

Stripping of Bunds

During the past few years, the Federal Government and the Bundesbank have worked together closely in introducing a number of innovations – new borrowing instruments and issuing methods which are designed to bring government debt management into line with international standards and to adapt it to increasingly intense international competition. For the Federal Government, it will be important to retain its leading position in the larger euro-denominated bond market after the start of European monetary union, when it will no longer enjoy its present competitive advantage as the “home issuer” of the Deutsche Mark anchor and reserve currency. The recent decision by the Federal Ministry of Finance to allow the option of stripping ten-year and 30-year Bunds (Federal bonds) from July 4, 1997¹ has to be seen in that wider context of competition between the issuers in setting the benchmark and between the financial centres in enhancing their attractiveness.

The stripping of a bond implies the separation of the certificate (principal amount) and the interest coupons. The principal strip and the individual coupon strips are traded separately. In economic terms, they are zero-coupon securities (zero bonds) with staggered (residual)

*Definition of
stripping*

¹ Technical details in Deutsche Bundesbank, Stripping of Bunds, Press release, June 2, 1997. “Stripping” stands for STRIPS = Separate Trading of Registered Interest and Principal of Securities.

maturities. A Bund running for ten years, for example, may be broken down into a principal strip (stripped bond), as a zero-coupon bond with a maturity of ten years, and into ten coupon strips as zero-coupon bonds with maturities ranging from one year to ten years.

The stripping of a bond also implies the corresponding possibility of reconstructing the original bond (underlying bond) from the coupon strips and the principal strip. Reconstruction of the bond is the prerequisite of arbitrage between the underlying bond and its components. The high minimum amounts (DM 100,000) for stripping and reconstruction, the transactions costs that are incurred and the fact that, for tax reasons, only banks are allowed to reconstruct bonds in Germany mean that arbitrage is likely to be undertaken principally by credit institutions or abroad.

In order to achieve as much liquidity as possible in the new market segment for stripped bonds, authorisation has been given to allow the stripping of three Bunds which have already been issued, with the coupon dates January 4 and July 4, and which so far have a total issue volume of DM 67 billion. The 30-year Bund issued at the beginning of July 1997, which is to be reopened at a later date, has increased the volume of strippable bonds that is initially available to DM 77 billion.

For the future, it is envisaged that all ten-year and 30-year Bunds will be made strippable as a matter of policy and that the coupon and redemption dates will be uniformly concentrated on January 4 and July 4. Coupon strips

Strippable Bunds

Securities identification number	Coupon in %	Maturity	Volume DM billion	Issue date
113 502	6	Jan. 4, 2007	30	Jan. 7/8, 1997 Jan. 28, 1997
113 492	6.25	Jan. 4, 2024	20	Dec. 28/29, 1993 Feb. 8/9, 1994
113 503	6	July 4, 2007	1 17	April 22/23, 1997
113 504	6.50	July 4, 2027	1 10	July 1/2, 1997

1 Reopening possible.

Deutsche Bundesbank

with the same maturity will be grouped together under a single securities identification number (irrespective of the bond from which they are stripped and irrespective of its coupon) with the same price and yield. The differing coupons will no longer be of relevance.

The aim of combining coupon strips of the same maturity is to achieve liquidity which is as high as possible throughout the entire maturity spectrum ranging from one year to 30 years. Ultimately, however, it is up to the market players themselves to determine liquidity in the individual segments, since it is they who will be taking the decisions on stripping and reconstruction. Differences between the market value of an underlying bond and its rebundable strips will generate

arbitrage activities and result in stripping or reconstruction, as the case may be. The *Deutscher Kassenverein* (central securities depository) and the business news services will provide data on this (e.g. stripping volume, reconstructions).

For the rest, there is no limitation on stripping; in other words, it is theoretically possible for the entire issue volume of a bond to be broken down into strips. This will probably not happen in practice, however, since there is always likely to be a demand for the underlying bond in the market. For the sake of completeness, it should be also mentioned that principal strips may not be rebundled either with other principal strips or with coupon strips of the same maturity. In the interests of a correct disclosure of debt, the creation of "synthetic" bonds which such rebundling would allow is considered by the Federal Debt Administration to be undesirable.

*Listing on the
stock exchange*

The Federal Government and the Bundesbank are assuming that trading in strips will principally take place between professional investors outside the stock exchange. The Bundesbank will therefore not conduct any price management operations for the strips. For the same reason, the issuer has decided to list them at only one place, the Frankfurt Stock Exchange. That appears to be essential to the issuer in the interests of liquidity and representative pricing.

*Advantages for
the issuer*

With the introduction of strippable bonds, the Federal Government is completing its set of borrowing instruments and simultaneously making an important addition to the range of

products available in the German market place. Experience in other countries, such as the United States and France, shows that the market players are prepared to pay a price for the option of stripping.

For Germany, too, it may therefore be assumed that the introduction of strippable bonds will enable the Federal Government – other things being equal – to lower its financing costs by several base points. The main reason for this is that stripping will create investment opportunities in all maturity categories up to 30 years, although the Federal Government itself services only certain points of the yield curve in the primary market, i.e. 30, ten, five and two years as well as six months. Strips can now satisfy investor requirements for, say, 27-year or 15-year maturities and, as a result, the available range has been widened within the shorter maturities, for which bonds with residual maturities are on the market. This means that the Federal Government will be offering investment opportunities to institutional investors along the entire length of the yield curve; in other words, exactly what those investors prefer and what is expected of a benchmark issuer.

From the investors' point of view, the zero-coupon bonds created by stripping also have a number of advantages over coupon-bearing bonds:

*Advantages for
investors*

- Zero-coupon bonds have only one payment at final maturity and thus relieve the investor of the problem of reinvesting coupon payments. Zero-coupon bonds are

therefore ideal for investors who wish to manage future payment flows exactly. That is the case, for example, if an insurance benefit or a pension has to be paid on a one-off basis on a fixed date. With traditional coupon bonds, there regularly arises the above-mentioned problem of reinvesting the interest payments at rates of interest which are not known in advance.

- With coupon-bearing bonds, the effective yield can be determined at the time of investment only by using imputed assumptions concerning the reinvestment of the coupon payments. Since the reinvestment yield is not known in advance, the yield to maturity calculated at the time of purchase will deviate from the actual yield, which can only be determined *ex post*. With zero-coupon bonds, on the other hand, the yield calculated at the time of purchase will also be actually realised if the bond is held until maturity.
- In the case of zero-coupon bonds, the duration² is always equal to the residual maturity. As a result, its price reacts more strongly to interest rate changes than the price of coupon-bearing bonds of the same residual maturity – which have a shorter duration on account of the recurring interest payments. Because of this leverage effect, zero-coupon bonds are particularly attractive to investors who are prepared to take risks.
- The interest sensitivity of portfolios can be managed particularly effectively with

zero-coupon bonds since zero-coupon bonds, given the same maturity, have a longer duration and hence a greater convexity³ than coupon-bearing bonds.

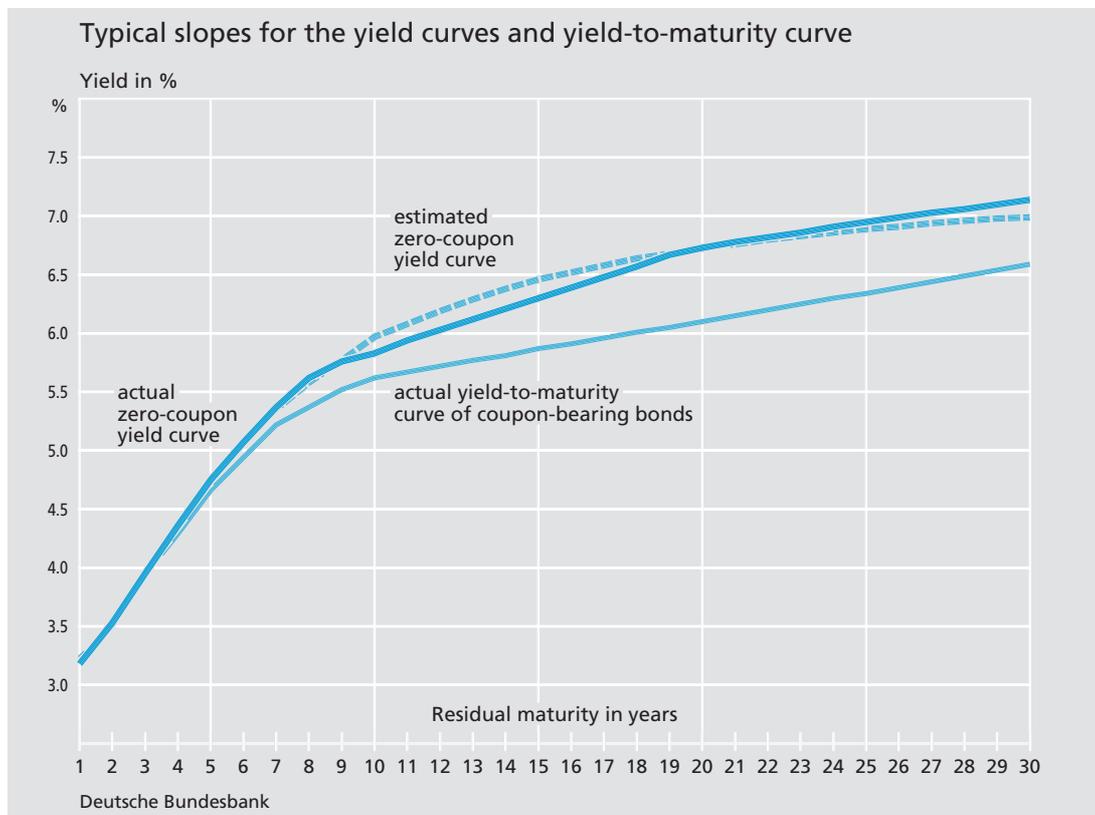
- Zero-coupon bonds can be attractive to domestic private investors from a tax point of view as well. The investment income which is relevant to personal income tax and tax on interest income is, in principle, ascertained from the difference between the buying and selling price (or redemption amount). By choosing a zero-coupon bond with the appropriate maturity or by selling it, investors are able to allow investment income to fall in a period which is favourable to them in terms of tax treatment. Furthermore, they enjoy a tax deferral effect. Zero-coupon bonds are hence especially suited to provision for old age, for example, since the top rate of income tax during retirement is almost invariably lower than the top rate of income tax during working life.

The existence of zero-coupon bonds over a wide maturity spectrum provides the market with a term structure which actually exists in addition to the yield-to-maturity structure of coupon bonds and the zero-coupon yield curves, which can only be estimated theor-

Yield curve

² The duration is the weighted average maturity of all payment flows from a bond. It is a major determinant of a bond's interest sensitivity. In this, a linear relationship between yield and price is assumed.

³ Convexity is a coefficient which states the estimation error produced by the assumption of the linearity of the price-yield relationship in the duration concept. In reality, the price-yield relationship of a bond is not linear, however, but shows a convex curvature.



etically at present on the basis of the data on the coupon bonds.

This brings about a general improvement in the information sources for pricing and interest rate analysis in the capital market. The yield curve produced by the zero-coupon bonds traded in the market will almost invariably deviate from the estimated theoretical curves. On the one hand, the fact that the liquidity of the strips is still low might lead investors, particularly in the initial phase, to demand a certain risk premium in comparison with the theoretical yield. On the other, experience in other countries reveals that the demand for strips is not spread evenly between all maturities.

There are likely to be varying deviations from the theoretical yield curve, depending on the maturity range. For example, it is probable that, quite generally and especially when interest rates are expected to rise, demand will be highest for strips of up to ten years, and that, when interest rates are expected to fall, the demand for strips with a very long maturity will be particularly high on account of their high interest sensitivity. The fact that the zero-coupon bonds show greater convexity than coupon bonds implies that, given a decline in yields, the relative price increase of a zero-coupon bond is higher than for a coupon bond. If there is a rise in yields, the relative fall in the price of a zero-coupon bond is less than that of a coupon bond. Investors use this asymmetry systematically in managing their portfolios.

*New market
segment
with growth
potential*

As the possibility of stripping Bunds was introduced only a few days ago, it would be premature to draw more far-reaching conclusions at this early stage. There is much to suggest, however, that this will offer new business opportunities to the credit institutions and new investments options to investors which will strengthen Germany's position as a

financial centre in the long run. At the same time, the Federal Government, which will issue strippable ten-year and 30-year Bunds regularly in future, will have significantly improved its starting position in competing to set the benchmark and to create more favourable financing terms.