US monetary normalisation, bond markets and policy choices in emerging markets

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Two financial trends in EMEs over the past 5 years to note:

- Increased corporate borrowing in foreign currency
- Increased foreign holdings of EM local currency debt

Both trends have been reinforced by aggressive and unconventional monetary expansion in the advanced economies.

So: how will EMEs be affected as the normalisation of global monetary policy proceeds?
1. ONSET OF MONETARY NORMALISATION IN THE USA

- 2004-06 → Tightening led by the **policy rate** in the US
- 2013 → Tightening led by the **long-term rate** as the term premium narrowed by about 100 basis points (Graph 1)

*In basis points*

<table>
<thead>
<tr>
<th></th>
<th>Low in 2004 to high in 2006(^1)</th>
<th>2013 Q1 to 2013 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal funds rate</td>
<td>+425</td>
<td>0</td>
</tr>
<tr>
<td>2-year yield</td>
<td>+292</td>
<td>+8</td>
</tr>
<tr>
<td>10-year yields</td>
<td>+27</td>
<td>+90</td>
</tr>
<tr>
<td><strong>Inflation element</strong></td>
<td>+4</td>
<td>-5</td>
</tr>
<tr>
<td><strong>Real</strong></td>
<td>+23</td>
<td>+95</td>
</tr>
</tbody>
</table>

Averages of daily rates over the period indicated. \(^1\) Changes from the period 25 June 2003 to 29 June 2004 (when the Federal funds rate was at 1%) to the period 1 June to 31 December 2006 (Federal funds rate at 5.25%)

This pattern of tightening is unusual – even in 1994 the bond market sell-off was driven by changes in expectations about future policy rates*

* See Adrian and Fleming, 2013
Bond yields in early 2014

- Term premium still near zero
- 5-year forward expectation of 10-year yield is 4%

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1 Sum of inflation and real yield risk premia in the 10-year US Treasury yield. These are calculated using the BIS term structure model.

Sources: Bloomberg; national data; BIS calculations.
Divergent central bank balance sheets, global demand and exchange rates

Central bank balance sheets relative to Federal Reserve

2010=100

1 Balance sheets converted into US dollars at average exchange rate of 2010.

Source: Datastream; BIS calculations.
Graph 3
The relative size of central bank balance sheets and exchange rates (2010=100)

Note: data are quarterly averages over the period 2009 Q1-2013 Q4; regression line analytical form is (t-statistics in parenthesis):

\[ XR = 116.6_{(18.8)} - 0.16_{(-2.7)} \times B5 \]

1 Balance sheets of BoE, BoJ and ECB relative to FED. 2 Exchange rates are expressed as number of dollars for one unit of other currencies.
Sources: Datastream; BIS calculations.
The policy rate (Federal funds rate) near zero $\rightarrow$ positive carry remains

- Significance:
  - Defines the base for international banks’ short-term dollar funding costs
  - Drives carry trades along maturity spectrum
- Near zero since late 2008
- $\Delta$ bond market volatility $\rightarrow$ $\Delta$ carry-to-risk ratio

- SEE GRAPH 4 ON THE NEXT SLIDE

Timing and degree of next stage of monetary normalisation (that is, higher policy rates) still open
Graph 4

Dollar term spread and interest rate carry-to-risk ratio

Term spread

Carry-to-risk ratio

The vertical line corresponds to May 1st 2013 (FOMC statement changing the wording on asset purchases).

1 Ten-year swap rate minus three-month money market rate, in basis points. 2 Defined as the differential between 10-year swap rate and three-month money market rate divided by the three-month/10-year swaption implied volatility.

Sources: Bloomberg; BIS calculations.
“Fed drains punch bowl, but don’t leave party yet”

An FT article from Wells Fargo Asset Management drew attention to this:

“Investors are cautious not to leave the party too early. The Fed may be starting to empty its punch bowl just as the market is mixing a new batch.”

“Fed drains punch bowl, but don’t leave party yet”, James Paulsen, Financial Times, 18 March 2014
Timing of higher policy rates is uncertain

- Central bank forecasts of their policy rate are accurate only a **couple of quarters** ahead*

- Increases tend to be **underpredicted** in the early stages of an upturn

- Additional uncertainty about
  a) **Pace of central bank sales of long-term assets** ... larger sales imply smaller rises in the policy rate during normalisation
  b) Policy objective for bank reserves or **liquidity in the financial system****

“New normal” for interest rates, long or short, unknown but higher than current levels

* See Goodhart and Lim, 2011
** Gagnon and Sack, 2014
2. BOOM IN INTERNATIONAL BOND ISSUANCE BY EM COMPANIES

- Issuance data on a **nationality (not residence)** basis – including overseas subsidiaries such as financing vehicles
  - A wider concept than balance-of-payments, external debt and other cross-border statistics ... corresponds to the company’s consolidated balance sheet

  See table on next slide

- Increased international bond issuance has not reduced cross-border bank borrowing ... so **foreign currency exposures** have risen*

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* Turner, 2014
Net issuance of international bonds by EM companies

By nationality of issuer, $ billion

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>152</td>
<td>167</td>
<td>284</td>
<td>321</td>
<td>924</td>
</tr>
<tr>
<td>Banks</td>
<td>48</td>
<td>49</td>
<td>133</td>
<td>105</td>
<td>335</td>
</tr>
<tr>
<td>Non-banks</td>
<td>104</td>
<td>118</td>
<td>151</td>
<td>216</td>
<td>589</td>
</tr>
</tbody>
</table>

**Memorandum:**

HK and Singapore | 12  | 10  | 40  | 22  | 84


1 Including euro area member states Estonia, Slovakia and Slovenia and excluding major international banking centres.
### Net issuance of international bonds by companies in emerging Europe

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>29.0</td>
<td>16.7</td>
<td>66.7</td>
<td>48.8</td>
<td>155.1</td>
</tr>
<tr>
<td><strong>Banks</strong></td>
<td>17.8</td>
<td>6.0</td>
<td>44.6</td>
<td>19.0</td>
<td>87.4</td>
</tr>
<tr>
<td><strong>Non-banks</strong></td>
<td>11.2</td>
<td>4.6</td>
<td>22.1</td>
<td>29.8</td>
<td>67.7</td>
</tr>
</tbody>
</table>

Source: An extension of Turner (2014).

1 Including Russia, Turkey and Ukraine.
# Net issuance of international bonds by EM companies: by country

<table>
<thead>
<tr>
<th>By nationality of issuer, $ billion</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>20.7</td>
<td>6.2</td>
<td>51.0</td>
<td>27.6</td>
<td>105.5</td>
</tr>
<tr>
<td>Ukraine</td>
<td>0.9</td>
<td>1.2</td>
<td>–1.1</td>
<td>4.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Turkey</td>
<td>2.6</td>
<td>1.8</td>
<td>6.3</td>
<td>9.4</td>
<td>20.2</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>2.9</td>
<td>0.4</td>
<td>3.5</td>
<td>2.5</td>
<td>9.4</td>
</tr>
<tr>
<td>Hungary</td>
<td>–1.1</td>
<td>–0.3</td>
<td>1.6</td>
<td>0.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Poland</td>
<td>2.0</td>
<td>1.4</td>
<td>5.9</td>
<td>–0.5</td>
<td>8.8</td>
</tr>
</tbody>
</table>

Source: An extension of Turner (2014).
Shrinking international bond issuance in 2014 Q1?

<table>
<thead>
<tr>
<th></th>
<th>2010–13 $ bn</th>
<th>% change from 2013 Q1 to 2014 Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>924</td>
<td>−32</td>
</tr>
<tr>
<td><strong>Banks</strong></td>
<td>335</td>
<td>−55</td>
</tr>
<tr>
<td><strong>Non-banks</strong></td>
<td>589</td>
<td>−25</td>
</tr>
</tbody>
</table>

... but wide diversity across countries
Some questions about corporate balance sheets

- Nature and **quality of assets**?
  - Foreign or local currency assets (property developers in China?)
  - Dependence on cyclical high of commodity prices? Many believe we are past the peak in the commodity cycle

- **Corporate leverage**?
  Aggregate leverage measured by debt/income in many EMEs has increased since 2008. This means that firms are more sensitive to a simultaneous rise in interest rates and a fall in sales

- Do companies have **natural hedges** from forex exposures?

- Are exposures **concentrated** with weak companies? Do companies with low **Interest Coverage Ratios** (ICRs) account for an increased share of corporate debt?

**Good recent analysis in the IMF’s April 2014 GFSR, but better data still needed:**
**could corporate credit risks aggravate interest rate risks?**
A substitute for reduced borrowing from international banks?

- No, for the biggest issuers – Brazil, China where borrowing from international banks increased from 2003-07 to 2008-12

- Yes, for emerging Europe
Changes in banks’ consolidated foreign claims on EM private sector

In billions of US dollars

Graph 5

Asia and Latin America

<table>
<thead>
<tr>
<th>Country</th>
<th>End-2003 to end-2007</th>
<th>End-2008 to end-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Korea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>End-2003 to end-2007</th>
<th>End-2008 to end-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td></td>
<td></td>
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<tr>
<td>Hungary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: BIS consolidated banking statistics.
Implications for domestic banks in EMEs

- Companies borrow less from local banks who have to find other customers ... so **bank credit eased** for domestic borrowers
- Companies **fund banks** in local wholesale markets
  - Such deposits are more procyclical than other bank deposits ... and so key to global liquidity*
  - Issuance of overseas debt and domestic bank credit are positively correlated**
- Companies often **hedge forex or maturity exposures** with local banks

* Bond issuance boom has helped fuel strong credit growth in EMEs .... and this may well reverse in the coming year**

* See Chung et al, 2014
** See Inter-American Development Bank, 2014
3. INTEREST RATE EXPOSURES OF FOREIGN INVESTORS IN EM CURRENCIES

- Dollar value of EM local currency debt outstanding has doubled since 2008*
- The proportion held by non-residents has risen from 13% in 2008 to 27% today
  - Clear evidence that bond flows are more sensitive to global financial conditions than equity flows (IMF, 2014)
  - Three-fold increase in cross-border bond liabilities of EMEs since 2008 ($billion)***

<table>
<thead>
<tr>
<th>Dec 2008</th>
<th>Dec 2012</th>
<th>June 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>583</td>
<td>1748</td>
<td>1674</td>
</tr>
</tbody>
</table>

- IMF estimate that stock of portfolio investment from advanced economies to EM bonds is $480 billion above the extrapolated 2002-07 trend
- EM local bond yields now react more to changes in global bond markets**

* See World Bank, 2014
** See Miyajima et al, 2012
*** See IMF Coordinated Portfolio Investment Survey, March 2014
Equities versus bonds

- EM assets flat as proportion of advanced economy assets
- EM GDP has risen much faster
- Foreign demand for bonds a **yield play** but for equities represents a stake in **EME growth potential**
EME assets and GDP

As a percentage of G5 values

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td></td>
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<tr>
<td>2008</td>
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<tr>
<td>2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Foreign ownership of EME assets

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic equity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local currency government bond</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local currency corporate bond</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Selected 22 EMEs. EME financial assets = stock of international debt and domestic bonds and notes by all issuers by residence + equity market cap. FC=T14b (int'l bonds and notes by residence), LC=T16A (domestic debt by residence), eq=BBG US$ market cap G5 equity market cap and government debt.

1 Germany, France, Japan, UK, US.

Sources: BIS calculations based on Bloomberg and IMF WEO, authors’ calculations.
Yields of local EM government bonds and the exchange rates

Graph 7

Yields\(^2\)

Volatility of yields\(^3\)

The exchange rate\(^4\)

The black vertical lines correspond to 1 May 2013 (FOMC statement changing the wording on asset purchases).

1 All 3 graphs show the simple average of Brazil, India, Indonesia, Malaysia, Mexico, the Philippines, Poland, South Africa and Turkey.
2 Yields on 5-year local currency bonds.
3 180-day moving standard deviation of daily changes in yields.
4 In dollars per unit of local currency.

Sources: Bloomberg; national data; BIS calculations.
Monetary conditions in EMs tighten?

- Central banks can deal more readily with shocks to local currency debt than to foreign currency debt ... can act as Lender of Last Resort

- But calibrating the monetary policy response is complex. Monetary conditions depend on
  
  a) Short-term policy rate
  b) Exchange rate
  c) Long-term interest rate on government bonds

Policy decisions much more difficult when increased market volatility itself curbs aggregate demand
Monetary policy triangle

The monetary policy triangle

- Terms-of-trade shock etc
- Forex intervention
- External financial shock etc

LONG-TERM RATE OF INTEREST

EXCHANGE RATE

SHORT-TERM RATE OF INTEREST

The policy rate

The central bank can use the policy rate and can buy or sell foreign exchange and government bonds

- Local fiscal position etc
- Central bank purchases of local bonds
- Global savings glut etc
- Foreign monetary policy
 Monetary policy choices in emerging Europe

- With the exception of Turkey, growth of domestic bank credit to the private sector close to zero [Graph 8]

- Closer links to the euro area than Asian or Latin American countries – long-term interest rate on Bunds below that of US Treasuries

- Interest rates have not risen sharply as in some EMs [Graph 9]
Growth of domestic bank credit to the private sector

Annual percentage changes, in real terms (deflated by CPI)

Graph 8

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1 2010 GDP-PPP weighted averages. 2 Croatia, Czech Republic, Hungary, Slovakia and Poland. 3 Albania, Bosnia & Herzegovina, Bulgaria, Macedonia, Romania and Serbia.

The policy rate and long-term rates in major CEE countries

In per cent

Graph 9

Policy rate

Real policy rate (CPI-deflated)

Long-term rate

Sources: Datastream; national data.
CONCLUSION

1. Monetary policy normalisation in the advanced economies has started, led by the benchmark long-term interest rate – a market led normalisation

2. Further normalisation inevitable. When policy rates will increase is uncertain. Central banks historically not good at forecasting their own policy rate more than 2-quarters ahead

3. Three shocks to EMs
   a) EM corporate bond issuance in international markets: is this reversing?
   b) Higher long-term rates in local currency
   c) Lower exchange rates

These shocks will tend to lower domestic demand in EMs. Takes 2 to 3 quarters for this to be felt

In addition, some EMs will tighten monetary policy ... but not necessarily in emerging Europe

EMEs are likely to have a greater influence on the transmission mechanism of global monetary normalisation. This will feed back to the advanced economies .... so watch out!
References

Adrian, T and M Fleming (2013): “The recent bond market selloff in historical perspective”. Liberty Street Economics


