Emerging market inflation-linked bonds: a primer

Key points

- The emerging market inflation-linked bond has experienced significant growth over the last decade; its total capitalization now stands at more than US$500bn. Issuances are growing faster, particularly in Asia.

- For investors based in developed countries, they represent a valid investment alternative in the search for better yields and are a good way to receive higher inflation than that of their own country.

- The widespread normalization of interest rates we expect to materialize over next several years makes repeating past high performances more difficult.

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Exhibit 1
The striking growth of emerging inflation-linked bonds
Market Capitalization, in US$ bn

- Barclays EM govt inflation-linked index, emerging markets
- Barclays world govt inflation-linked index, developed markets

Source: Datastream, AXA IM Research
A growing market

The list of sovereign states issuing inflation-linked bonds (ILB) grows each year. The emerging market inflation-linked bond has experienced significant growth over the last decade. Its total capitalization now stands at more than US$500bn, i.e., roughly 30% that of developed country issuers (Exhibit 1), compared with just US$18bn at the end of 2003.

Issuances are growing faster in Asia. Hong Kong\(^1\) started an inflation-linked issuance programme in 2011, and Thailand and India have both launched their first ILB, in 2012 and this year, respectively. The Philippines will soon join the group, since its Treasury plans to issue at least US$500mn worth of inflation-indexed bonds in the domestic bond market in the fourth quarter 2013. In Latin American countries, linkers appeared in late ’60s, Brazil is by far the largest issuer, accounting for more than 50% of the capitalization of emerging markets (Exhibit 2), with a total volume of US$278bn\(^3\) through July. For sake of comparison, Brazil is the world’s third largest market after the US (roughly US$900bn) and the UK (roughly US$550bn).

The inflation versus the nominal market

The linker market is much more recent than the nominal one; indeed, the first US Treasury Inflation Protection Securities issue was only in 1997. Due to its shorter history, the ILB market does not yet have the same variety and depth as the nominal one. In United States, it represents about 10% of marketable outstanding debt, roughly the same share as in France (13%). The percentage is much higher in UK (30%). Exhibit 3 plots the steadily rising proportion of linkers relative to the nominal debt for emerging countries. In just a decade, the percentage has increased from 5% to almost 35%.\(^4\) The ratio of linkers to total nominal debt by country is quite heterogeneous; for instance, in Brazil the share of linkers is higher than 50%.

Emerging ILBs are different

Since inflation-linked securities are designed to protect the investor from the income eroding effects of inflation, it is useful to review the technicalities of the inflation indexation mechanism.

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1. These issuances were intended to address retain investors.
2. We include the countries that make up the Barclays Capital emerging market government inflation linked bond index.
3. All market capitalizations refer to the Barclays index, to ensure a homogenous data sample.
4. The share is approximated as the ratio of the Barclays EM Govt Inflation-Linked All Maturities Index market capitalizations ($) to the JPMorgan GBI Emerging Broad index.
Exhibit 4
Characteristics of main emerging IL bonds

<table>
<thead>
<tr>
<th>Bond name</th>
<th># of bonds in the BC index</th>
<th>Inflation index</th>
<th>Indexation lag</th>
<th>Deflation Floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina CER linked bonds</td>
<td>5</td>
<td>CER CPI</td>
<td>T-5, T-10 to ACERER Index up to 4 weeks, includes forecasts</td>
<td>No</td>
</tr>
<tr>
<td>Brazil NTN-B</td>
<td>13</td>
<td>IPCA</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Chile BTU &amp; BCU</td>
<td>18</td>
<td>UF CPI</td>
<td>1 month</td>
<td>No</td>
</tr>
<tr>
<td>Colombia TES B</td>
<td>3</td>
<td>UVR CPI</td>
<td>1 month</td>
<td>No</td>
</tr>
<tr>
<td>Israel Gaili &amp; ILCPi</td>
<td>10</td>
<td>Israeli CPI</td>
<td>up to 1.5 month, adjusted on inflation release</td>
<td>No</td>
</tr>
<tr>
<td>South Africa SAGB I/L</td>
<td>9</td>
<td>SA CPI</td>
<td>4 months</td>
<td>Yes</td>
</tr>
<tr>
<td>South Korea KTBi</td>
<td>3</td>
<td>Korean headline CPI</td>
<td>3 months</td>
<td>No</td>
</tr>
<tr>
<td>Mexico Udibonos</td>
<td>9</td>
<td>Unidad de Inversion</td>
<td>up to 2 weeks</td>
<td>No</td>
</tr>
<tr>
<td>Poland CPI Linked bond</td>
<td>2</td>
<td>Polish CPI</td>
<td>3 months</td>
<td>Yes</td>
</tr>
<tr>
<td>Thailand ILB</td>
<td>2</td>
<td>Thailand headline CPI</td>
<td>3 months</td>
<td>Yes</td>
</tr>
<tr>
<td>Turkey CPI linked bond</td>
<td>9</td>
<td>Turkish headline</td>
<td>3 months</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* Countries included in the Emerging BC index
Source: Barclays Capital, EM debt agencies & AXA IM Research

Exhibit 4 shows the key features of a selected emerging universe (that of the Barclays index), such as the inflation benchmark index and the time lag of the inflation indexation mechanism. This last detail is particularly important, since all the cash flows of an indexed bond are paid based on an indexation coefficient that follows a predefined methodology to take account of accrued inflation. The rules are necessary because for the pricing of the bond the index ratio has to be calculated daily, whereas official inflation indices are calculated only monthly and released with a time lag. The standard practice in developed markets is the so-called “Canadian style”, according to which the inflation indexation lag is three months. In some emerging countries the applied model is different: for Latin American linkers, for example, the indexation lags tend to be shorter. Typically, this means that once the consumer price index of reference is published, it is almost “instantaneously” integrated into the indexation calculations, including inflation forecasts of the index, as is the case for Brazil. The reason for this different methodology lies in the experience of very high inflation in these countries.

Finally, we observe that emerging inflation-linked bonds differ in the procedure for addressing deflation. In almost all developed countries, there is a ‘deflation floor’ mechanism protecting capital from deflation. Such a built-in option does not exist for all emerging markets, namely those in Latin America, which means that the investment remains exposed to a prolonged deflationary environment.

What’s about a derivative market for emerging ILB?

One of the reasons why derivatives are sometimes preferred over cash markets is that they are less capital consuming and they can offer more tailored hedging solutions.

The first and most widely used derivatives are the zero coupon inflation swaps. They are considered the standard building block and a pure tool to trade inflation. The cash flow structure is relatively simple: in an inflation swap one party pays (receives) a fixed rate (i.e., the expected inflation over the maturity of the swap), agreed at inception, and the other party pays (receives) a floating rate linked to an inflation index (i.e., actual inflation). Most recently, the market for inflation options has been catching up.

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5 Exceptions are for Australian bonds and UK Index-linked Gilt issued before 2005.

6 Except in the UK and Japan.
In the developed world, as the underlying market became more established, the inflation derivative market evolved in parallel.

As for the emerging market world, the derivatives consist mainly of inflation swaps. However, it exhibits limited liquidity so far and is mostly concentrated on short tenors. In most countries, swaps are negotiated OTC rather than through the interbank market, which constitutes the main obstacle to enhanced liquidity.

**Why issue linkers?**

For governments, the main argument in favour of borrowing through ILB is that this reduces the financing cost by decreasing the risk premium paid on debt. Since ILB are less liquid than nominal bonds, this argument remains valid as long as the liquidity premium remains lower than the inflation risk premium contained in traditional bonds.

At the same time, issuing inflation-linked debt can help to enhance the credibility of a country that wants to pursue price stability. If markets interpret the issuance of ILB as a strong “anti-inflation” commitment, this could enable the country to refinance its overall debt at a lower borrowing cost thanks to a lower inflation risk premium.

As the anecdotal evidence shows, a government will generally issue inflation-linked debt provided that there is sufficient demand from local investors with inflation-linked liability constraints. These investors may prefer inflation-linked to nominal government bonds for liability matching, so for the country issuing ILB are an opportunity to raise the universe of potential buyers.

Ultimately, they provide a method of diversifying the state’s debt portfolio.

**Why buy linkers?**

These bonds are primarily intended for all investors who wish to preserve the purchasing power of their portfolios and thus are linked to domestic consumer price index trends. Unlike traditional bonds, emerging inflation-linked debt is issued in local currency.

For certain institutional investors, notably pension funds, the role of ILB is particularly interesting for matching pension liabilities; theoretically, a portfolio invested 100% in inflation-linked bonds is optimal for matching liabilities indexed with respect to inflation.

Consequently, markets have naturally developed more extensively where there is a potentially high structural local demand precisely where the weight of institutional investors such as pension funds has been high. According to a recent OECD study, in 2011 pension fund assets as a % of GDP stood at 10-20% in Latin American countries. Amongst emerging issuers, South Africa is also a country where pension funds have the highest share of global assets expressed as a % of GDP (64%\(^1\)) In all these regions, local institutions and pension funds are mainly invested in fixed-income assets and remain the main buyers of inflation-linked bonds.

Direct access to a large domestic market is also a prerequisite for increasing market liquidity, which also attracts the international investor base.

Researchers have also promoted the diversification power of ILB vis-à-vis equities and nominal bonds. Even though this diversification has declined somewhat in recent years for developed markets, it remains a strong argument in the emerging world.

Finally, the literature shows that the optimal way to introduce inflation-linked bonds in a global portfolio depends on a series of factors, such as their investment horizon, their target return and the economic environment.

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7 Papers such as Reschreiter (2004) cite the UK as an example of lower refinancing cost, while a counter-example of at least initially higher net cost is documented by Sack and Elsasser (2004) in the case of the US.

8 In the UK, the Debt Management Office also highlighted the fiscal stabilizer properties of index-linked bonds.

9 In 2007, Uruguay issued an ILB in euro, but the market did not expand.

10 http://www.oecd.org/daf/fin/private-pensions/PensionMarketsInFocus2012.pdf

11 Towers Watson study.

What are the extra benefits of buying emerging linkers?

Although most of the buyers are domestic investors, emerging market debt offers appealing advantages for investors based in developed countries. The current period of low interest rates makes it more difficult to find bonds with yields high enough to achieve a fixed target return. Accordingly, moving towards emerging markets can represent a valid investment alternative in the search for higher yields.

As a reminder, the two components of the total return (real yield and actual inflation) are considerably higher in emerging countries than in developed ones. The following graphs illustrate the average gap between the two universes, assuming an appropriate investable basket of countries, i.e., those belonging to the Barclays indices.

Exhibit 5 plots the evolution of the aggregate (real) yield for the developed regions versus the aggregate (real) yield for emerging countries. The emerging yield stayed on average 4% higher than the developed one and, more importantly, it would have made it possible to avoid the negative real yields paid across developed markets since 2011.

Exhibit 6 plots the evolution of the aggregate inflation rate for two baskets of countries (developed and emerging). We have computed the two aggregates weighing each national inflation rate for the country weight in the index, in order to better approximate the inflation received by the investor. On average, our metric for the emerging aggregate stayed 3% higher than its developed peer. Given that euro area inflation differs only marginally from the developed aggregate, for a European investor emerging linkers offer a way to receive higher inflation than that of their own country. 13

Provided that the investor is aware of the higher risk assumed (lower country rating), over their short history emerging ILB have offered a better reward/risk ratio than developed market peers (2.8 vs. 1.1; see Exhibit 7).

Undoubtedly, the economic environment over the last decade has been particularly favourable to emerging markets and low interest rates have shifted performances upward. So looking ahead, the widespread normalization of interest rates that we expect over next several years makes it more difficult to repeat such high past performances.

Exhibit 7

<table>
<thead>
<tr>
<th>Main statistics of Barclays Capital Global inflation Bond indices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2004-2013</strong></td>
</tr>
<tr>
<td>Return (loc.currency)</td>
</tr>
<tr>
<td>Volatility</td>
</tr>
<tr>
<td>Reward/risk ratio</td>
</tr>
<tr>
<td>Life</td>
</tr>
<tr>
<td>Mod Dur.</td>
</tr>
<tr>
<td>Number of countries</td>
</tr>
<tr>
<td>Number of bonds</td>
</tr>
</tbody>
</table>

* Barclays World Govt Inflation-linked all maturities
** Barclays Em Govt Inflation-linked all maturities index

Source: Barclays Capital and AXA IM Research

13 The currency risk component can be hedged.
Our research on the internet

All our research is available on our website: http://www.axa-im.com/en/research

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