Global Macro Strategy

An EM turnaround? III –Valuation optics vs. reality

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Read the previous two notes in this series:
An EM turnaround? I –Assessing the anatomy of the rally
An EM turnaround? II –Have FED/China changed the game for FX and commodities

The valuations issue at its core

Valuations and growth in EM live in completely different post codes of their long-term distributions. This is an issue in DM as well, but is more pronounced in EM. Other than the idea of loose monetary policy 'permanently' altering the NPV profile of EM assets, the only other way to rationalise such dissonance is to hope that growth will 'mean-revert' to much higher levels. We find both theses, shall we say, brave, in the context of structural changes in EM leverage and in patterns of global trade.

Equities: Why that simple P/B chart for EM is a banana skin

The valuation case in favour of EM stocks is typically made through the large gap between EM and DM price to book ratios. We are all for simplicity, but not in this case. When we normalise these ratios for declining return on equity in EM, only three sectors show up as being cheap – energy, financials, and utilities. Unfortunately, these are precisely the sectors where the representation of state owned enterprises is the highest. Given that current return on equity has been propped up by higher leverage, we think it is perfectly rational to discount future prospects. Once we dissect valuations by sector, it's difficult to walk away with the conclusion that EM equities are attractively priced. For things to change, we need better corporate governance, higher asset turns, but more than anything we need better growth. The market expects now 7.7% earnings growth this year. We expect 0-3%. On our earnings estimates, we think MSCI EM fPE is just above 13x, much higher than its long-term average of 11x.

FX: If it ain't fixed, why not keep fixing it?

We have consistently argued that in a world where the beta of global trade to global growth is declining, PPP based FX valuation models will fail to capture the forces that are compromising EM currencies. We have a preference for the FEER approach, but we also pay a lot of attention to export growth, and unit labour cost-adjusted valuations. Very few EM currencies appear misaligned in terms of current accounts. However, they do seem misaligned when viewed in the context of growth and productivity. Despite lower US rates and a more stable oil backdrop, we maintain that EM currencies will depreciate in trade weighted terms this year. We expect GBI-weighted EM currencies to fall c.6% against the USD this year after a 17% decline last year.

Credit: Likely the best performing asset class, but spreads will widen

We base our fair value estimates for spreads on an error correction model which posits EM macro balance sheet scores, commodity prices and global risk premia as the long-term drivers of EM credit. While central banks have aided compression in global risk premia, and commodity prices have found some stability, we find that the compression in EM spreads has been too aggressive given the lack of improvement in EM macro balance sheets. We expect EMBI spreads to widen 50-75 bps into year end. Growth needn't decline further for negative outcomes on credit; the longer that growth stays at the current low levels, the higher the risk of a non-linear widening in spreads.

Local rates: Focus on FX hedged opportunities

In a world where DM yields have been crushed, EM yields, trading slap back in the middle of their post-crisis distribution, are optically compelling. However, credit risk in several EMs has also risen in this period. After accounting for this, we find EM valuations showing significant dispersion but on aggregate falling short of those seen in 2011, H1 2012, and H1 2014 when EM yields saw sustained declines. We prefer rates over FX in Brazil, Mexico, Korea, India, Indonesia, and Hungary.

Contents

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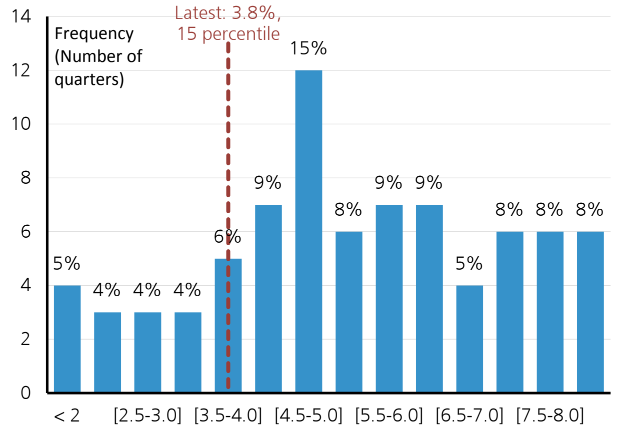
Warming up: A basic drill

Why we suffer from mean reversion aversion

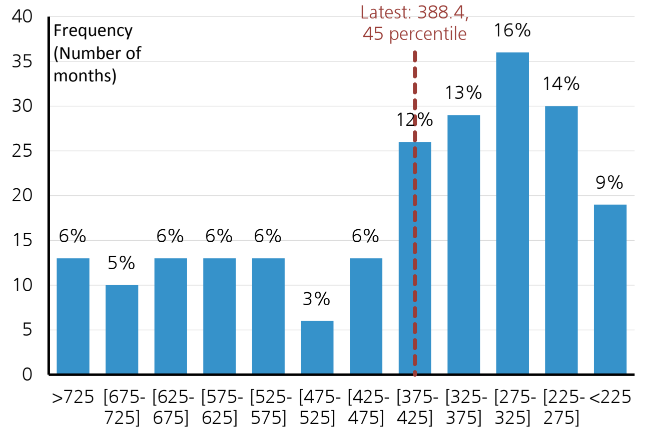
In this note we will delve into important details of how we think about fair value and in different EM asset classes, the influences upon them and their evolution in a world undergoing structural challenges. As a prelude to what can be fairly involved arguments about high and low, then and now, allow us to present a set of 'entry level' charts (Figure 1 to Figure 4) that depict a simple notion.

Figure 1: Distribution of EM Real GDP growth



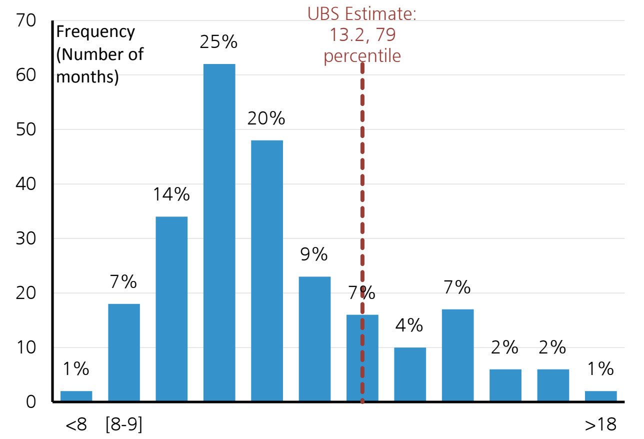
Source: Haver, UBS. Bar labels denote % of observations in that bucket. Distribution since 1996.

Figure 2: Distribution of EMBI spreads



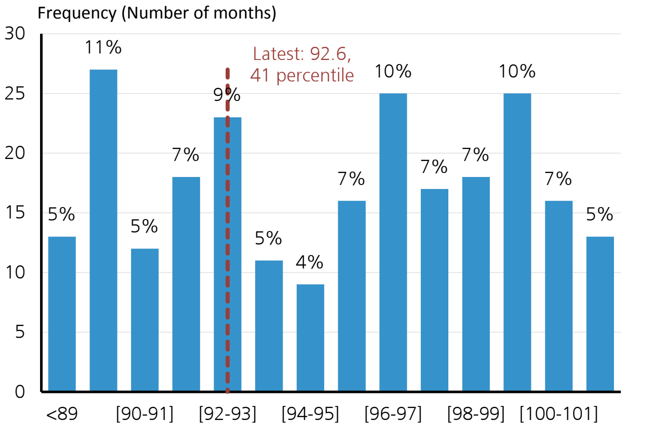
Source: Datastream, UBS. Bar labels denote % of observations in that bucket. Distribution since 1998.

Figure 3: Distribution of MSCI-EM P/E



Source: Datastream, UBS. Bar labels denote % of observations in that bucket. Distribution since 1996.

Figure 4: Distribution of EM REERs (2010 = 100)

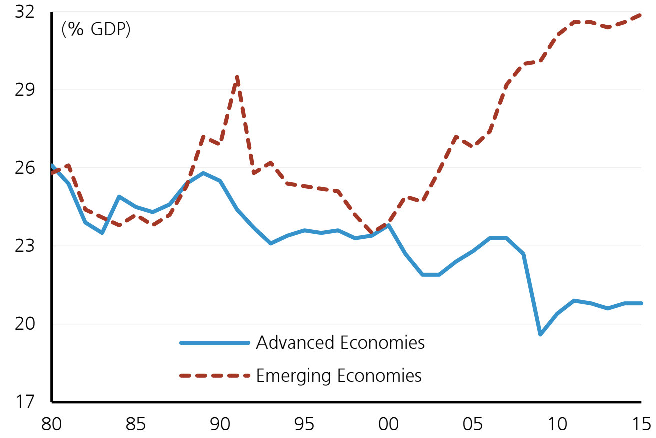


Source: Haver, UBS. Bar labels denote % of observations in that bucket. Distribution since 1996.

Valuations and growth reality are in different post codes today. Who is going to travel for them to meet?

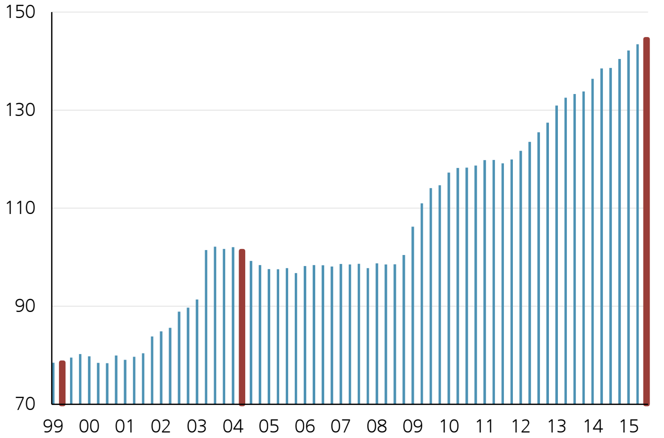
The figures above represent long-term distributions of EM growth and valuation metrics in EM equites, credit and FX. It is clear that while EM growth is in the lower echelons on the first quartile of its 25-year distribution, asset valuations are at or above the median. The same divergence is on display in DM, but is less pronounced there. Apart from loose monetary policy 'permanently' altering the NPV profile of assets, the only other way in which such dissonance can be rationalised is the hope that growth will 'mean-revert' to much higher levels. We find this hope, shall we say, brave, in the context of meaningful changes in EM leverage (Figure 5 and Figure 6) and patterns of global trade (Figure 7).

Figure 5: Investment to GDP: Investment has soared in EM. How much further can it drive EM growth?



Source: IMF, Haver, UBS

Figure 6: Domestic credit to GDP: the investment has been financed by a serious increase in credit to GDP.

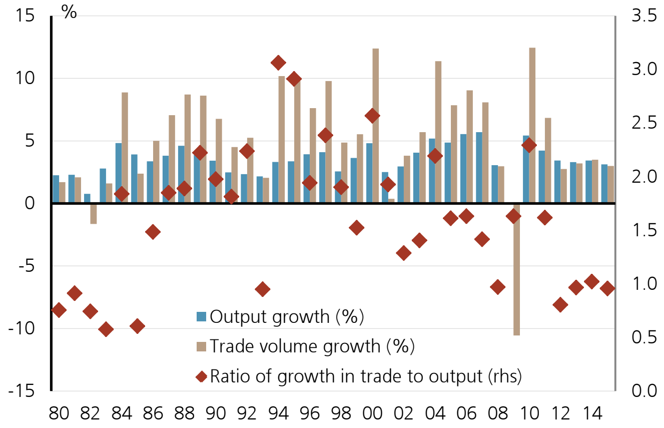


Source: Haver, UBS. EM represents a universe of 66 emerging economies. Red numbers denotes period when Fed began tightening.

Even if growth were to stabilise here, current levels are low enough for there to be a drift weaker in capital flows and asset values (Figure 8). The lack of large USD liabilities diminishes the probability of balance of payments crises, but amidst persistence of weak growth we are building up towards balance sheet issues that tend to ensnare EM economies quicker than DM economies.

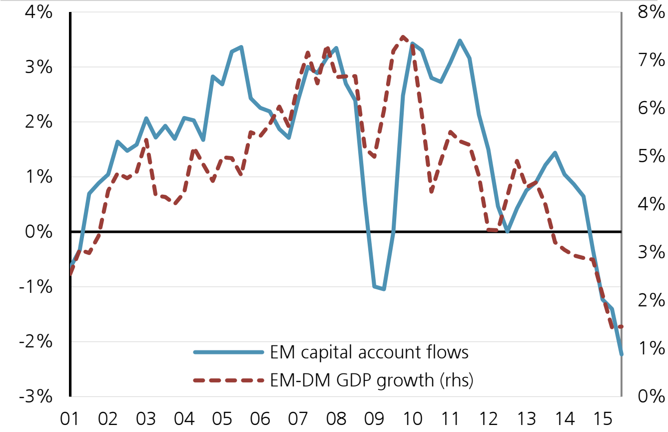
The swampland of muddle-through

Figure 7: Global GDP and trade growth: The beta of trade volumes to real growth has fallen back to 1980s levels



Source: Haver, UBS

Figure 8: EM growth premium over DM and total capital flows into EM



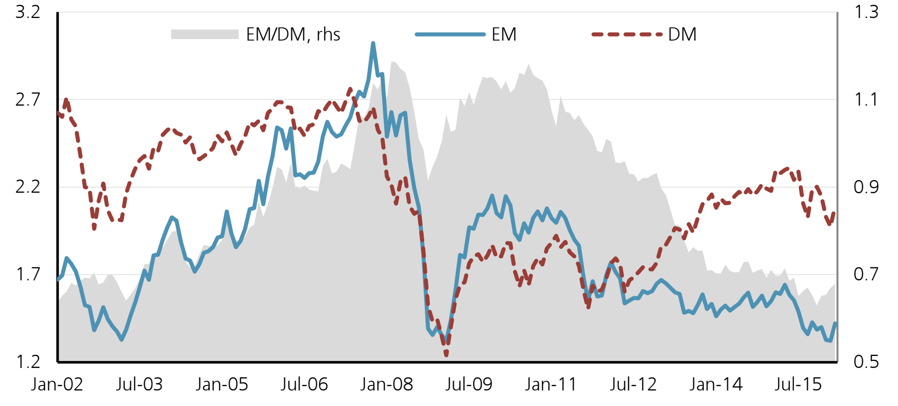
Source: Haver, UBS. EM capital flows shown here is GDP weighted average of 22 EM countries.

Equity valuations: The problem with 'that' chart

Simplicity usually is the best policy

We've all seen it. It demonstrates simply that valuations are way cheaper in EM than in DM. In a world where DM companies, having had their fill of financial engineering, are no longer able to push up EPS, investors ask why they shouldn't consider cheaper EM assets? In the base case scenario there's little difference in earnings prospects, but one is also buying positive growth optionality for a pittance. And – here is what clinches it for many– this valuation spread against DM always mean reverts. Several analyst graves have 'this time is different' inscribed on their epitaphs, investors warn us.

Figure 9: The valuation case in EM at its simplest : EM v DM P/B spread over the last 10 years. Simple, elegant, and, in our humble opinion, simplistic



Source: MSCI, Datastream, UBS

But there is plenty under the surface here that's worth uncovering

These are all good arguments, and we've learnt the hard way that, when it doubt, it really pays to keep things simple. However, in the present instance there is little doubt in our minds that there is plenty under the hood not to be swayed by the elegant façade of wide DM to EM P/B gaps. Below we lay out how we think about EM equity valuations. The key points are

1) Consensus now expects 7.7% growth in USD earnings for 2016. Our earnings model points to 0-3% earnings. EM P/E valuations are expensive even on a consensus earnings basis. Based on our earnings estimates fP/E is already closer to 13.2x

2) On a P/B basis EM valuations seem reasonable. However, this assumes that estimates of book value are correct. We think it is likely that persistent weakness in income statements will impact EM balance sheets, making the present consensus view on B (in P/B) too generous, similar to bloated estimates of E (in P/E) over the last 5 years.

3) Rising sectoral variance in valuations weakens the arguments about valuations of EM aggregates, so a call on individual sectors is important.

4) The usual practice is to set P/B against RoE. That is interesting today in EM because it shows P/B is not too low. Even more interesting is setting it against RoA, which excludes the leverage support that RoE affords. This shows that P/B may be a little high.

5) Sectors where the market is attributing a low price to book despite high RoE are energy and financials. These are sectors which are optically cheap. However, these are also the sectors where the quality of the RoE is poor owing to high fairly SoE representation (58% in energy, 43% in financials).

EM earnings: Can we finally see some positive growth?

We believe earnings can and should be forecast on a bottom up basis, but modelling a few macro variables can provide a shortcut that lands us in roughly the right post code, even if not at the doorstep

Using quarterly data since 1996, we model y/y growth in USD earnings growth for MSCI EM on a) lagged values of export growth, b) lagged valued of industrial production growth, c) change in our macro balance sheet risk score for (MSCI weighted) EM, and d) raw industrial commodity prices. Based on USD export growth of around 7% in 2016 (a big improvement from -10% in 2015), industrial production growth of 5%, flat commodity prices, and a modest worsening of EM macro credit risks as measured by our macro balance sheet risk score, we forecast USD earnings growth of 1.5% in 2016. This is our base case scenario (Figure 10)[1]. Note here we are incorporating a reasonably strong numbers for EM growth export and IP growth. A slightly weaker export recovery estimate of about 4% would imply flat earnings this year. Here is the equation for the model

y/y Earnings growth = -1.47 + 0.98*EXIP(-2) - 10.47*D(MBS) + 0.18*D(Cmdty)

Where EXIP(-2) is linear combination of exports and industrial output growth, 2 quarters lagged; D(MBS) is the quarterly change in our macro balance sheet risk score, and CRB is the year over year change in industrial commodity prices[2].

Figure 10: MSCI EM earnings growth forecasts

	Export growth	Industrial growth	Change in raw industrial commodity prices	Change in credit risk*	**Earnings growth**
Downside	-5%	3%	-20%	0.40	**-12.0%**
Base case	**5%**	**5%**	**0%**	**0.20**	**1.5%**
Upside	12%	7%	20%	-0.20	**15.0%**

Source: Haver, Datastream, UBS

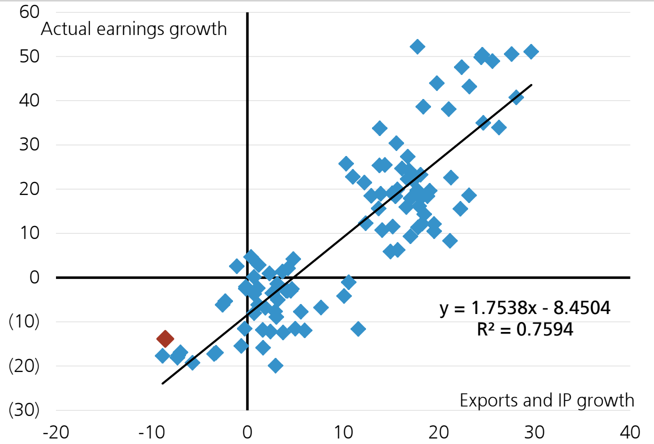
We still see weaker FX, but reasonable pick up in y/y local earnings growth

The rally in EM currencies thus far this year (which has also helped commodities) has prompted revisions 2016 earnings estimates to 7.7%. However, we think that while EM currencies will not sell off against the USD in 2016 as they did in 2015, they will nonetheless weaken by 4-5% (See An EM turnaround? II –Have FED/China changed the game for FX and commodities). Implicitly then we are arguing for a decent improvement in local earnings, which, it has to be said, has not come to pass as yet.

[1] Exports and industrial production are correlated, presenting a problem of multicollinearity, and so use a linear combination of these as one explanatory variable. We set up long term model to forecast equilibrium earnings, given other macro variables

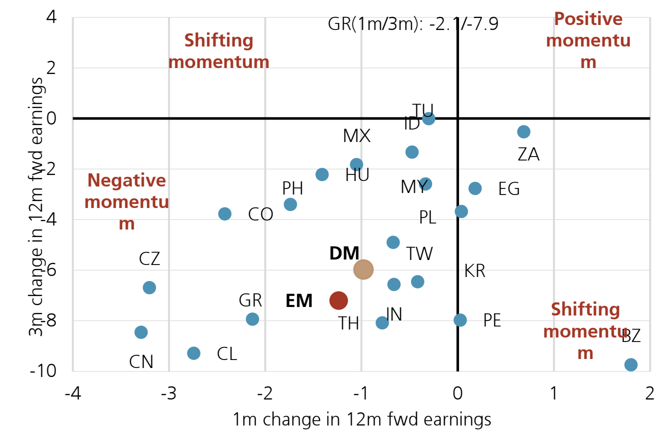
[2] The adjusted Rsq of the regression is 0.834 and the respective t stats associated with the independents are respectively 6.99 for exports and IP, -4.92 for change in macro balance sheet risk score, and 3.83 for yearly change in industrial commodity prices.

Figure 11: EM earnings growth vs. Exports and IP growth (% y/y)



Source: Datastream, UBS

Figure 12: GEM Countries: 1 month vs. 3 months forward earnings revisions (%)



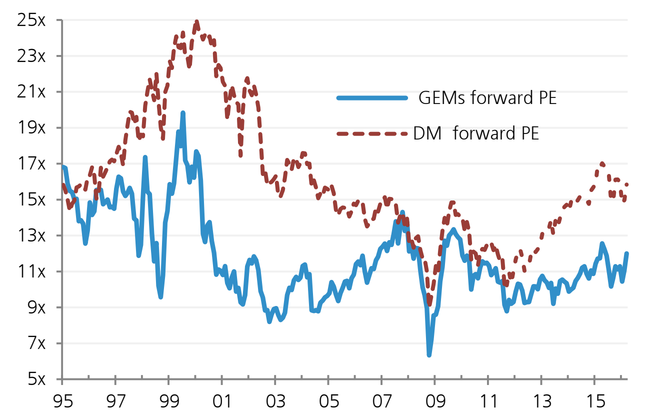
Source: IBES, Datastream, UBS

P/E: Little Value, even with optimistic EPS forecasts

Over the five years to end- 2015, no value opened up in EM equities as a 31% fall in MSCI GEMs was accompanied by a 29% fall in earnings (both in USD). Over this period, any rally tended to push EM equities into expensive territory. Relative to DM, MSCI GEMs has opened up a significant forward P/E discount since the end of 2010, largely because DM equities became richer rather than EM cheaper (Figure 13 and Figure 14). This discount levelled off in a 25-30% range after the end of 2012 and currently stands just above its long-term average of 24%.

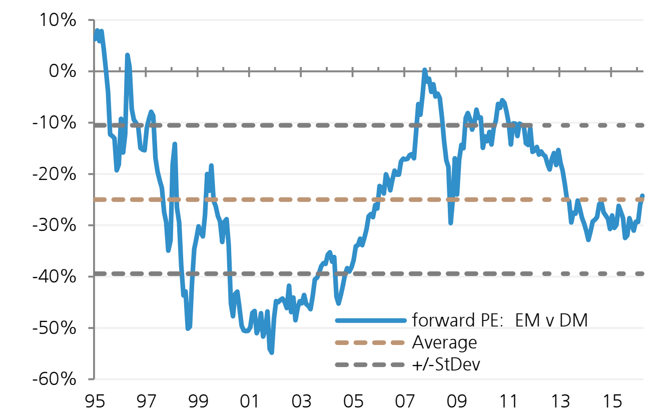
Even the consensus earnings based P/E ratio is already above its long-term average

Figure 13: EM, DM Consensus Forward P/E



Source: IBES, UBS

Figure 14: EM/DM Forward P/E Relative



Source: IBES, Datastream, UBS

By sector, the valuation data shows how narrow are the areas of value in EM. Only Financials (which typically trade on P/BV) and Utilities (perennially out of favour) trade below their 20-year average multiples, while IT is at fair value. All other sectors currently trade above their 20-year averages, especially Materials and Consumer Staples.

On a P/E basis EM looks expensive. On a P/B basis it looks cheap. Why? Because the E knows (no growth), but the B doesn't yet

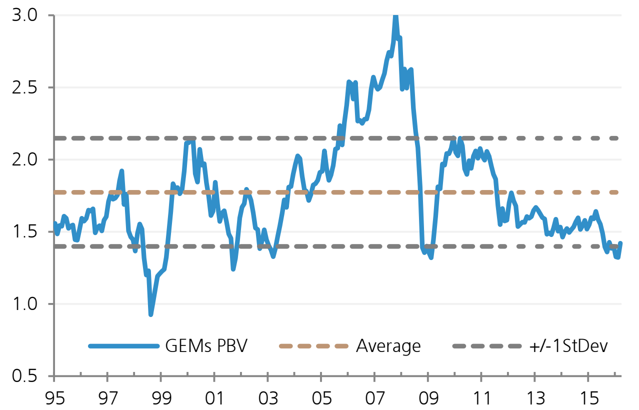
So, on a P/E basis we really don't see a big valuation case to be made for EM. All claims of EM being cheap really rest on the P/B. That's what we tackle next, but even before we go there one really must ask what might the P/E know that the P/B doesn't? It is that E just isn't coming back in quite the same way. B will get a wind of it soon enough, and change its colours, we think.

Where the rubber meets the road – How to think about Price to Book in EM

On a P/B basis EM equities are trading at just 1.42x at end-March, a 23% discount to its long-term average of 1.8x (Figure 15). However, there are two concerns about this apparently positive conclusion:

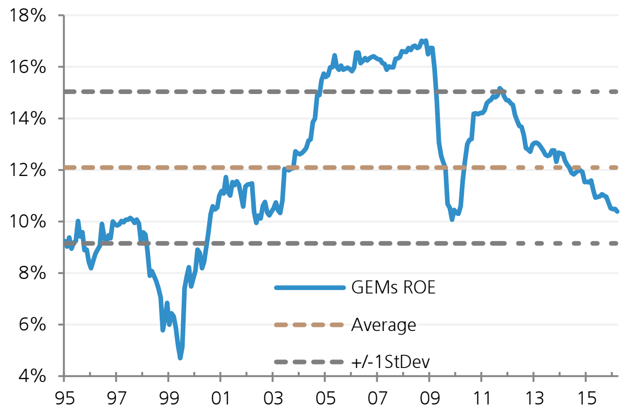
- These low P/BV ratios must be set against the backdrop of a steady fall in the average EM RoE from 15.2% (one standard deviation above its 20-year mean of 12.1%) in late-2011 to 10.4% at the end of March, which is approaching one standard deviation below this average (Figure 16); and
- We expect Book Values of EM corporates to come under pressure as EM growth continues to slow – or, at least, fails to rebound; as balance sheets come under pressure this will push BVs lower.

Figure 15: MSCI EM P/B ratios



Source: MSCI, UBS

Figure 16: MSCI EM Return on Equity (RoE)

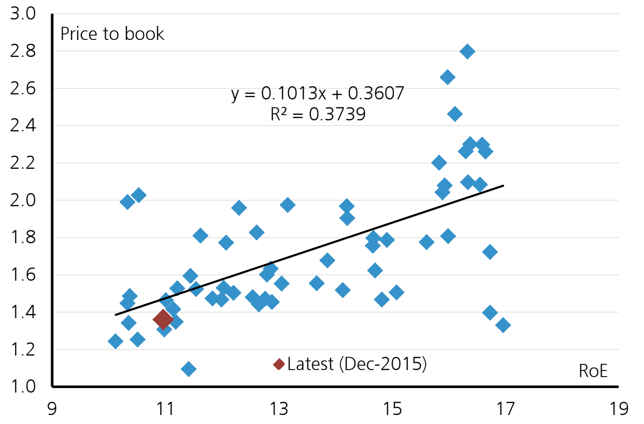


Source: MSCI, UBS

Figure 17 allows us to judge at what P/BV should EM trade, given the current average RoE: the higher the RoE, the higher the P/B ratio. Again, using data back to 1995, the P/BV-RoE fit is much better and suggests, remarkably, that the 'fair value' P/BV, based on the current RoE, for MSCI GEMs is just above today's levels (Figure 17).

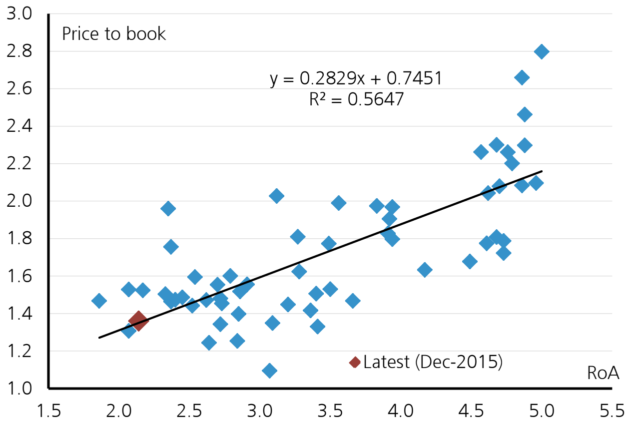
Today's P/B levels, even if we were to assume that they are correct, don't seem out of sync when one looks at where RoE is

Figure 17: EM P/B vs. RoE



Source: Bloomberg, Datastream, UBS

Figure 18: EM P/B vs. RoA



Source: Bloomberg, Datastream, UBS

We have made the additional point that the quality of RoE in EM is poor because it has been propped up by high leverage. See (Theme #6: Simmering trouble – Mapping the path of EM pain). If instead of looking at EM P/B in the context of RoE we were to set it against RoA (which includes margins and assets turns but excludes leverage from RoE) then the current P/B doesn't look cheap at all (Figure 18). That's why we don't like thinking of the plunge in P/B in isolation.

The persistent decline in E which is likely to infect B, and the big decline in RoE and RoA makes the decline in P/B look, if anything, modest

But there's more. How appropriate is it today to make broad comments about EM valuations on an aggregate basis? The higher the variance of a distribution the less one can trust its median. And the variance of EM valuations has been rising. Interestingly, this less true when breaking valuations down by countries; the real increase in variance is coming through in valuations across sectors (Figure 19). This is what we investigate next.

Figure 19: Sectoral variance across MSCI EM : standard deviation of price to book across the 10 GICS sectors

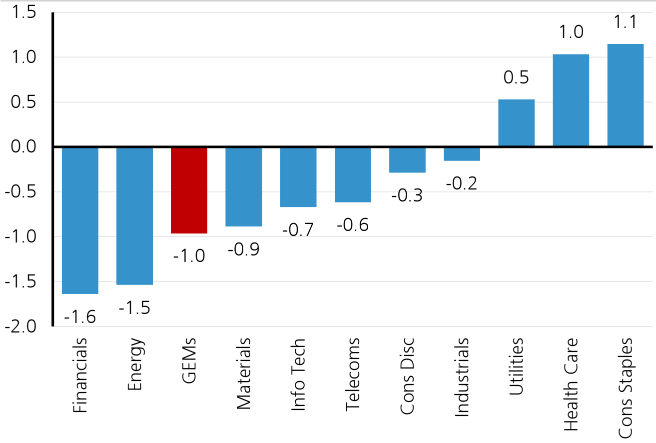
Source: Datastream, UBS

Looking at this P/BV data by sector (Figure 20), there seems to be much more value than was the case for the P/E metrics. In this case, the only sectors *not trading* at a P/BV discount to their 20-year history are Health Care, Consumer Staples and Utilities. All other sectors – Energy, Financials, Materials, IT, Telecoms and, just, Industrials and Consumer Discretionary – currently have a P/BV ratio below their long-term averages.

Good news? Not so fast. If the same chart is drawn for sector RoEs (Figure 21), the only sectors currently carrying an RoE above their 20-year averages are Utilities and (just) IT, with Financials, Health Care and Consumer Staples close to their averages. Pulling these two charts together, the only sector with a bullish combination of below-average P/BV and above-average RoEs is IT, although the Utilities sector has an above-average RoE with a smaller premium on P/BV.

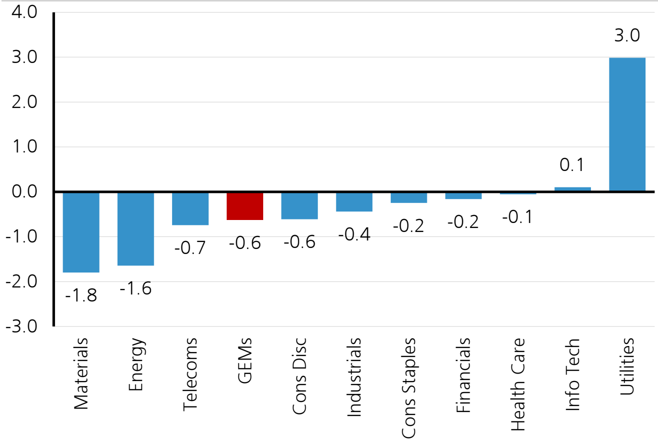
The only sector with a bullish combination of below-average P/BV and above-average RoEs is IT

Figure 20: EM sector P/B: Standard deviations from mean



Source: MSCI, UBS

Figure 21: EM sector RoE: Standard deviations from mean

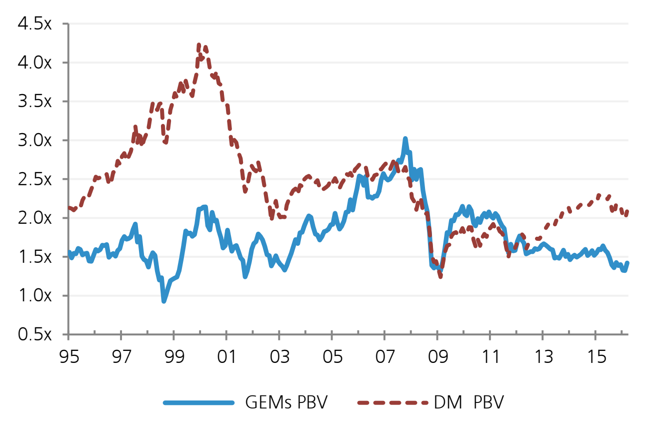


Source: MSCI, UBS

If there is some P/BV vs. RoE value in parts of EM in absolute terms, this seems to disappear when the metric is compared to DM sectors. Since end-2010, EM equities have eroded steadily from a P/BV premium to DM of 18% to a discount of 32% (1.42x v. 2.09x) today (Figure 22), a discount that has kept widening recently, unlike the EM/DM P/E discounts. The P/BV discount to DM is in the lower half of the monthly frequency distribution of this metric since 1995 (Figure 14).

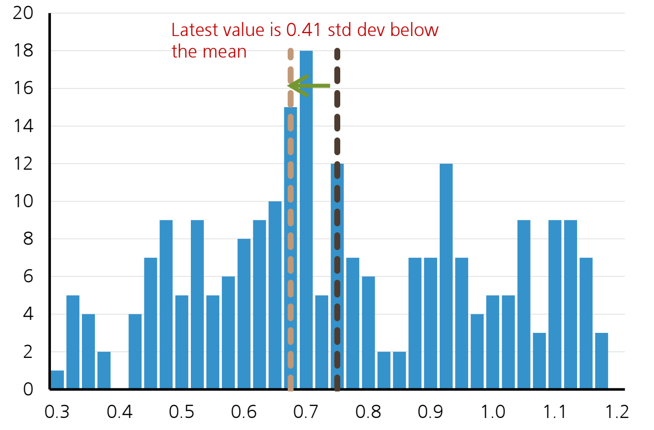
The ratio of EM P/B relative to DM is 0.41 standard deviations below its long-term mean

Figure 22: EM, DM P/B ratios



Source: MSCI, UBS

Figure 23: Distribution of EM P/B relative to DM

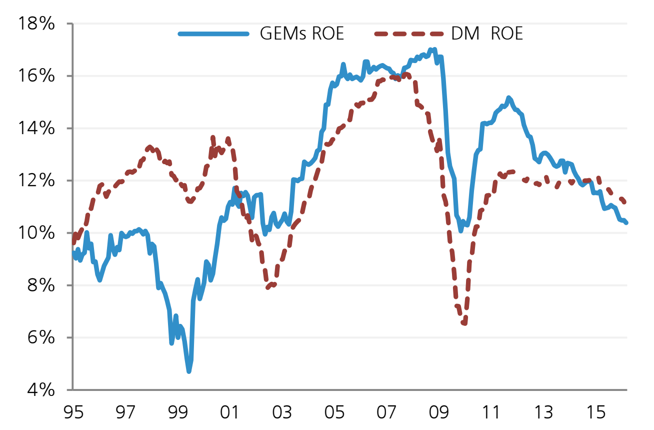


Source: MSCI, Datastream, UBS

However, the RoE relative has also been declining against EM (Figures 15-16). Although this EM/DM discount is still sitting at only 4% today (10.4% vs. 10.8%), this compares to a premium of 23% (285bp) as recently as late-2011. So, while the P/BV discount to DM is in the lower half of its frequency distribution, so is the RoE.

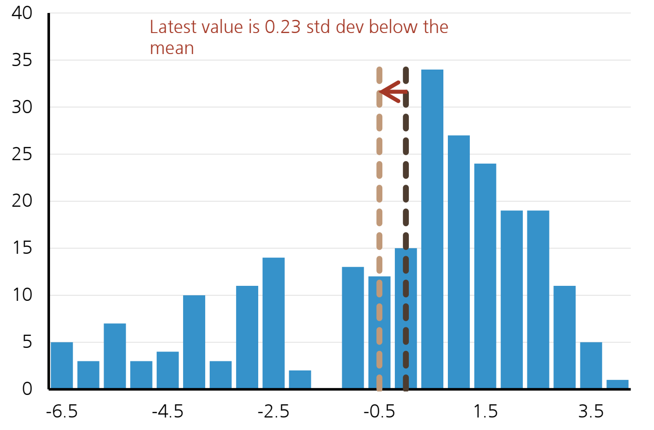
The ratio of EM RoE relative to DM is 0.23 standard deviations below its long-term mean

Figure 24: EM, DM RoE



Source: MSCI, UBS

Figure 25: Distribution of EM RoE relative to DM

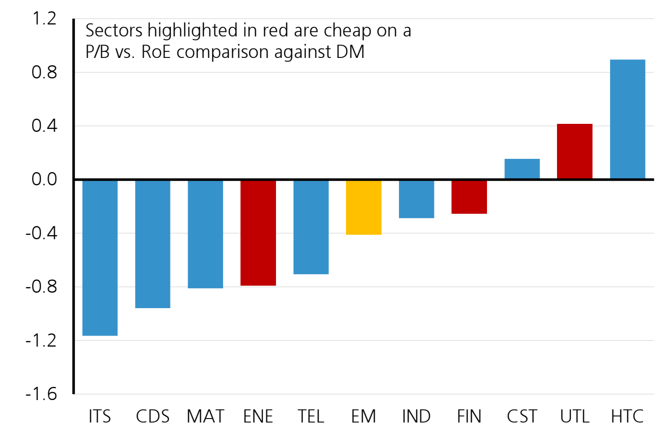


Source: MSCI, Datastream, UBS

Finally, if we look at P/BV valuations vs. RoEs by sector versus DMs, some clarity does emerge. There are three sectors with above-average relative P/BVs but also above-average RoEs (Figure 18 and Figure 27) – expensive sectors versus DM, but with higher profitability – these are Health Care, Consumer Staples and Utilities.

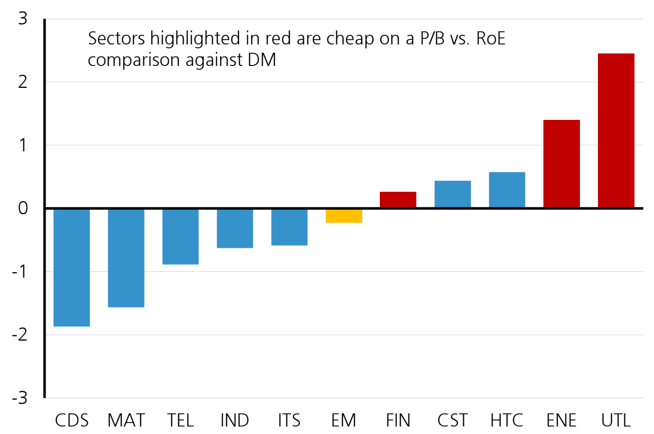
In the opposite direction, five other sectors – Materials, IT, Telecoms, Industrials and Consumer Discretionary – have P/BV discounts versus DM but also RoE discounts.

Figure 26: EM sectors P/B relative to DM: Standard deviations from 20y mean



Source: MSCI, Datastream, UBS

Figure 27: EM sectors RoE relative to DM: Standard deviations from 20y mean



Source: MSCI, Datastream, UBS

On this basis, the only attractive EM sectors versus DM (below-average P/BVs and above-average RoEs) are Energy (mainly due, in this case, to falling earnings power and Book Values for Energy companies in DM) and Financials (a sector that has been badly hit across global markets in recent months). Utilities also look attractive in that they provide much higher relative RoE for than their relative (expensive) valuations.

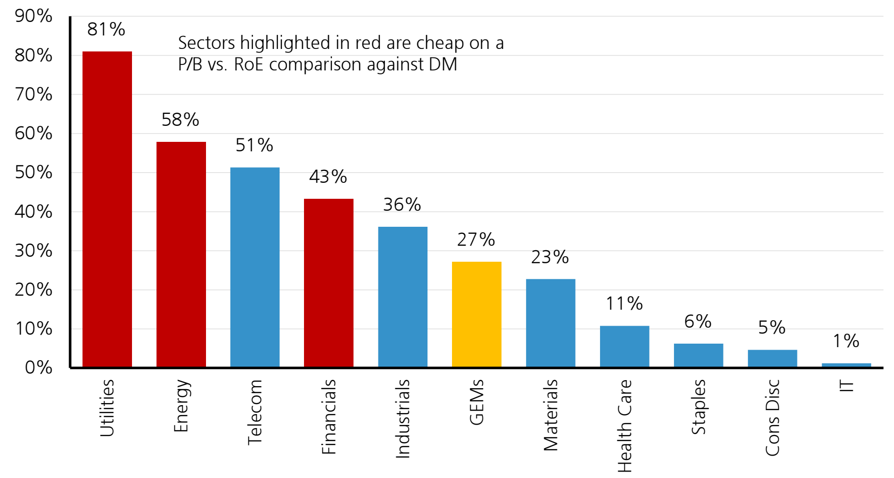
Energy and financials are seem to be the only sectors with a combination of average relative (to DM) RoE and below average relative (to DM) PM. Utilities are expensive but their relative RoE difference over DM seems to be higher

We think there is a very good reason the market has not pushed the P/B higher despite high RoEs. It is simply that the market doesn't expect these RoEs to sustain.

Note that these are precisely the sectors with significantly above-average market cap weights in state owned enterprises. According to the annual update of our proprietary SOE database[3], we estimate that 58% of the EM Energy index and 43% of EM Financials is in SOEs, versus an average for MSCI GEMs of 27% (Figure 28).

The sectors where RoE is high relative to P/B are ones which have very high SOE representation

Figure 28: SOEs in GEMs: % of Sector Market Cap



Source: IBES, MSCI, UBS estimates

Sector and country preferences

To put it plainly then, we don’t find EM cheap at an aggregate or a sector level in absolute or relative terms. Given this backdrop we have been picking our country and sector preferences based on a least-worst basis. In this context we like the EM technology, consumer discretionary industrials and energy relative to materials, consumer staples, telecoms and utilities. By countries we are overweight India, China, Colombia, Russia, Poland and Turkey, and underweight Brazil, South Africa, Malaysia, Thailand, Greece, and Chile.

[3] See "GEM SOEs: Underperforming and Underweight", Macro Keys, Geoffrey Dennis, March 29, 2016.

EM FX: If it ain't fixed, keep fixing it

EM currencies have seen significant turbulence in recent years. Stare at a long-term chart of USDBRL, USDTRY or USDZAR for instance, and you'd be forgiven for mistaking the global financial crisis of 2008 for 2013-2015. However following a backtracking Fed, and signs of stabilising growth in China and in oil prices, many clients have put forward the view that this asset class may finally have reached an inflexion point.

We noted in part 2 of this series of notes that the current configuration of economic and financial variables in EM is very different from that seen in previous spells of EM appreciation, that trade balance improvement was likely not be a sufficient condition for currencies to stabilise, and that EM cyclically continues to show few signs of improving competitiveness or improving external demand. Today we aim to take a deeper dive into EM FX valuation from a more structural perspective. In particular we examine:

We look at structural EM valuations using three tools

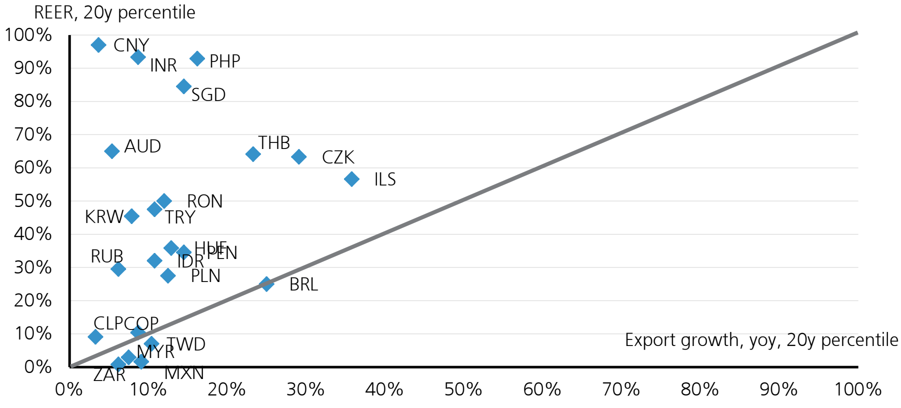
- The long-term level of EM real effective exchange rates (REERs) relative to the long-term level of EM export growth,
- The evolution of unit labour cost (ULC) based exchange rates in EM, to gain a more accurate assessment of the degree of EM FX movement that has actually accrued in recent years,
- The findings of our fundamental equilibrium exchange rate (FEER) model, which attempts to identify currency over- or under-valuation in the context of the strength of the balance of payments

1) EM real effective exchange rates: Mean reversion aversion

Given the export reality, it's hard to talk of distress in EM FX valuations on aggregate

We start by looking at the level of EM REERs as a percentile of their ranges over the last 20 years, a long history that incorporates different EM growth, commodity, and risk cycles. While a few currencies (e.g. the MXN, ZAR, and MYR) have fallen to two-decade lows on this measure, this is far from a universal finding: averaging across the 22 EMs shown below, EM REERs stand at the 41st percentile of their 20-year distribution. When we consider that EM export growth stands at just the 4th percentile of its 20-year distribution, this valuation hardly screams of distress.

Figure 29: EM REER (levels) vs. export growth (% y/y) – percentile of 20y distributions



Source: Haver, UBS

More importantly, we think it would be misleading to focus purely on the level of EM REERs as a means to identifying valuation in FX. This is because EM REERs are statistically not mean reverting variables, i.e. most EM REERs trend over time, and because price elasticities for EM exports have tended to be much less important than income elasticities in driving EM exports (Figure 30). In today's environment of subdued global income and trade growth, price elasticities are likely to be especially weak: EM REERs are likely to need to do even more heavy lifting than usual to stimulate exports. This makes the threshold for identifying currency undervaluation increasingly demanding.

Price elasticities of EM exports are typically far weaker than income elasticities, meaning currencies have to work very hard in a world of weak global trade

Figure 30: Price vs. income elasticities of EM exports: results from regressing EM export growth (% y/y) on REER changes (% y/y) and G3 GDP growth (% y/y), Q1 2000 - Q4 2015

	REER	G3 GDP growth
Korea	-0.10	**3.64**
Thailand	-0.13	**4.45**
Brazil	**-0.18**	**3.83**
Mexico	0.12	**3.12**
South Africa	**-0.13**	**3.12**
Turkey	0.06	**2.02**
Poland	-0.05	**3.14**
Malaysia	**-0.60**	**4.43**
Taiwan	**0.41**	**5.11**
Indonesia	**-0.30**	**4.07**
Israel	**0.34**	**4.79**
Russia	0.03	**2.39**
Singapore	-0.18	**4.06**
EM average	-0.05	3.70

Source: Haver, UBS
Note: bolded values denote significance at a 90% confidence level.

2) Measuring FX movements properly: the rise of the ULC-based REER

We have argued in previous research that many investors appear to be overstating the degree of weakness that has actually taken place in EM FX in recent years. This is because most market participants look at CPI-based REERs, while we believe unit labour cost (ULC) based REERs are a more accurate gauge of real EM FX movements. Why do we think this?

We think investors are drawing the wrong conclusions as to how strongly EM FX has actually depreciated, by looking at CPI REERs

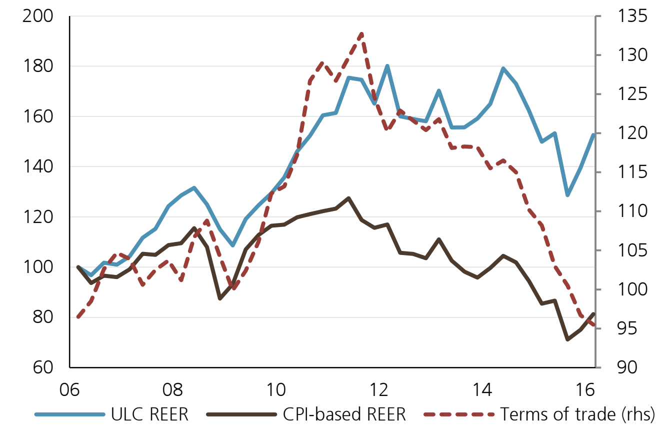
CPI is not the relevant inflation rate to help think about external competitiveness in EM, in our view. To the extent that it is heavily influenced by items such as food and fuel prices, given their high share in EM inflation baskets, CPI trends will likely tell us far less about export competitiveness than the growth in unit labour costs i.e. the cost needed to compensate workers for each unit of output produced. This is particularly true in the last few years during which wages have grown considerably faster than CPI in recent years.

At the same time, EM productivity growth has strongly decelerated, exerting additional upside pressure on EM unit labour costs. With EM wages rising strongly and productivity flat-lining, it's little wonder that exchange rates have needed to depreciate strongly for EM competitiveness just to stand still.

We're partial to ULC-based REERs over CPI based REERS. See the next page for our estimates for 6 key EM countries

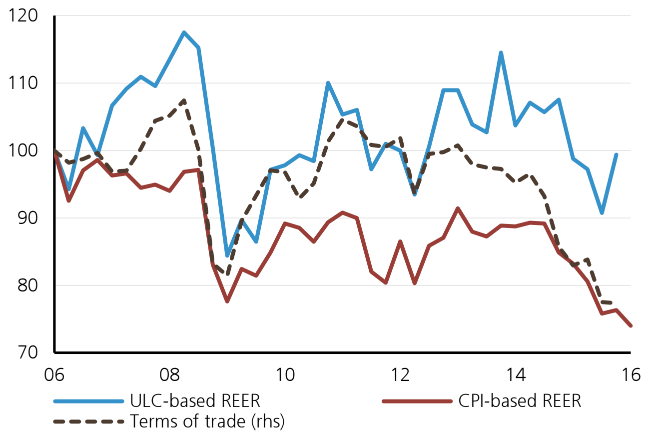
ULC data is difficult to extract for several EMs, but on the next page we present our estimates of the ULC based REER for Mexico, Brazil, Chile, Turkey, South Africa, and Korea. We have included the CPI-based REER and the local terms of trade (for commodity exporters) and export growth (for commodity importers) for reference.

Figure 31: BRL CPI- and ULC-based REER vs. terms of trade



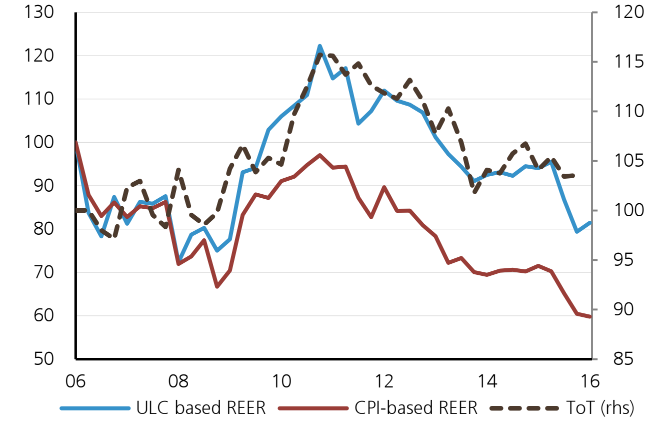
Source: Haver, UBS

Figure 32: MXN CPI- and ULC-based REER vs. terms of trade



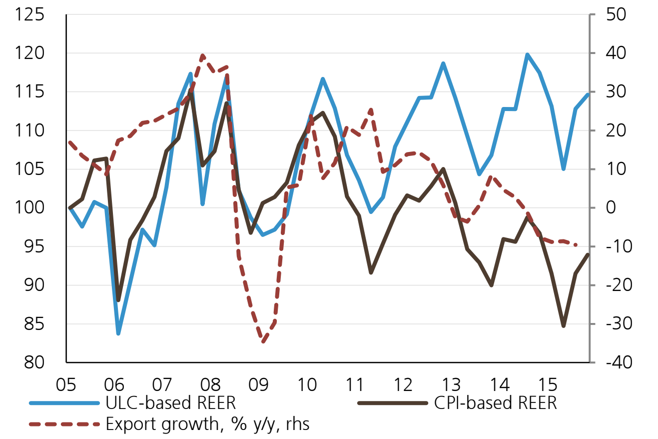
Source: Haver, UBS

Figure 33: ZAR CPI- and ULC-based REER vs. terms of trade



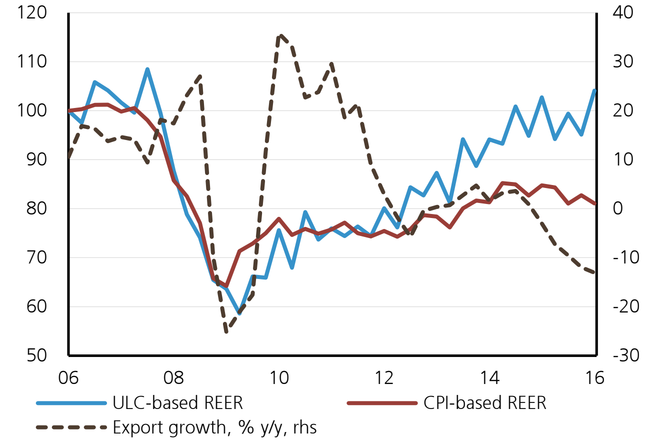
Source: Haver, UBS

Figure 34: TRY CPI- and ULC-based REER vs. export growth



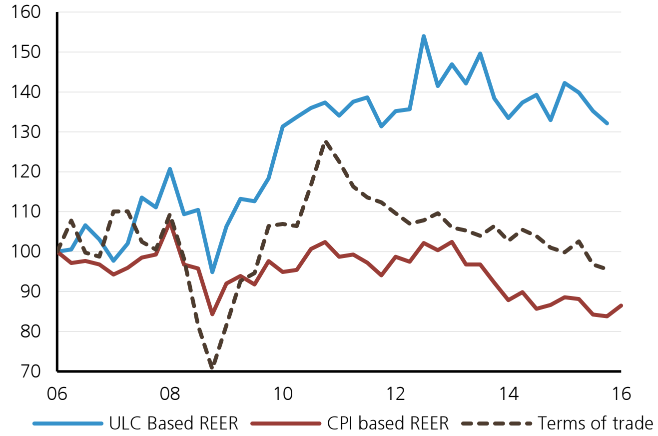
Source: Haver, UBS

Figure 35: KRW CPI- and ULC-based REER vs. export growth



Source: Haver, UBS

Figure 36: CLP CPI- and ULC-based REER vs. terms of trade



Source: Haver, UBS

From the charts above we can make two key points about EM FX valuation:

First, ULC-based REERs have risen far more strongly in recent years than CPI-based REERs. Indeed, with the exception of the ZAR, **most of the currencies shown in the charts above have depreciated only very slightly since 2011**, despite many of them weakening as much as 30-50% against the dollar in nominal terms. We suspect the same would be true for other key markets such as the INR and IDR. This limited depreciation in ULC-based REERs likely helps explain the very limited responsiveness of EM exports and export shares in these countries to FX depreciation.

Second, when ULC REERs are overlaid against the deterioration in these countries' terms of trade (for commodity producers) or export growth (for commodity importers), the **weakness in EM exchange rates generally does not look excessive**. The last time ULC-based REERs were at these levels, terms of trade and export growth were far stronger than is the case today. This suggests further trade-weighted depreciation for these currencies may be in store.

3) What does FEER tell us about the health of EM balance of payments?

FEER can tell us more about the absolute valuation of EM currencies than PPP based valuation models

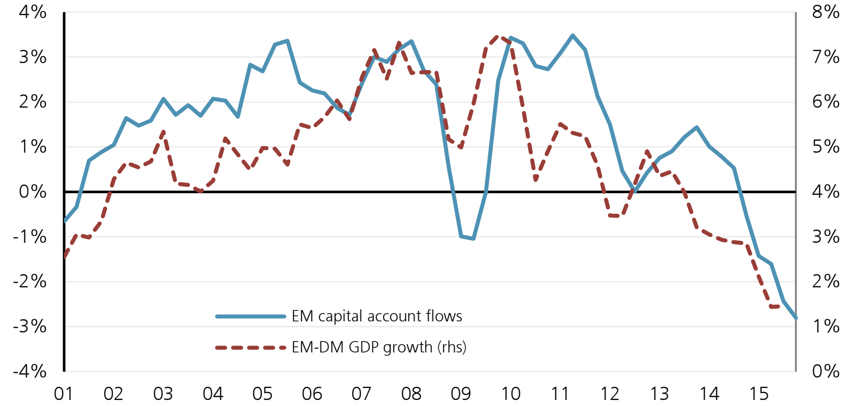
REER based valuation models are a useful measurement tool, but to the extent that they begin and end in currency movements, they tell us little about the actual state of EM fundamentals. To help with this, we draw on our fundamental equilibrium exchange rate (FEER) model[4]. FEER is based on the simple premise that the proof of currency over/undervaluation lies in the strength of the balance of payments, in particular whether the predicted current account looks sustainable over the medium term, without needing to on potentially fickle portfolio and 'other investment' inflows. In contrast to mean-reverting REER valuation models, FEER has the important advantage of being able to adjust for weakening income elasticities of EM exports better than REER, and has had a stronger track record in recent years.

Though current account positions have improved across most of EM, the reverse is true for growth and capital accounts

While EM current account positions have improved strongly since late 2013, this has been entirely due to weaker domestic demand and commodity prices. This has had the result of pushing EM growth weaker, both in absolute terms and relative to DM, in turn pressuring capital account outflows (Figure 37). In fact, capital account flows to EM are now running at the weakest levels in at least a decade – and worse than during the 2008 crisis – compromising EM FX even as current accounts improve. The good news is that some of this reflects increased outward investment from EM that can be repatriated back during times of stress. The bad news is that this may count for little in today's weak growth, moderate volatility environment.

[4] For details on our FEER model, please refer to EM Navigator: Where is fair value in EM currencies now?

Figure 37: EM capital account flows have traditionally been well correlated with EM-DM growth spreads

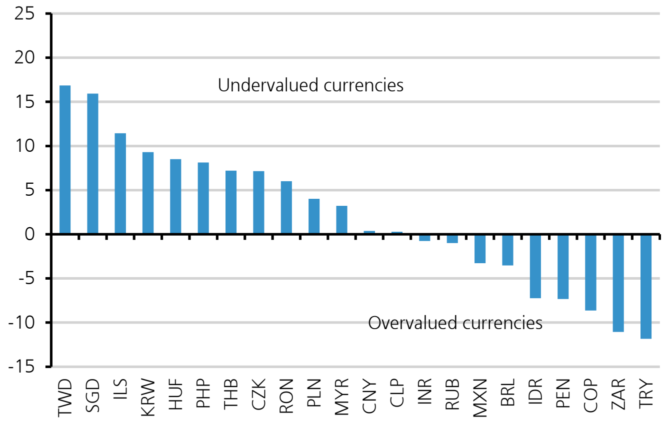


Source: Haver, UBS
Note: EM capital flows shown here is GDP weighted average of 22 EM countries.

Our FEER model thus shows that several EMs continue to screen as fundamentally overvalued – in particular the BRL, ZAR, IDR, COP and PEN (Figure 38). Unfortunately these markets comprise a heavy share of the local currency debt (GBI-EM) benchmark (Figure 39). While valuation looks fair to cheap for much of MSCI EM, especially for markets in Asia and CEE, weak trade, low inflation, and a depreciating CNY mean that investors should be alert to risk that strengthening/ stability in these currencies could well play out more in real terms (inflation) than in investable nominal appreciation.

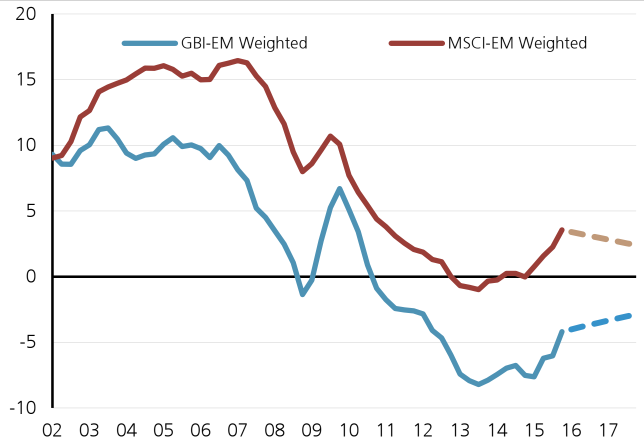
Much of the identified undervaluation in MSCI EM has played out in recent years through real, rather than nominal appreciation

Figure 38: UBS FEER results: % chg in REER required to achieve macro adjustment



Source: Haver, UBS

Figure 39: Average EM REER undervaluation, %



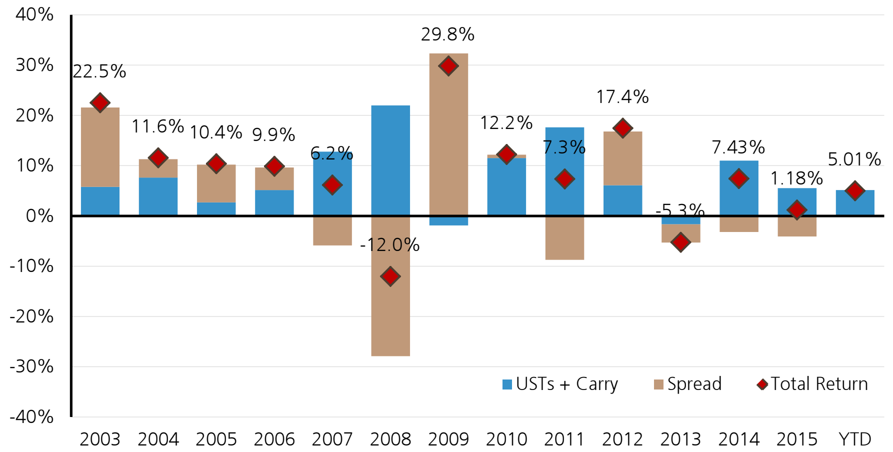
Source: Haver, UBS

EM credit: Balance sheet pressures to persist even if commodities stabilise

The path of spreads in the first quarter of this year has been more winding than a rollercoaster, but we actually find ourselves close to unchanged from levels at the start of the year. Stability in spreads has been good enough to provide decent returns in this asset class, thanks to the coupon, but more importantly to the move lower in rates (Figure 40).

Spreads have detracted from returns for 3 years but have been net neutral year to date

Figure 40: EM sovereign credit spreads : Total return attribution



Source: Datastream, UBS

For our purposes here we regard coupon as a given, take a neutral view on US rates, and focus really on what drives spreads, and where we should be headed from here.

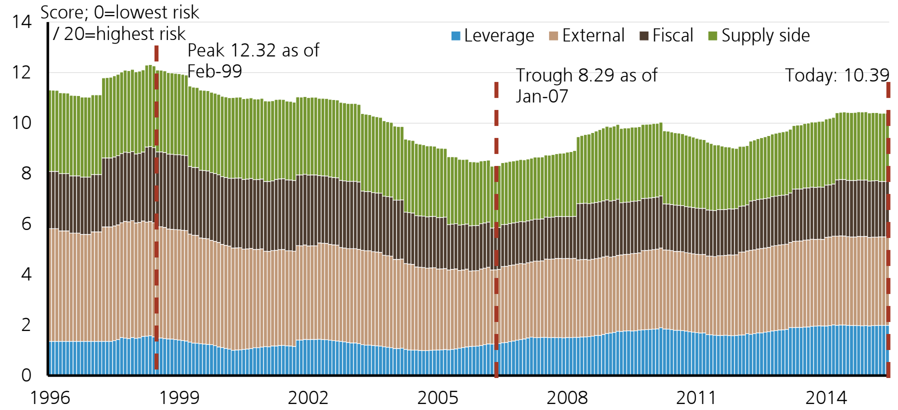
Modelling EM credit spreads

We base our trading fair value for EM spreads on a) the state of EM macro balance sheets, b) commodity prices and c) global risk appetite.

In 2016 EM income statements ought not to see the degree of 'incremental' deterioration they have done over the last 5 years. However, the accumulated impact of lack of growth, which even today is really only flat-lining at a weak level, has already infected EM's stock variables, we believe. A state of drift in growth is no longer net neutral for EM – current low growth will drive a passive worsening of EM's credit risk.

A state of drift at current low growth levels is no longer net neutral; it will passively drive credit risk higher

Figure 41: UBS EM macro balance sheet risk score

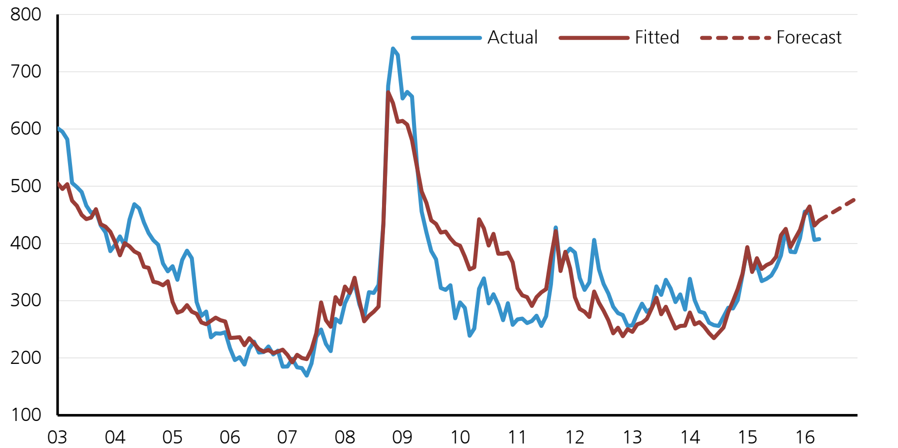


Source: Haver, UBS

Our macro balance score conceptualises 'fundamentals' in our fair value model for spreads

We have conceptualised EM macro risk in our macro balance sheet risk score which is an aggregation of leverage risk, external risk, fiscal risk and supply side/institutional risk[5]. This index has given back the gains of the last 10 years, which is the time over which the bulk of fixed income investment has come in. (For greater details see Theme #1: EM enters a new, dangerous phase.)

Figure 42: Actual vs. fitted EMBI global diversified spreads



Source: Bloomberg, Datastream, UBS

Our measure of commodity prices excludes agricultural commodities and focuses instead on oil (75%) and metals (25%) as these constitute the revenue streams of EM issuers. There is some correlation between the macro balance sheet score and commodity price trends, but this doesn't change the overall results at all[6]. We enter commodity prices in log form in our model to aid ease of interpretation.

[5] 12 risk variables that constitute the sub-indices in our macro balance sheet risk scores are: credit to GDP level (deviation from per capita income forecasted level), change in credit to GDP, current account, external debt to GDP, short term external debt to reserves, FDI, net international investment assets, the proportion of external debt denominated in foreign currencies, fiscal balance, public debt, WB governance indicators and a proxy for the slope of the Phillips curve.

[6] We can also overcome this multicollinearity by replacing the macro balance sheet (MBS) with the residual of the regression of MBS scores on commodity prices – a commodity free balance sheet risk score. We've confirmed that this innovation doesn't change the overall picture at all, and so we've presented the original version, which is more straightforward to interpret.

Regular readers would be familiar with our risk premium proxy, which is the first principal component of volatility across developed market assets[7]. This muddies the pure fundamentals with a 'trading' component but is nonetheless a very important element of the fair value model in a world where central banks are trying to control not only the risk free rate, but also the risk premium.

Model forecasts

We find that EM sovereign credit spreads (we model EMBI global diversified spreads) are in a co-integrating relationship with our explanatory variables, which allows us to use the levels regression as a proxy of the long-term relationship. Here is the model equation[8]

$$\underset{(2.27)}{EMBI = -272.8} - \underset{(-6.84)}{91.5 * \log(Commodity)} + \underset{(10.6)}{65.67 * \text{global risk}} + \underset{(10.15)}{60.19 * \text{balance sheet risk score}} \quad R\ sq\ 82\%$$

Each one point of score deterioration in our macro balance sheet risk index leads predicts a widening of spreads by 60 bps, a 10% drop in commodities is consistent with a 10 bps widening while a deterioration in global risk appetite by one standard deviation also drives spreads wider by about 65 bps.

Spreads presently look 30 bps too tight

The analysis tells us that at the present, spreads are about 30 bps too tight. However, this is the less interesting part of the result. The equation allows us to play with future scenarios, which is important given we believe that EM fundamentals such as private and public leverage ratios and possibly external debt will continue to drift wider if nominal growth doesn't improve.

We expect them to widen by 50-70 bps from current levels by year end

We expect EMBI GD spreads to drift wider towards 480 bps year end. The current level of growth is consistent with 0.3-0.5 point widening per annum in our macro balance sheet risk. With this drift, and assuming a) that global risk appetite is positioned right at the median of its long-term distribution, and b) commodity prices stay largely unchanged, we see (sovereign) spreads widening by 50-70 bps from current levels. The table below outlines this base case, and other 'high likelihood' alternative case scenarios

Figure 43: EMBI GD Spreads under different scenarios

		Macro balance sheet risk score		
		9.8	10.4	11.0
Commodity price scenarios	20% down	423	465	503
	No Change	399	440	478
	20% up	376	417	460

Source: Bloomberg, Datastream, UBS

As spreads go higher, the risk of illiquidity driven non-linear moves rises

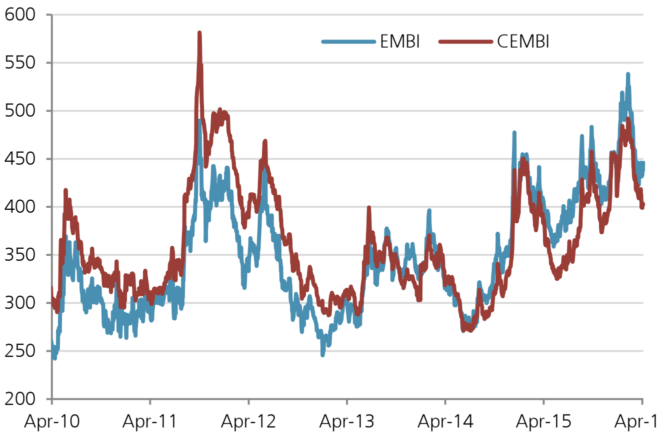
It is important to remind readers here that this model is a linear model, an abstraction of reality which tends to become less accurate the wider spreads go. That is because it doesn't incorporate the non linearities that emanate from liquidity risk which rise sharply in times of stress. As a result of this we would interpret the numbers above as best case scenarios, should our assumptions come to pass.

[7] Our DM risk premium metric is calculated as the first principal component of US and EU HY spreads, US and German equity market vol, USDJPY, AUDJPY and EURUSD vol, US/EU TED spreads and US Treasury options volatility.
[8] Numbers in brackets denotes T-statistic.

Corporates likely to underperform sovereign

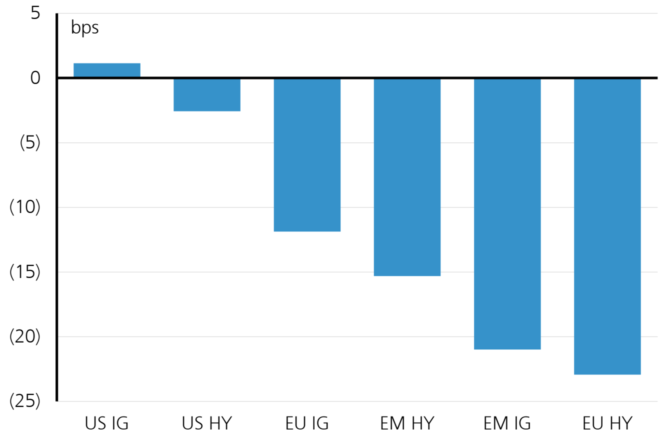
As we've noted previously, in the medium to long term EM has to grapple with the issue of quasi sovereign corporates infecting public debt ratios in EM sovereigns (see Theme #6: Simmering trouble – Mapping the path of EM pain). This will first weigh on EM financial spreads though, and along with weakness in commodity prices (corporate spreads display higher sensitivity to commodity prices and global risk appetite than do sovereign) this should mean that corporates underperform sovereigns.

Figure 44: EM sovereign and corporate spreads



Source: Bloomberg, UBS

Figure 45: Year to date performance of spreads by rating

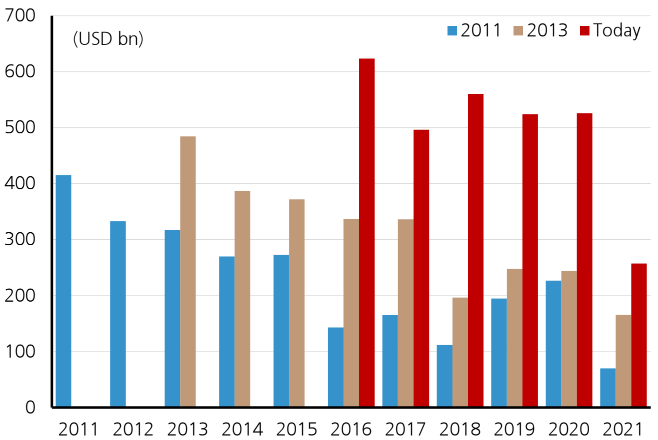


Source: Datastream, Bloomberg, UBS

Another variable that will impact the performance of corporate spreads is the higher debt redemption profile (Figure 46) in the face of a less euphoric primary market issuance (Figure 47). Clearly, the generosity from global central banks has the potential to renew animal spirits in EM, but thus far this year the amounts issued have been miniscule compared to earlier years. As we've noted in the past (See Theme #6: Simmering trouble – Mapping the path of EM pain) nearly 30% of issuance in EM has likely been directed to rolling over maturing debt. As this source becomes less reliable the pressure on corporate spreads could increase. We are looking for 75-100 bps widening in corporate credit from current levels.

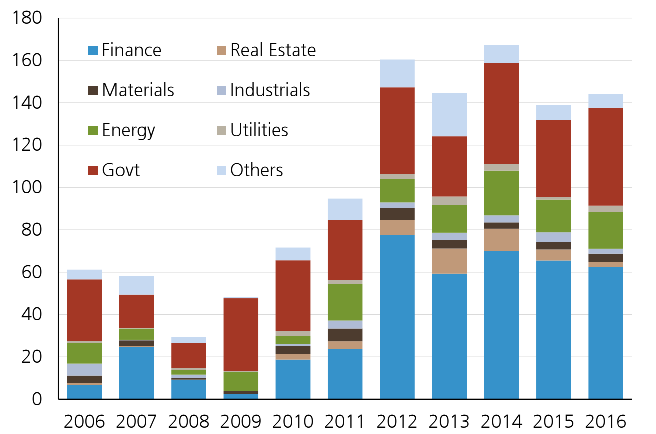
In addition to the drift wider in sovereigns, corporate spreads are likely to be pressured by higher redemption pressures in the face of a less generous primary market

Figure 46: EM USD debt refinancing schedule



Source: Bloomberg, UBS estimates
Note: Total EM data here is summed from 38 economies.

Figure 47: Jan - March primary issuance in EM



Source: Bloomberg, UBS

Local rates: Optically appealing, but beware rising credit risk

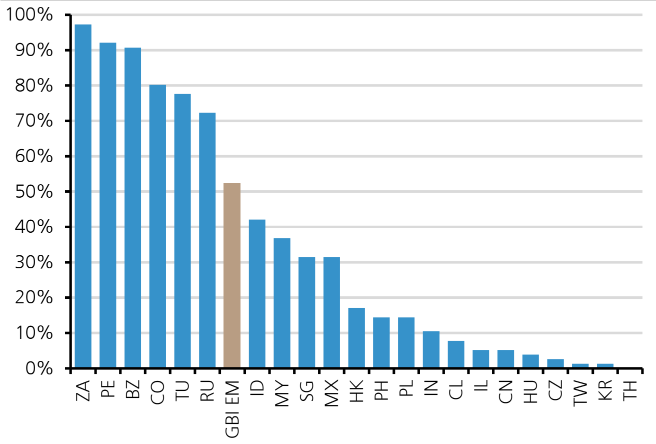
Currencies a key driver of total returns in EM local currency debt. In this chapter we focus purely on rates valuations

At the outset we should point out there is no discussion on EM local currency bonds without one on EM FX. The experience of the past 10 years shows that FX is tpyically the most important swing variable for returns in this asset class, with USD-based investors typically never earning positive total returns in years when spot depreciates. While transitory FX depreciation can be hedged away, it is prohibitively costly to do so when FX weakness is persistent. We estimate that GBI-EM weighted 10yr yields fall from 7.0% to just 1.8% annualised net of FX hedging costs. Our cautious views on EM currencies have been outlined in the previous chapter, and in this section we focus on pure rates valuations.

EM yields characterised by wide dispersion

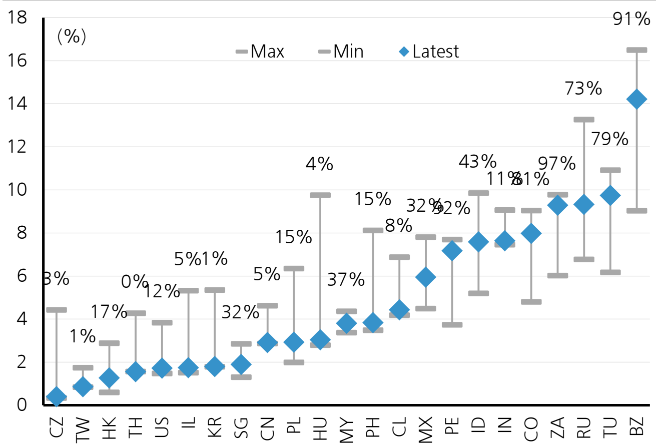
The first point to make is that there is massive variation across EM yields. Yields in North Asia, Chile, Israel, and the CEE today trade close to the lowest levels seen since 2010, while those in South Africa, Brazil, and Colombia are close to their highest. On aggregate, though, benchmark (GBI) EM 10y yields are today trading slap bang in the middle of their ranges over this period (Figure 48).

Figure 48: 10y yields in EM: percentiles since 2010



Source: Haver, Bloomberg, UBS

Figure 49: 10y bond yields in EM – ranges since 2010

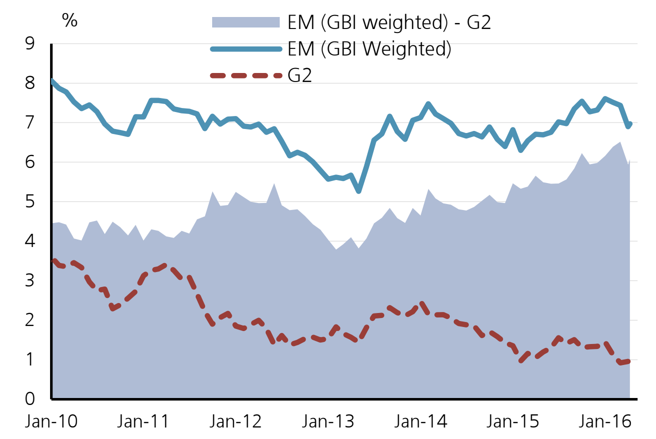


Source: Haver, Bloomberg, UBS
Note: Values above individual country bars denote percentile of range since 2010.

Figure 50: Standard deviation of EM bond yields

Source: Haver, Bloomberg, UBS

Figure 51: EM vs. DM 10y yields



Source: Haver, Bloomberg, UBS
Note: DM here is a 60-40 average of US and German bond yields. GBI EM series uses constant, not rolling, country weights.

Arguably, in the context of developed world yields moving significantly lower since 2010, this makes EM rates look very competitive optically. Indeed, EM yields relative to the G2 stand at the 95th percentile of their range since 2010 (Figure 49).

EM nominal yields trading at historically wide levels vs. DM. Is that good enough?

The above considerations though have only looked at nominal yields, and clearly this is a very simplistic and partial way of thinking about bond market valuations. While in a low volatility and rising commodity environment nominal considerations may suffice, in current market conditions and over longer time horizons we prefer to adjust nominal yields for two factors: 1) inflation and 2) credit risk. Indeed, while we observed earlier that bond yields in markets such as South Africa, Brazil, Colombia, and Malaysia are quite high relative to their post-2010 ranges, the same can also be said for inflation and particularly credit risk in these economies.

We prefer to look at EM rates valuations net of inflation and credit risk

First, we proxy inflation expectations across EM markets using a rolling 2-year average of CPI growth[9]. In the absence of reliable inflation linker data and in view of the generally adaptive nature of inflation expectations in EM, we think this is a reasonable if imperfect proxy to use. Second, we use 5y CDS spreads to strip out implied credit risk[10]. Particularly after adjusting for the latter, the valuation story for EM changes more significantly. While we find that while EM still offers a clear pick-up over DM rates, the differential is about 45th percentile of its range since 2010 – taking us back to a "middle of the pack" valuation conclusion. It seems worth noting that this valuation is quite different from 2011, H1 2012, and H1 2014, when EM bond yields enjoyed strong compression.

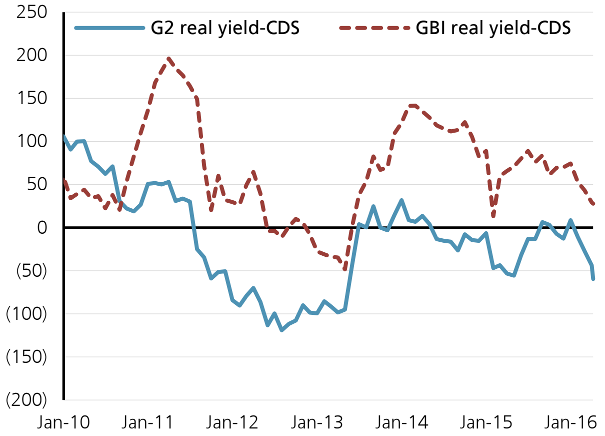
We favour rates over FX in India, Indonesia, Korea, Hungary, Mexico, and Brazil

Overall, while do see the appeal of EM rates in a world of low DM yields and where most EM central banks are comfortable accommodating weaker currencies in pursuit of growth, we believe EM investors will need to be highly selective. We believe rates in India, Indonesia, Korea, Hungary, Mexico, and Brazil offer opportunities though we would advocate FX hedging in each of these cases.

[9] While 2y rolling CPI is today likely punitively high as a proxy for inflation expectations in markets such as Brazil, Indonesia, and Russia, we are not convinced that this is the case for the benchmark as a whole. The opposite is likely true for South Africa, Poland, and Malaysia for instance.

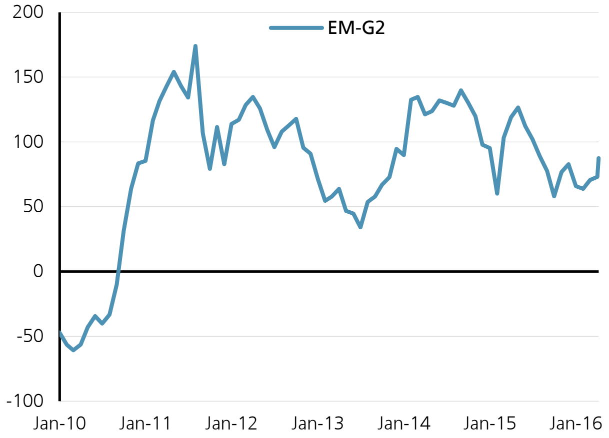
[10] Many investors have asked us why we use 5y CDS – a measure of protection in hard currency debt – to proxy credit risks for local debt investors. We agree this may be conservative but over time we have found a close connection between CDS spreads and term premia in local bond markets in EM. Second, using FX hedging costs to deflate risks faced by local debt investors would be excessively punitive. CDS spreads seem a reasonable compromise.

Figure 52: EM and DM: 10y yields net of inflation and credit risk



Source: Haver, Bloomberg, UBS estimates
Note: for EM, chart shows 10y bond yield – 2y rolling CPI – 5y CDS. EM is weighted using constant GBI weights. For DM, chart shows 10y real (linker) yield – 5y CDS. G2 uses 60% US, 40% Germany weight.

Figure 53: EM minus DM: 10y yields net of inflation and credit risk



Source: Haver, Bloomberg, UBS estimates
Note: for EM, chart shows 10y bond yield – 2y rolling CPI – 5y CDS. EM is weighted using constant GBI weights. For DM, chart shows 10y real (linker) yield – 5y CDS. G2 uses 60% US, 40% Germany weight.

Figure 54: EM Tactical Trade Monitor

EM FI/FX Trades	P&L Units	Date of entry	Entry level	Date of closing	Current level	P&L
Long CNY Short INR position expressed through 3m NDFs						**1.5%**
Short USDCNY	%	12-Jan-16	6.56		6.47	3.5%
Long USDINR	%	12-Jan-16	66.75		66.47	-1.9%
Long Indian Rupee vs South African Rand						**28.0%**
Short ZARINR	%	1-Dec-14	5.59	12-Dec-15	3.99	28.0%
Receive Israel 5y5y against USD						**-2**
Rec ILS 5y5y	bp	26-Oct-15	3.06		2.43	61
Pay USD 5y5y	bp	26-Oct-15	2.69		2.06	-63
Long Korean Won vs Indonesian Rupiah			11.00		11.38	**2.8%**
Long USDIDR	%	14-Mar-16	13090		13135	-0.4%
Short USDKRW	%	14-Mar-16	1190		1154	3.2%

Source: UBS, Bloomberg, Datastream 7-Apr-16

Past performance is not an indication of future results

Year to date, the EMBI-GD benchmark (hard currency debt) has returned 5.2%. The local currency debt GBI-EM benchmark has returned 9.3% (In USD terms)

Final PnL (in bp) includes carry/roll

Figure 55: EM Structural Trade Monitor

	P&L Units	Date of entry	Entry level	Date of closing	Current level	P&L
Long DM Financials vs EM Financials						**-4.4%**
Long DM Financials	%	17-Nov-15	159.63		145.20	-9.0%
Short EM Financials	%	17-Nov-15	441.53		420.87	4.7%
Long USD vs Asian currency basket of TWD, PHP, SGD and THB						**-2.2%**
Long USDTHB	%	17-Nov-15	36.00		35.20	-1.3%
Long USDPHP	%	17-Nov-15	47.19		46.14	-1.3%
Long USDTWD	%	17-Nov-15	32.84		32.38	-1.5%
Long USDSGD	%	17-Nov-15	1.4241		1.3524	-4.7%
Overweight Taiwan Equities vs Malaysia (FX-hedged)						**-3.0%**
Long Taiwan Equities	%	17-Nov-15	8,419		8,490	0.8%
Short Malaysia Equities	%	17-Nov-15	1,662		1,724	-3.8%
Long 5yr CNY onshore government bond, Short Australian Dollar vs Chinese Renminbi						**-7.3%**
Long 5Yr CNY onshore government bond	%	17-Nov-15	3.100		2.530	2.6%
Shot AUDCNY	%	17-Nov-15	4.535		4.907	-10.0%
Long India fixed income vs Turkey (FX-unhedged)						**-2.6%**
Long Jul-24 IGB's	%	17-Nov-15	7.67		7.66	2.8%
Short Jul-24 TurkGB's	%	17-Nov-15	9.72		9.69	-3.7%
Long INRTRY	%	17-Nov-15	0.0435		0.0428	-1.6%
Short USD/CLP, long USD/ZAR						**12.5%**
Short USD/CLP	%	17-Nov-15	711.37		678.76	3.2%
Long USD/ZAR	%	17-Nov-15	14.27		15.21	9.3%
Buy 3y NTNF's vs equities in Brazil						
Receive Jan'19s	bps	17-Nov-15	15.76		13.92	401
Short Ibov equity index	%	17-Nov-15	47,248		48,096	-1.8%
Receive MXN 1y1y rates. Long USD/MXN						
Receive MXN 1y1y	bps	17-Nov-15	4.8		4.9	-5.0
Long USDMXN	%	17-Nov-15	16.7		17.8	7.4%
Long US IG against EM low-beta credit						**13.5**
Long USD IG	bps	17-Nov-15	83.39		75.98	18.77
Short EM low-beta credit	bps	17-Nov-15	117.28		123.54	-5.27
Sell Brazil 2y CDS protection						**267.8**
Short Brazil 2y CDS	bps	17-Nov-15	317.48		156.08	267.80

Source: UBS, Bloomberg, Datastream   Market Pricing as of 1030 GMT on 7-Apr-16

Past performance is not an indication of future results

Since 17-Nov-15, the EMBI-GD benchmark (hard currency debt) has returned 4.0%. The local currency debt GBI-EM benchmark has returned 6.4% (In USD terms)

Final PnL (in bp) includes carry/roll

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