



shown in our last [report](#), issuers in many important EM domiciles, such as Chile, Mexico, Brazil, Indonesia, Russia, and Turkey have more than half of their total debt denominated in external currencies, predominantly in USD. It is also important to keep in mind that China's corporates have the lowest external debt burden of all major EM countries, at less than 20%. The focus thus should not be just China, but a potential for spillovers to the rest of EM.

Finally, we have suggested that some EM IG commodity names are still trading tight, in our opinion, given the prevailing macro environment. Following the market repricing last week, all these names are now trading meaningfully wider, including Pemex at 255bp (+25bp), Ecopetrol at 375 (+15), Vale at 310 (+20), Codelco at 235 (+20). While we view this move as one in the right direction, it still falls short of where it needs to be in this environment. In all cases, these EM names are trading roughly in line with US-domiciled issuers in the same industries with similar leverage, something that is unsustainable longer-term, in our opinion. We note that EM oil names have traded wider in the past week even in the face of a net 15% rebound in oil prices.

Additionally, three largest Brazilian banks – Banco do Brasil, Bradesco, and ITAU – are all trading in the 450-500bp spread range, while all being technically rated as IG at this point¹. We view these levels as incompatible with being IG in the longer run, particularly for a financial institution, relying heavily on its ability to access capital markets.

Volatility risk premia

Because the VIX has breached a level of 30 so rarely over the past decade, we looked to expand the number of recent historical parallels to last week's equity market shock through an alternative measure of implied vol *relative to* the level of volatility actually experienced in the market over the prior year. What we find is that such shocks tend to involve an extended period of market choppiness that runs its course over a period measured in weeks and months, not in days.

The implied-vs-realized vol measure is considered to be a proxy for the volatility risk premium that rises and falls based upon investor risk version² and expectations that volatility might break out from trend levels. In the years leading up to the financial crisis of 2008, for example, realized volatility was substantially lower than it is today, which created a lower threshold for implied volatilities to signal extreme levels of investor fear. Similarly, amid the choppiness of the equity markets during the period immediately after the 2008 financial crisis, implied volatilities remained high on an absolute basis but were actually lower than the trend at the time, suggesting an improvement of market conditions.

Looking most recently, implied volatility on three-month, at-the-money SPX options reached a level that was nearly double the level of realized volatility over the past 12 months, and has since settled into a 50% premium. The table shown here lists the ten prior episodes when the ratio of 3m ATM implied to 12m realized volatility exceeded 1.5x, as well as the number of days that implied vols remained above the equity market performance over the episode. (We measure equity performance beginning a week before the day when the vol risk premium rose above 1.5x against the low print on the S&P 500 over the episode.) One observation is that these episodes are associated with an average decline in the S&P index of 12%, or if the 2007-8 crisis episodes are

Figure 3: High vol premium episodes

Start	Length	S&P Drop	Days to S&P Low
Jul '04	17	-3%	17
May '06	57	-5%	22
Feb '07	6	-6%	6
Jun '07	83	-8%	50
Oct '07	110	-16%	95
Oct '08	45	-35%	44
May '10	57	-15%	57
Aug '11	66	-17%	62
Oct '14	10	-5%	5
Dec '14	50	-5%	5
Aug '15	12	-11%	4
Avg	50	-12%	36
ex '07-8	38	-8%	25

Source: Deutsche Bank

¹ ITAU is a five-B split-rated issuer.

² See, for example, http://www.bis.org/publ/qtrpdf/r_qt1409v.htm