



Slaney Advisors Limited

Discussion Paper:

Growth-linked Bonds: EMTA* Institutional Investor Questionnaire

Overview of Responses and Analysis

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From time to time, proposals outlining the benefits of linking sovereign debt service to economic growth are proffered.¹ Advocates of growth-linked (GDP-linked) bonds argue that they offer reassurances to both borrowers and lenders as these instruments alleviate payment obligations – and associated debt distress and default – when economies are contracting, and reward investors with higher returns during periods of economic growth.² But while a theoretical case has been presented that many types of sovereigns (and some investors) could benefit from these types of instruments,³ no sovereign has actually issued a GDP-linked bond and therefore no market for these instruments has developed. Why is this the case?

This paper explores current investors' perceptions of GDP-linked bonds as gathered from informal interviews with EMTA members and the EMTA Institutional Investor Questionnaire on Growth-linked Bonds (the EMTA Survey).⁴ These views range from dislike or indifference to varying levels of interest in these instruments. Opponents of GDP-linked bonds cite both practical and more principled reasons for objecting to their broader market acceptance, and point to the fact that no market has yet developed as evidence of their lack of viability. For investors that have already formed a favorable view of these instruments, the most important condition they identify for broader market acceptance is not the potential challenge of their complexity, but the presence of a rational system of safeguards that would assure that the economic data to which the instrument is linked is credible.

As with other innovations in the sovereign financing area, it is issuer needs and perceptions that will ultimately lead the process. Nevertheless, it is useful for policymakers and potential issuers to understand investor perspectives as they consider these and other proposals for sovereign debt management.

* EMTA is the Trade Association for the Emerging Markets (www.emta.org).

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¹ See, Lenos Trigeorgis, *Eurozone bailout policies in crisis: A novel win-win approach is needed*, March 14, 2013 (<http://blog.stockwatch.com.cy/?p=1607>); and Zsolt Darvas, *The Greek Debt Trap: An Escape Plan*, November 2012 (<http://www.bruegel.org/publications/publication-detail/publication/759-the-greek-debt-trap-an-escape-plan/#.URzJvI41fw>).

² See, for example, Stephany Griffith-Jones and Krishna Sharma, *GDP-Indexed Bonds: Making It Happen*, April 2006 (http://www.un.org/esa/desa/papers/2006/wp21_2006.pdf), (Griffith-Jones and Sharma).

³ *Id.*

⁴ The EMTA Survey is available here: https://www.surveymonkey.com/s.aspx?sm=VtpfDsKYM9tmTFQHXP36Q_3d_3d. The Survey was sent to EMTA buy-side members in October 2012. Informal interviews with EMTA members took place throughout the process of developing the survey in 2012.

Background

Over the two past decades, investors have shown some willingness to accept and an ability to adapt to new instruments in the Emerging Markets (EM) financing area. Innovations in sovereign financing have occurred in both the international bond markets, primarily in the context of debt restructurings, and in local currency markets, for example, with the growth of the market for inflation-linked bonds (ILBs).

Restructuring 'Kickers'. Restructuring 'kickers' are instruments such as value recovery rights (VRRs), linked to future oil revenues, or GDP-linked warrants, correlated with future economic growth, which allow participants in a debt restructuring to share in a sovereign's potential future revenue. Since the Brady restructurings in the late 1980s, countries faced with the need to achieve the largest possible debt write-down (hair-cut) and attract the highest threshold of investor participation in debt exchanges in order to make them viable, have sought to entice creditors by offering a variety of these 'kickers', alongside normal restructured bonds.⁵ They were seen to enhance the 'trade' at a time when the sovereign was financially constrained, and were important to 'kick' the restructuring over the line, even if investors were unsure of their value at the time they were issued. Over the years investors have grown more accustomed to pricing, trading and settling these instruments, and they continue to play a role in the restructuring process.

Inflation-linked Bonds. ILBs are local currency bonds that link principal and/or coupon payments to an inflation index. While many developed economies, including the US, issue ILBs in order to cheapen their cost of funding,⁶ in the EM context, ILBs might also be described as a product of necessity. Some countries with a history of weak currencies and persistent high inflation could only attract investors to their local currency markets if they provided inflation protection.⁷ High inflation in certain EMs continues to broaden the number of issuers in this market.⁸ Although the ILB structure is more complex than that of a nominal bond, and investors must rely on issuer-produced data to determine payments, ILBs are finding wider market acceptance, including amongst international investors, although the market continues to be dominated by local institutions.⁹

Focus on GDP-linked bonds

GDP-linked bonds are sovereign bonds with principal and/or coupon payments that increase or decrease based upon a country's growth. Although sovereigns at all levels of economic development continue to find themselves in debt distress, and despite the fact that

⁵ Historical precedents for these instruments, which have traditionally been issued as detachable warrants, include the VRRs based upon oil revenue issued by Mexico (1989), Venezuela (1990), and Nigeria (1991); VRRs based upon a terms-of-trade index issued by Uruguay (1991); and GDP-linked instruments in the cases of Costa Rica (1989), Croatia (1989), Bulgaria (1994), Bosnia and Herzegovina (1997), Argentina (2005) and most recently Greece (2012).

⁶ All of the G7 governments have issued ILBs. *An Investor's Guide to Inflation-linked Bonds*, Standard Life Investments, 2012, at 3.

⁷ Brazil's first issuance of ILBs dates back to 1964, and Brazil is currently the largest EM issuer of ILBs with over \$130 billion market value. *An Investor's Guide to Inflation-linked Bonds*, Standard Life Investments, 2012, at 10.

⁸ EM issuers of ILBs include, amongst others, Brazil, Chile, Mexico, Poland, Turkey, Thailand, South Africa and India. EM ILBs had a total market capitalization of about \$400 billion in 2011, as compared total market capitalization of the nominal local currency bond market of \$1,400 billion. That year and prior to issuances of ILBs by Thailand and India, it was estimated that the market could grow by 50% in the next two to three years. Stefan Wagstyl, *EM Havens in Inflation-linked Bonds*, The Financial Times, March 16, 2011.

⁹ Local institutions are the primary investors in ILBs holding about 80% of the market. See, Wagstyl. ILBs would appear to offer benefits to issuers and investors similar to those identified by advocates of GDP-linked bonds. For example, from the issuer's perspective, ILBs contribute to reducing government risk by expanding the investor base, dampening fluctuations in debt ratios, and reducing budget risk to the extent that inflation tends to be lower during an economic downturn, which in turn corresponds to lower payments on inflation-linked bonds, and higher during times of growth when payment capacity is restored. See, *Costs and Benefits of Issuing Inflation-Linked Bonds*, Danish Government Borrowing and Debt, 2012. From the investor's perspective, ILBs provide diversification and the ability to hedge real liabilities.

policymakers and academics have been outlining the potential advantages of growth-linked bonds for sovereigns, investors (and the global economy more broadly), in recent years,¹⁰ no sovereign has yet ventured to issue a GDP-linked bond. Moreover, as there is no one accepted design of a GDP-linked instrument, and the warrants issued in past restructurings have all had different payment formulas and an uncertain legal structure, it is difficult to predict what a stand-alone GDP-linked bond would look like and how investors would respond to it.¹¹

In order to add the private sector's voice to the debate about GDP-linked bonds, EMTA has been informally gauging investor interest in these instruments over the past several years, and held its first roundtable to discuss them in 2006. The consensus view at the time was that a targeted application of GDP-linked instruments – for example mainly as a restructuring 'kicker' – was likely the most promising.¹²

Informal discussions with market participants in 2010 suggested some evolution in the thinking about these instruments amongst investors who could see the benefit of a broader use of GDP-linked instruments as bonds in their own right, particularly by EMs with future growth potential.¹³

However, other investors have been opposed to a broader use of these instruments from the start. They consider the primary objective of an EM sovereign Eurobond issuance to be to establish a benchmark yield, which in turn facilitates development of that country's capital markets more broadly. More complicated debt products like GDP-linked bonds are more difficult to price and distort this benchmarking function. Lack of confidence in GDP data published by sovereigns has also been cited as a major reason for opposing a broader use of growth-linked instruments.¹⁴

In order to assess EM investor's current views of these instruments in light of their increasing familiarity with GDP-linked warrants and wider acceptance of instruments such as EM-issued ILBs, we put together the EMTA Survey.¹⁵ This overview of a sampling of views from hedge funds, mutual funds, pension funds, and other buy-side firms (e.g., corporates and family offices) provides initial feedback that may serve to further understanding of investor's opinions about these instruments.

The EMTA Investor Survey on Growth-Linked Instruments

The EMTA Survey was based upon a similar survey prepared by the IMF some years ago and modified with input from several EMTA firms including Citibank, Exotix, Spinnaker Capital and Scotia Capital.¹⁶ It was sent to one contact at each of EMTA's buy-side firms.¹⁷

¹⁰ See, generally, Griffith-Jones and Sharma.

¹¹ See, Discussion Paper No. 04-64, *GDP-linked Bonds as a Financing Tool for Developing Countries and Emerging Markets*, Michael Shröder, Freidrich Heinemann, Susanne Kruse, Matthias Meitner, Centre for European Economic Research, September 2004, ('Shröder *et al.*'), where the authors provide a series of GDP-linked bond price simulations using different models of GDP linkages.

¹² See, EMTA Memorandum, *EM Investors Examine GDP-linked Securities and Find Targeted Application Most Promising*, (9/12/06). (Available on request.)

¹³ See, EMTA Memoranda, *GDP-Linked Securities – Continuing the Dialogue with the Market* (8/3/2010) and *GDP-linked Bonds (Performance Bonds): Initial Market Participant Feedback* (10/14/2010). (Available on request.)

¹⁴ To quote one investor very opposed to GDP-linked bonds: 'The whole idea of conditioning bond payments on GOVERNMENT determined data makes me shiver with horror.' And unfortunately, there is some justification for this point of view. The IMF recently issued a 'Declaration of Censure' against Argentina for manipulation of its growth and inflation numbers. *Argentine data manipulation cannot hide problems*, Oxford Analytica, February 6, 2013 (<https://www.oxan.com/display.aspx?ItemID=DB181293>).

¹⁵ A copy of the EMTA Survey is available on request.

¹⁶ We are grateful for the assistance of all EMTA members who helped prepare and participate in the EMTA Survey. A special mention goes to Joe Kogan of Scotia Capital who kindly shared his time and expertise in helping prepare the Survey.

We also conducted informal interviews with investors who chose not to participate in the EMTA Survey.

Survey Structure. In the EMTA Survey, investors were asked to consider a sovereign that can issue a 10-year conventional bond with a 7% fixed interest rate. Instead of a conventional bond, this sovereign decides to issue a 10-year GDP-linked bond with an annual coupon that fluctuates: it pays above 7% when a specified reference growth rate is exceeded, and symmetrically decreases when growth falls short of the reference rate, which we set at 3% for purposes of the EMTA Survey. Therefore:

- The GDP-linked bond pays a coupon of 7% plus the difference between real GDP growth during that year and 3%. Coupon payments cannot be negative.
- $7\% + (\text{real GDP} - 3\%)$, with minimum of zero.

In a year when GDP growth was 5% (e.g. +2) the coupon would be 9%. In a year where growth was -2%, the coupon would pay 2%. Any fall in GDP of -4% or lower would result in a coupon yielding 0.

Survey respondents were asked a number of threshold questions about the viability of this instrument, and a series of questions about issues that might affect their willingness or ability to invest in the bond, including institutional/regulatory issues; pricing; hedging; developing the market; potential issuers; and, structuring the bond.

Response Rate. The response rate to the EMTA Survey was less than 30%. This may reflect a lack of interest in responding to on-line surveys generally, or specific lack of interest in this topic. However, based upon informal interviews, it is clear that some of the investors who did not respond have been opposed to the idea of growth-linked bonds in the past for the reasons discussed above, and remain opposed to them. Others who did not respond included investors who have indicated that they have had negative experiences with GDP-linked warrants issued in past restructurings and are not inclined to view them positively as a result. In other words, reasons for not participating in the EMTA Survey appear to have been a combination of indifference about, and more specifically, opposition to the idea of GDP-linked bonds.

EMTA members that did complete the EMTA Survey were generally more positive about the idea of GDP-linked bonds, implying it was those who had already formed this positive opinion that chose to participate. This was particularly the case for the hedge fund respondents, but other buy-side firms (mutual funds and 'other buy-side') as well. The majority of these survey participants responded that they could see the hypothetical GDP-linked bond as a possible investment suggesting it was a viable instrument. One hedge fund did not think that the hypothetical GDP-linked bond in our scenario offered enough realistic upside to make it more attractive compared to a fixed coupon bond, and two other buy-side firms cited the current negative economic outlook as reasons for not seeing the hypothetical GDP-linked bond as a possible investment at this time. The pension fund respondent indicated that the investment would be out of guidelines. These results could help to define how a potential audience of investors in GDP-linked bonds would look, with hedge funds the predominant investors, joined by some mutual funds and others.

¹⁷ A list of EMTA's buy-side firms is available at <http://www.emta.org/template.aspx?id=65#buyside>.

Overview of EMTA Survey Responses

This overview will focus on the responses of those investors who indicated that they would consider the hypothetical GDP-linked bond as a possible investment.

Complexity and Riskiness. Although a long-standing criticism of growth-linked bonds is that they would be overly complex and too difficult to price, this was not borne out by the EMTA Survey results. Only one mutual fund respondent thought that this might be the case, and the majority viewed the GDP-linked bond as a tradable, rather than a buy-and-hold, instrument. All hedge fund respondents also indicated that they had in-house research capacity to provide economic analysis and pricing models to support the trading/investing in these instruments, and several provided hedging strategies. Therefore, the potential challenge of the complexity of the instrument was not a major concern.

However, despite the fact that an apparent benefit of growth-linked bonds is that their use would decrease default risk by alleviating payment pressures in times of slow growth, nearly all respondents viewed the GDP-linked bond as more *'risky'* than a conventional bond. It may be that this perception of the risky nature of the GDP-linked bond was associated with the risks surrounding issues such as data integrity, legal provisions and other practical issues, which respondents highlighted, as opposed to default risk. Indeed most acknowledged that the GDP-linked bond's diminished risk of default was a positive factor. Nevertheless, this basket of practical risks confirms that investors would demand a higher risk premium for the GDP-linked bond than for the conventional bond.

Pricing Issues. Determining the extent of the risk premium investors would demand from an issuer of a GDP-linked bond is key to determining the practicality of issuing such a bond from the sovereign's perspective. In the questions related to pricing, we tried to get closer to understanding the magnitude of the risk premium, and determine if there were ways to reduce it, by asking investors to analyze factors that would or would not be relevant in terms of pricing the GDP-linked bond in relation to the conventional bond. The idea was that 'positive' price factors would incline the investor to price the GDP-linked bond some basis points tighter than the conventional bond, and 'negative' price factors would lead to a widening of the spread as compared to the conventional bond of the same issuer. The next question was whether any actions could be taken to remedy some of the negative pricing factors.

Respondents agreed that two positive pricing factors were either *'very'* or *'somewhat'* relevant:

- default and associated 'haircuts' less likely because debt service automatically decreases during times of economic stress; and
- more upside potential than a nominal bond with positive growth surprises.¹⁸

Other potential positive pricing factors that were considered by the respondents, but did not achieve consensus in ranking in terms of being *'very'* or *'somewhat relevant'* included: (a) could help outperform the index or benchmark; (b) allows for equity-like exposure to sovereigns that is less volatile than actual equity exposure; (c) provides opportunity for diversification between issuers with uncorrelated growth rates.

¹⁸ The EMTA Survey did not address issues of caps on GDP growth that might be included in a GDP-linked bond contract to limit excessive upside, although this issue has been discussed in previous EMTA memoranda on this topic. See, EMTA Memorandum 10/14/2010.

In terms of *negative* pricing factors, all respondents agreed that the problem of *'data integrity (where GDP growth figures are published only by the sovereign)'* was a *'very relevant'* negative pricing factor. All but one respondent also highlighted *'uncertain legal structure'* of a GDP-linked bond as a *'very relevant'* factor.

Other potential negative pricing factors in the EMTA Survey that respondents considered, but which did not achieve consensus in their relevance rankings included: (a) complexity of valuation of the instrument; (b) concerns about liquidity; (c) potential back-office hassles in processing payments and lack of index eligibility; (d) not index eligible; (e) coupon may decrease in the event of a global economic crisis, increasing losses at a time when EM is probably already selling off.

Hedging. Firms took different positions as to hedging, with several suggesting that they would hedge, although the hedge would take a form different from a straight credit hedge. For example, hedging suggestions included looking at proxy hedges in commodities or other indices correlated to a country's GDP, or taking domestic rates.

Developing the Market. The suggestions provided in the 'Developing the Market' section of the EMTA Survey provided insight into what actions could be taken to increase interest in GDP-linked bonds, and at the same time potentially reduce the risk premium by addressing those issues that had been marked as negative pricing factors. For example, all respondents cited the problem of data integrity as a negative pricing factor. On the other hand, all respondents agreed that their interest in a GDP-linked bond would increase (either *'slightly'* or *'significantly'*) if *'a well-respected consortium guarantees that the GDP data provided by the issuers of GDP-linked bonds is reliable and will be monitored'*. In other words, a system to monitor or certify GDP data would make the market more appealing and likely reduce the risk premium on a GDP-linked bond.¹⁹

The majority also cited *'uncertain legal structure'* as a negative pricing factor. This could be at least partially remedied by the publication of *'a model contract with standard legal provisions being drafted by market participants'*, which was also cited as a factor that would increase interest more generally in the instrument.

The majority also thought that their interest would increase *'slightly'* or *'significantly'* if several EM sovereigns issued GDP-linked bonds at the same time. Most likely interest would also increase if the issue were of sufficient size to alleviate concerns about liquidity.

Otherwise, there were mixed responses from investors to other suggestions for developing the market.²⁰ Interestingly, there was little support for the use of an intermediary (e.g. Regional Development Bank or Special Purpose Vehicle) that would purchase GDP-linked bonds in the first instance and securitize them for the broader market, as has been recommended by certain GDP-linked bond advocates.²¹ This is consistent with the view that GDP-linked bonds are not in and of themselves overly complex instruments.

Potential Issuers. All respondents agreed that *'Emerging economies with high identified future growth potential (e.g. Kenya, Ghana, Uganda)'* would be an attractive issuer of GDP-linked bonds, *'on the basis that they would wish to seek upfront capital with a low fixed*

¹⁹ It has been suggested that as a low cost alternative to monitoring GDP data, issuers could subscribe to the IMF's Special Data Dissemination Standard (SDDS). See, Shröder *et al.* We did not ask about this alternative in the EMTA Survey.

²⁰ These included: (a) other investors in your category are likely to purchase these bonds; (b) GDP-linked bonds cover at least 50% of the country's debt; (c) the GDP-bond has explicit cross-default provisions with issuer's outstanding conventional bonds; (d) The GDP-bond does not share explicit cross-default provisions with issuers' outstanding conventional bonds; and (e) issuer only issued GDP-linked bonds.

²¹ See Griffith-Jones and Sharma, at 14.

coupon to fund capital expenditure'. Many also saw advantages for both low income and developed economies.

An important question that the Survey did not attempt to answer is how 'low' the fixed coupon of a GDP-linked bond in this scenario could be and still be acceptable to investors. The survey example used the base 7% coupon (the same that the sovereign could issue with a conventional bond), with fluctuations above or below that based upon GDP growth rates. If the EM sovereign can already issue at 7% and need not share future growth revenue with investors then it is hard to see why a GDP-linked bond would be appealing to the sovereign, particularly assuming the costs of structuring such an instrument would be higher than the costs of issuing a conventional bond. However, if that sovereign could issue a lower rate bond in the short term that ratchets up over time with growth associated with mineral extraction and associated development, for example, that might make sense. In the past we have only seen this 'sharing of future revenue' as a 'kicker' in a restructuring.

Structuring the Bonds. Interestingly, nearly all respondents did not want to see the use of GDP-linked instruments limited to just 'kickers' in restructurings. Reasons ranged from the fact that some institutional investors were restricted from purchasing warrants, to the small market capitalization of warrants, to the fact that only issuing warrants linked to GDP would not provide the theoretical benefit of the GDP-linked instrument because a larger amount of debt would need to be linked.

Nearly all agreed that GDP was the best performance indicator since it could be measured across countries, however, several pointed out that fiscal capacity to pay was often linked to commodity prices rather than GDP.²²

Conclusions

Despite potential advantages of potentially linking sovereign debt to economic growth identified by proponents of these instruments, a market for GDP-linked bonds is unlikely to develop organically. At present, the uncertainties and costs to a sovereign of being the first to issue a GDP-linked bond would be too great to justify any benefits. Moreover, there is little incentive for sovereigns to venture into new financing instruments when the current low interest environment is making most forms of traditional financing relatively cheap and accessible.

Nevertheless, a majority of respondents to the EMTA Survey expressed a willingness to invest in such instruments given the appropriate conditions. These investors agreed that their interest in a GDP-linked bond would increase if a GDP-linked bond model contract that provided legal certainty were available. They also insisted on checks and monitoring of GDP data. These are both issues that could be addressed by the private and official sectors that would lessen the cost of a GDP bond if/when one were issued. While it is the needs of the issuer that will ultimately determine whether a GDP-linked bond is issued, it is likely that having in place basic infrastructure to support the market would improve investor reception of these instruments.

For comments or questions on this paper, please contact Starla Griffin at starla.griffin@slaneyadvisors.com.

²² It is useful to consider how the theoretical benefits of the GDP-linked bond, which is intended to alleviate payment pressure in times of crisis, might be achieved by means of other instruments. For example, one respondent commented that in the past countries issued floating rate debt and that this could also alleviate the payment burden at times of stress as well as protecting the investors from inflation. This investor also recommended ILBs, as discussed in footnote 9, above.