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Foreign-currency bonds: currency choice and the role of uncovered and covered interest parity

Maurizio Michael Habib & Mark Joy

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Abstract

Using co cy choice in the issua stigate whether borrowing-cost st parity. Our findi from uncover ered interest parity. Fu ity is stronger e issuance of foreig nding of world cu through its influenc alization of currencies than has been previously accounted for.

Notes

[1] Foreign-currency bonds, throughout this article, are defined as hose bonds issued in a currency other than the currency of the country in which the borrower resides.

[2] Money market instruments and debt securities with a maturity of less than 1 year, are not included in the sample.

[3] For comparison purposes, an analysis of value of issuance is also undertaken, as described in Section VI

[4] See, for instance, Myers (2001).

[5] Descriptions, presented in this article, of the mechanics of standard bond-issuance procedures are informed by the relevant literature and by market participants, including brokers, underwriters and representatives of a number of major bond issuers.

[6] The assumption of independence of irrelevant alternatives implies that the relative probability of each option is independent and so does not change if other options are added o nd the euro as a cur on of indepen US dollar will not ce it may well cha

[7] See als eviews of this liter

[8] See

[9] Rather ng into account

[10] For in igh inflation are affec ountries with low infla

[11] It should be noted that the market for foreign-currency bonds is dominated by issuers residing in developed economies and off-shore financial centres, whereas emerging-market issuers account for a small fraction of this market (see ECB, 2008). Therefore, the 'original sin' argument is extremely important from the point of view of emerging economies, but less relevant for the purpose of this article which attempts to explain the currency choice in the foreign currency bond market at a global level.

[12] Usually, the tax advantages are linked to the 'location' of debt issuance and not necessarily to the currency in which bonds are issued. For instance, Kim and Stulz (1988) note that US dollar-denominated bonds issued off-shore by US corporations were usually bearer bonds and not subject to withholding taxes. This made them more attractive to foreign investors compared with domestic US dollar bonds.

[13] See Sarno and Taylor (2002, Chapter 2), for a survey.

[14] In the survey, this is the fourth factor in order of importance after the 'natural hedge' motive (85% of firms), keeping the 'source of funds' close to the 'use of funds' (63%) and favourable tax treatment relative to the US (52%).

[15] It is important to remark that, according to the definition used by Cohen (2005), 'international' debt securities include not only foreign-currency debt securities, but also home-cu ed in the domesti

[16] In par y sovereign governm ws and no 'natural

[17] There izon, but less evi not seem to supp profitable arbitrag (1993) notes that dev than those from sho lor (1996) remark t e and disappea note that 'unexplo short lived'

deviations from parity, net of transaction costs. However, measurement errors could, for instance, account for these outliers.

[18] See, for instance, Fisher et al. (1989) and Graham and Harvey (2001).

[19] See also McBrady and Schill (2007) and Allayanis and Weston (2001).

[20] Alternatively, it is possible to reduce borrowing costs by issuing in foreign currencies for which interest rates are relatively higher, but that ex post depreciate so much as to offset the extra cost associated with higher interest rates.

[21] Since these descriptions were first presented, in the 1990s, the swaps market has, to some extent, moved on, and covering for exchange-rate risk is no longer undertaken in precisely the same manner. Cover for an individual issue can now be acquired via a single, bespoke swap rather than a combination of standardized swaps in the manner suggested by Popper (1993). However, present-day methods of covering exchange-rate risk in the swaps market, and the pricing of this cover, are derived precisely from the underlying logic outlined by Popper (1993), and this logic is employed in this article with no known loss of accuracy.

[22] See Cameron and Trivedi (1998) for a full discussion of count-data models.

[23] Claes ebt using a utility-m position refers to

[24] The E perty that the cum with this distribut to link the random

[25] Se tive binomial

[26] Choic ount for the natural h ables, such as impor when found to be sta

[27] Typically, in empirical work, there are four different approaches available for modelling expected changes in the exchange rate. One approach is to assume perfect foresight and measure expected changes in the exchange rate by observing ex post changes. That is, assume . The drawback with this approach is that when expectation horizons are lengthy, as is the case in this study, with horizons of up to 10 years, then putting aside observations to be used as ex post measures of expected changes in the exchange rate causes the sample size to become prohibitively small. Two alternative approaches are to assume static expectations, letting , and extrapolative expectations, where . The static-expectations approach is based on the idea that exchange rates follow a random walk, while extrapolative expectations assume a backward-looking behaviour. Although the theoretical basis for this seems unsound, in practice the difference in results between from an extrapolative-expectations model and a perfect-foresight model can be quite small (see, for instance, Cavaglia et al., 1993; MacDonald and Torrance, 1990). A fourth approach is to use surveys of exchange-rate expectations, letting , in an attempt to take a direct, as much as is possible, measurement of expectations.

[28] As an empirical starting point, the Gaussian model does, in fact, seem valid for the dependent variable expressed as a share variable, since there are no zero observations in the 2-year-maturity sample bracket, and just 3% of observations take the value zero in the 5- ard linear Gaussia nough so as not to be

[29] See P be the applicati nd Katz (1995) h bly optimist ts is less than n is that FGLS i

[30] Issuer ernational Settleme sibility, which, a a part of multinat

[31] In order to ensure that the issuers in the sample are, in fact, able to exercise a reasonable choice among the five currencies in the sample, included are only those issuers that are observed to issue bonds in at least three of the five issuance currencies during the sample period. This sorting procedure is conducted by nationality rather than by individual issuer, so that if one issuer of a given nationality is observed to issue in three or more different currencies, then all issuers of the same nationality are included in the sample.

[32] Securities with maturities of 1 year or less are excluded because for securities with such short maturities, the forward market can provide cover for exchange-rate risk. Bonds with maturities greater than 15 years are omitted in order to reduce the scope for matching errors generated by inexact matching of maturities between bonds, swap yields and interest rates. The 2-year-maturity bracket includes all bonds with maturities greater than 1 year but less than or equal to 3 years. The 5-year-maturity bracket includes all bonds with maturities greater than 3 years but less than or equal to 7 years. The 10-year-maturity bracket includes all bonds with maturities greater than 7 years but less than or equal to 15 years.

[33] Note that percentage change in the expected number of bonds issued for a unit change in each explanatory variable, holding other variables constant, is calculated as 100 * [exp(estimated coefficient) - 1].

[34] Regre ected appreci ctations), but the

[35] Expec hort-maturity d sign, namely s that they expe estimated coefficie (the average associated with a 9 rency.

[36] Recall ive to total amounts relative shares i ent

sections. Other formulations of these variables (for instance, relative rates of change), yield similar results.

[37] Note that the variables rgdp, liq, dinv and ma are expressed in terms of percentage points.

[38] The average absolute quarterly change in currency share of issuance during the sample period (for bonds that fall into the 2-year-maturity bracket) is 3 percentage points. Recall also that the average absolute change in during the sample period is 25 basis points.

[39] In tests of parameter equality, unreported, we are unable to reject the null hypothesis of equality of coefficients for ε^u and .

[40] Government bond yields are used to proxy borrowing costs for a number of reasons. First, as highlighted by McBrady and Schill (2007), government bond yields, unlike corporate bond yields, are free of contamination from default-risk pricing, which may otherwise affect an issuer's choice of issuance currency. Second, yields on investment-grade corporate bonds (which may could be a better proxy for the borrowing costs faced by issuers of foreign-currency bonds) are unavailable for all currencies. Government bond yields are obtained from Bloomberg.