatility.

Risk Filter Strategy

Next, we perform a similar test, but this time we short the EM debt index when our iFlow Carry index is in the blue region in Figure 2 above. This would correspond to a period when the P-value is significant (i.e., less than or equal to 0.20) and the correlation between FX flows and bond yields is negative. Think of these periods as “risk-off” episodes, when investors are fleeing carry and shedding risk. In this case, a portfolio manager (PM) inverts his long position in EM local currency debt and shorts it outright. Following this strategy results in average annualized returns of 4.8% and an IR of 3.1, nearly double the naïve benchmark portfolio where the PM buys and holds the EM local debt index under all circumstances. We refer to this rule as a “risk filter”.

² We also examined a simple regression of the 33 FX flows each day against the corresponding 33 local yields, as well as the simple Pearson correlation of the same series. Results are similar whichever measure of correlation we look at.

Combined Strategy

Finally, we examine a PM who combines both rules above. He is long EM local currency debt as his benchmark, but he pursues both a “contrarian” strategy as well as a “risk filter” strategy. In other words, when our iFlow Carry index is in either the gold or the blue regions, he shorts EM debt. Average annualized returns are 5.3%, with an IR of 3.3.

EM Local Debt/Global Government Switching Strategy

We can extend this approach and imagine we have an unconstrained manager. She would, as her benchmark, run a long EM local currency debt position alongside a short position in government bonds. We proxy the latter with the Bloomberg Barclays Global Aggregate Treasuries Index (unhedged, total returns). The benchmark yields just 0.6% annualized returns and an IR of 0.4. We test the same three rules as above: a contrarian strategy, a risk filter strategy, and a combination of the two. Again, as above, returns may be improved.

The tables below and on the next page summarize the performance of the various strategies.

SOURCE:

BNY Mellon Calculations, iFlow ©, Bloomberg; data through September 27, 2019

EM LOCAL CURRENCY DEBT ONLY				
RULE:	CONTRARIAN	RISK FILTER	COMBINED	BENCHMARK
Average annualized return	3.0%	4.8%	5.3%	2.5%
Annualized standard deviation	1.6%	1.6%	1.6%	1.6%
Information ratio	1.9	3.1	3.3	1.6
EM DEBT/ GLOBAL GOVERNMENT DEBT				
RULE:	CONTRARIAN	RISK FILTER	COMBINED	BENCHMARK
Average annualized return	1.1%	2.1%	2.7%	0.6%
Annualized standard deviation	1.5%	1.5%	1.5%	1.5%
Information ratio	0.8	1.5	1.8	0.4

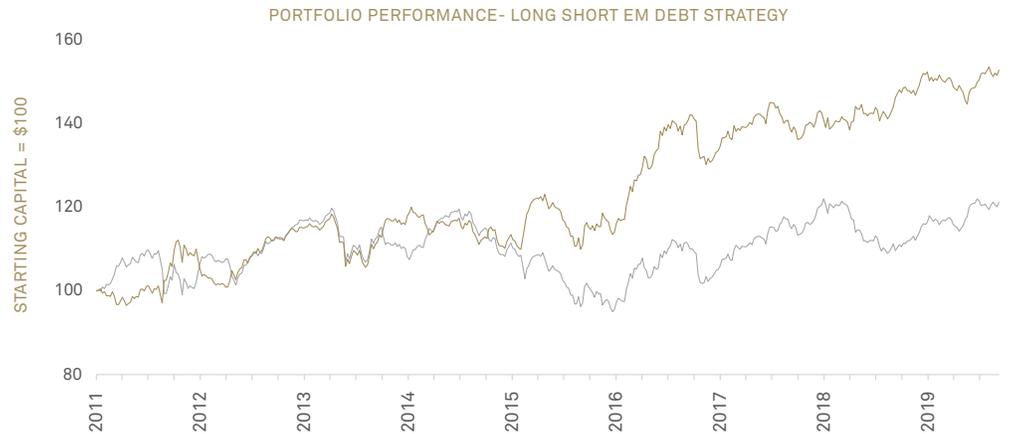
Figure 3: Portfolio Performance Using iFlow Carry Index

COMBINED STRATEGY

BENCHMARK

SOURCE:

BNY Mellon Calculations,
iFlow®, Bloomberg; data
through September 27, 2019

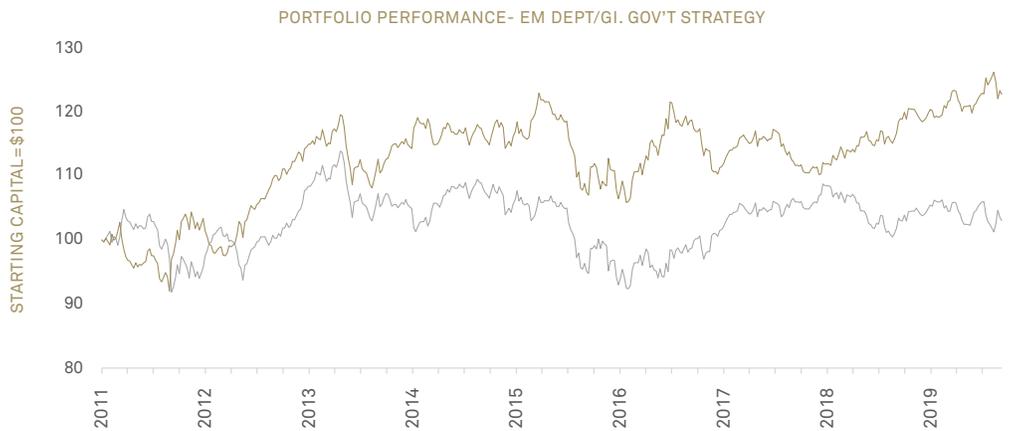


COMBINED STRATEGY

BENCHMARK

SOURCE:

BNY Mellon Calculations,
iFlow®, Bloomberg; data
through September 27, 2019



CONCLUSION

iFlow Carry is a measure of existing investment flows based on historical data aimed to assist practitioners involved in international bond markets. We find the framework particularly useful to help inform investors when correlation between flows and local interest rates fluctuate. An investor's macro motivation behind this could be to avoid exposure to carry when they consider the investor flow to be too sensitive to interest rates in either direction.

As shown in Figure 2, over the past 10 years iFlow Carry has reacted when correlations are too high. More recently, however, correlations have collapsed. This is because local interest rates have collapsed everywhere in the past year and EM local yields have reached unprecedented lows despite USD appreciation.

The most recent signals out of iFlow Carry were predominantly used as a tool to avoid carry exposure when correlations collapsed.

