Dangerous Liaisons: US rates & emerging market spreads

Eduardo Levy-Yeyati
Barclays Capital
and
Universidad Torcuato Di Tella

Tomás Williams
Center for Financial Research,
Universidad Torcuato Di Tella

This article was published in VoxEU.org in January. It could be find at http://voxeu.org/index.php?q=node/4482, *and may be reproduced with appropriate attribution.*

Two things are coming to rattle the stellar post-crisis performance of emerging markets in 2010: a tightening cycle in the US (which consensus expects to be limited and to take place late in the year (The Wall Street Journal, 2009)) and, most notably, a steepening of the US Treasury yield curve driven by the combination of a growing risk appetite and the undoing of quantitative easing (QE) (Bloomberg, 2009, and IMF, 2009) –two elements of the high US rates-strong dollar scenario that we characterized in a previous *column*, which is already starting to materialize.

While most emerging markets have undergone structural changes that reduced their exposure to a global tightening (see Levy Yeyati et al. 2009b), it is only natural, with spreads in many cases close to historical lows, to expect some headwinds from the shift of the US yield curve. Here, we try to shed light on the link between US rates and emerging market spreads, and to quantify the impact of plausible future scenarios for the US yield curve over the financing costs in the emerging world.

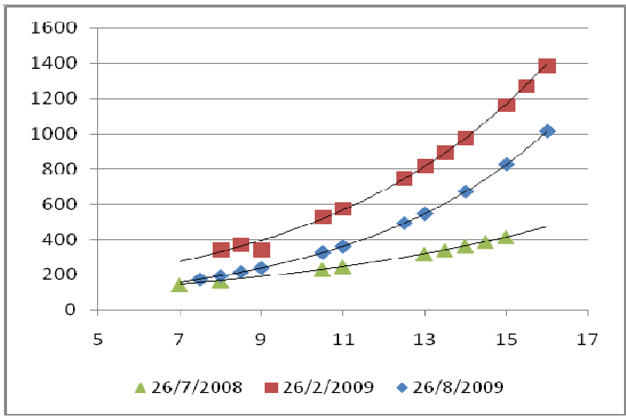
New research

In a recent piece (Levy Yeyati and Williams, 2009), we build on a simple model of sovereign spreads to disentangle the different channels through which the US rates curve may affect emerging market spreads, and to assess their economic importance.

Higher US rates may reflect very different things. Even at a simplified level, we can distinguish at least two supply-side stories and one demand-side story behind an upswing in the US yield curve. On the supply front, monetary tightening may shift up the curve and crowd out capital flows from emerging economies (a channel documented early on by Calvo et al., 1994). Related to the former but more relevant for longer durations, rates may widen due to an increase in the net supply of Treasuries to the market (e.g., if the undoing of QE and a revived borrowing from high-grade corporates start crowding out the growing financing needs of the US government).

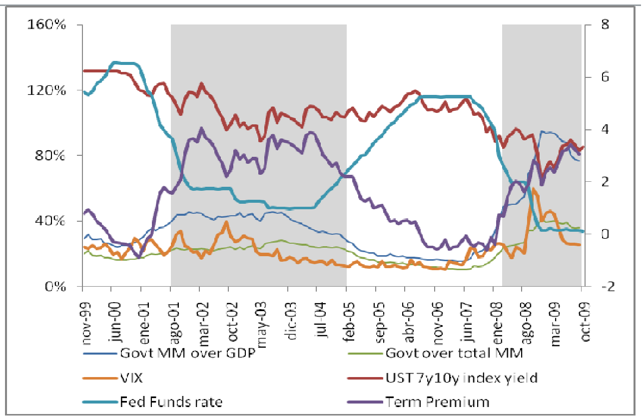
In turn, on the demand front, a decline in the preference for money or money-like instruments (and for riskless assets in general) driven by a renewed appetite for risk and duration, could steepen the

Figure 2: Spreads and ratings over the cycle



Note: The highest rating is assigned the number 1 and each notch down is associated with an additional 0.5. Source: Bloomberg, Barclays Capital

Figure 1: Which case are we in?



Source: Bloomberg, Barclays Capital

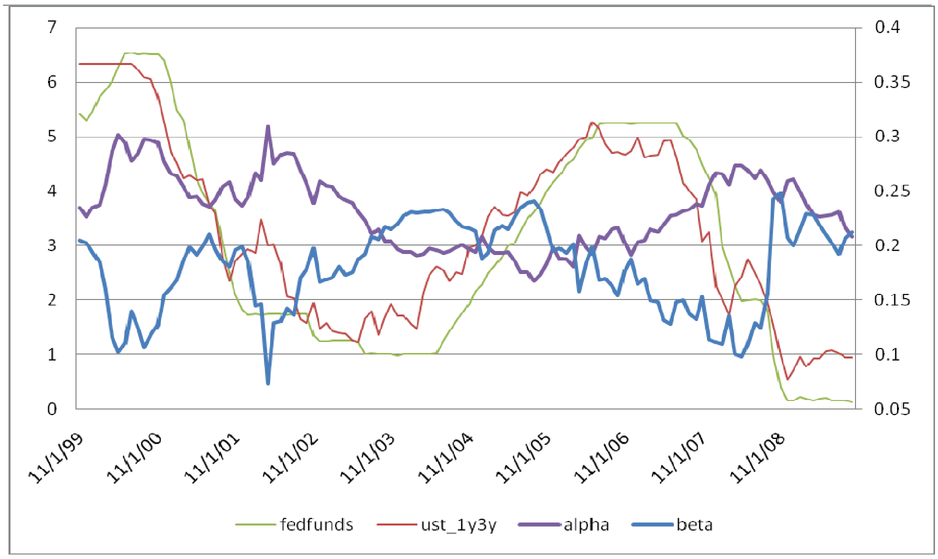
curve regardless of the pace of monetary tightening. We proxy the latter by the share of government-only money market (MM) funds over total MM funds (to capture the preference for liquidity, see Figure 2) and the VIX index to capture perceived market volatility (to capture aversion).

A first, intuitive way to represent the problem is through the exponential spread-rating link illustrated in Figure 2, which for a given time *t* could be formally expressed as:

$$\text{Ln (spread}_{it}) = \alpha_t + \beta_t \text{ rating}_{it} + \mu_{t.}$$

Regressing this cross-country equation for different periods (in our case, months), we can extract a series of estimated β_t and α_t (where an increase in the former or a decline in the latter reflect rotation and steepening of the spread-rating curve), and plot them against the Fed Funds rate and the short UST yield (**Figure 3**). The advantages of this exercise (as opposed to a comparison between US yield curve and emerging market spreads) is that it allows as to focus on the effect of US rates above and beyond the ratings up cycle that characterized the emerging world in the 2000s.

Figure 3: Emerging markets spread-rating The spread rating curve during the US rate cycle (add cases identified in Figure 2)



Note: Source: IMF, Barclays Capital

While still a crude simplification, the figure highlights two stylized facts. First, a widening of the short end of the US yield curve is associated with a steepening of the emerging markets spread-ratings curve, possibly a reflection of growing risk factors rather than monetary policy. Second, a normal tightening cycle such as the one prior to the recent crisis does not seem to exert much influence on the spread-ratings curve, possibly because, in the absence of financial distress, higher US rates are typically associated with lower risk premiums (in line with the results below).

In order to assess more rigorously the channels through which the Treasury curve influences emerging market spreads, we build on González Rozada and Levy Yeyati´s (2008) model of sovereign spreads. More precisely, to the Treasury rate (proxied here by the yield of Barcap´s 7y10y UST index, *7y10y*), the sovereign rating (*rating*) and the US high yield corporate spread (*HY*), we add a monetary policy proxy (the Fed Funds rate, *Fed*), and two risk aversion proxies: for the demand for liquidity (the government to total MM fund ratio, *MM*), and the demand for safe assets (the *VIX* index).[1] Finally, we include the international reserve-to-GDP ratio (*reserves*), which has been shown to systematically reduce spreads beyond what is captured by ratings (Levy Yeyati, 2008).

[1] VIX is the ticker symbol for the Chicago Board Options Exchange Volatility Index, a popular measure of the implied volatility of S&P 500 index options. A high value corresponds to a more volatile market and therefore more costly options, which can be used to defray risk from this volatility by selling options. Often referred to as the fear index, it represents one measure of the market's expectation of volatility over the next 30 day period.

Importantly, because we want to identify the effects associated with each of the three channels mentioned above, we proceed step by step (Table 1). The first specification tells us that US rates increase less than proportionally (i.e., the curve flattens) as a results of a Fed hike, and that they are affected differently by the preference for liquidity and risk aversion (negatively in the first case, positively in the second).

In turn, the second specification shows that corporate spreads are not significantly altered by monetary policy but respond to both "demand shock" proxies. Finally, the third specification models emerging market spreads. It shows significant direct effects from demand and Treasury supply shocks,[2] but no direct influence from the Fed Funds rate (estimating the specification in differences yields a similar picture).

Quantifying the effects

How large are these effects? To gauge the full impact of US yield curve moves, we need to work through the indirect channels estimated in the previous two columns. Based on the results in Table 1, monetary tightening, perhaps the channel often emphasized as a source of vulnerability for emerging market credits, should have virtually no effect. It is an autonomous steepening of the US that yields the economically important response.

Specifically, a 100bp Fed hike would lead to a [0.212 * 0.583] * 100bp = 12 bp widening of the spread (acting only by the indirect channel of affecting the ust7y10y). By contrast, a 100 bp steepening of the US yield curve due to a supply shock (as measured by an increase in the 7y10y Treasury yield, ceteris paribus) would lead to a 58 bps increase in spreads due to its direct impact on spreads.[3]

Summary

In sum, these findings suggests that, paradoxically, positive US economic surprises that bring forward the undoing of QE and fuel the ongoing steepening of US *rates* may translate into wider emerging markets *spreads* (i.e., a more than proportional increase in the borrowing cost of emerging economies), even if the Fed delays the monetary tightening. Ultimately, the US economic strength may play a welcome sobering role in the surge of emerging market assets.

[2] Note that the inclusion of the 7y10y rate after controlling for monetary policy and demand factors (which amounts to including the residual in the first specification) captures autonomous changes in the US rate due to supply shocks.
[3] This effect could be partially offset by a further increase in risk appetite, a plausible development in 2010. For example, assuming that our two risk appetite proxies go back halfway to their pre-crisis, end-2007 levels, emerging market spreads would decline by about 45 bps.

Table 1: Disentangling the effect of wider and steeper UST yields (panel regressions)

	7y10y	HY	EM Spreads	
				ln diff
rating			0.158***	
Fed	0.212***	0.042	0.034	
reserves			-0.262***	
MM	0.239***	0.377***	0.485***	
VIX	-0.104***	0.972***	0.205***	
7y10y		-0.105	0.583***	
HY			0.591***	
D(rating)				0.074***
D(Fed)				-0.081*
D(7y10y)				0.177**
D(reserves)				-0.138***
D(HY)				0.689***
D(MM)				-0.02
D(VIX)				0.171***
Observations	117	117	2017	1992
R-squared	0.63	0.9	0.85	0.31

Note: The sample includes Argentina, Brazil, Colombia, Dominican Republic, Ecuador, Egypt, El Salvador, Hungary, Indonesia, Mexico, Panama, Peru, Philippines, Russia, South Africa, Turkey, Ukraine, Uruguay and Venezuela. Source: Barclays Capital. *, **, *** denote significance at the 10, 5, and 1 percent levels.

References

Bloomberg (2009) "Treasury Yield Curve Steepens to Record on Debt Demand Concern", December 25, 2009.

Calvo, Guillermo A., Leiderman, Leonardo & Reinhart, Carmen M., 1994. "The Capital Inflows Problem: Concepts And Issues," Contemporary Economic Policy, Western Economic Association International, vol. 12(3), pages 54-66, 07.

Cavallo, Eduardo, Powell, Andrew and Rigobon, Roberto, "Do Credit Rating Agencies Add Value? Evidence from the Sovereign Rating Business Institutions", November 2008, Working Paper, Inter-American Development Bank, Research Department.

González Rozada, Martín and Levy Yeyati, Eduardo, 2008. "Global Factors and Emerging Market Spreads," Economic Journal, Royal Economic Society, vol. 118(533), pages 1917-1936, November.

IMF (2009), *World Economic Outlook*, October.

Levy Yeyati, Eduardo, 2008. "The Cost of Reserves," Economic Letters, 2008, vol. 100 (1), pp. 39-42

Levy Yeyati, Eduardo, Ghezzi, Piero and Broda, Christian M. (2009), "Advanced Emerging Markets - a Reassessment of an Asset Class", available http://ssrn.com/abstract=1509637

Levy Yeyati, Eduardo and Tomas Williams (2009), "US rates and emerging market spreads", Center for Financial Research, Universidad Torcuato Di Tella.

The Wall Street Journal (2009), "Economists See Fed Raising Rates Near Midterm Elections", November 13, 2009.