

EMU AND MARKET CONVENTIONS: RECENT DEVELOPMENTS

1. *Introduction*

On 16th July, 1997, ISDA, along with a number of other trade associations, Cedel and Euroclear, published a joint statement on market conventions for the euro. That joint statement was subsequently supported by both the European Commission and the European Monetary Institute (now the European Central Bank).

The joint statement was intended to focus attention on the need to establish a set of market conventions for the euro. Conventions of the type dealt with in the joint statement tend to differ between currencies, largely for historical rather than valid market reasons. It was inconceivable that the new single currency should itself suffer from the mixture of market conventions which apply to the various national currencies that it is due to replace.

At the time of publication, the joint statement reflected a broad market consensus view on what standard market practice should be for new euro-denominated transactions entered into after 1st January, 1999. It also advocated that for "legacy" instruments or transactions (those entered into before 1999 in national currency units or the ECU, but maturing after 1st January, 1999) which incorporated the old national currency conventions, no change should be made to update the conventions.

The purpose of this memorandum is to bring the issue of harmonised market conventions for the euro up to date in light of developments that have taken place since the publication of the joint statement over a year ago.

A summary of the proposed market conventions for the euro financial markets is attached as Exhibit 1.

2. *Legacy Transactions vs. New Euro-Denominated Transactions*

The joint statement distinguished between the conventions applicable to new euro-denominated transactions - whether entered into before or after 1st January, 1999 - and legacy transactions. The importance of this distinction should not be underestimated.

The main objections to "reconventioning" (changing the terms of legacy transactions to bring them into line with the new harmonised euro conventions) relate to the complexity of the reconventioning process and the possibility of mismatches arising between financial contracts and related hedging arrangements.

In the first place, reconventioning implies alteration of contractual terms. In principle, subject to any relevant provisions of the governing law, this type of alteration would require the consent and agreement of all parties to the transaction. While this may be relatively easily achieved for OTC derivative transactions where there will only be two parties to the contract, the procedures required to amend outstanding bond issues are likely to make the amendment process prohibitively complex.

Secondly, reconventioning of contracts raises the prospect of mismatches between contracts which were intended to be closely matched. For example, in an asset swap structure, it is important that the

payment terms of the swap transaction exactly match those of the related bond. By changing the terms of the bond, a risk of a mismatch with the payment terms of the swap arises.

Lastly, but possibly most importantly, any decision by issuers to redenominate or reconvention outstanding bonds creates administrative difficulties for financial institutions.

Please refer to point 5 below for an example of how existing conventions are to be preserved in the context of determining a floating amount under a swap.

3. *Conventions for the Euro Bond Markets*

The recommended conventions contained in the joint statement for euro-denominated bond issues are as follows:

<i>Day Count Basis:</i>	Actual/actual
<i>Quotation Basis:</i>	Decimals
<i>Business Days:</i>	TARGET operating days

Government Issuers

Support for these conventions has been encouraging and widespread; most notably among sovereign issuers within the European Union. Evidence of the support shown has come from the redenomination plans of EU members states in relation to their outstanding national currency denominated debt.

Despite the recommendation in the joint statement that outstanding bond issues should not be redenominated, but unsurprisingly nonetheless, all 11 EU member states which are to participate in the first wave have indicated that they will redenominate and reconvention marketable government debt at the start of Stage 3. Information on their reconventioning plans has been published by the Brouhns Group - an ad hoc working party of EU government and central bank officials established under the auspices of the Monetary Committee.

The Brouhns research indicates that, although some governments are still discussing the point, all 11 member states currently intend to adopt an actual/actual day count fraction and TARGET business days for all reconventioned bonds. The working party's research also confirms, where the relevant government has made an announcement, that new bonds to be issued after Stage 3 begins in 1999 will be on an actual/actual day count basis and with TARGET business days.

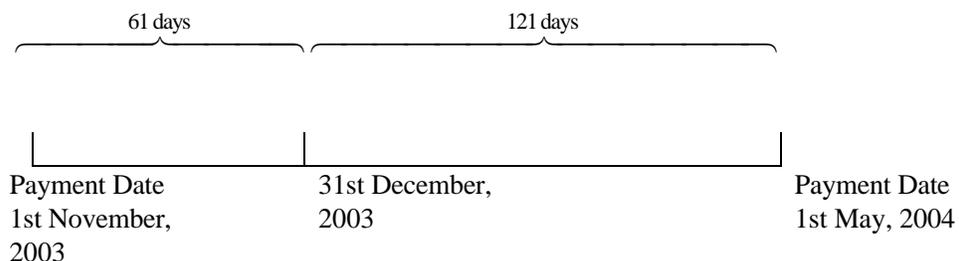
4. *The Actual/Actual Day Count Convention*

Although the actual/actual interest accrual convention is the recommended convention for bonds, there is some debate as to what actual/actual means. There are at least three different interpretations of actual/actual. It is anticipated, for example, that euro-denominated bonds will follow the ISMA understanding of the actual/actual convention (which is also the US treasury convention). A second method of calculating accrued interest on an actual/actual basis exists (known as the AFB method) which, although similar in a number of ways, produces different results from the ISMA method. The third approach is that included in the 1991 ISDA Definitions - the ISDA method.

This section explains the differences between the three methods for members' benefit and explains ISDA's view on the use of the Act/Act daycount convention with respect to swaps.

Notional: £ 10,000

Fixed Rate: 10%



$$\text{ISDA Method: } £ 10,000 \times 10\% \times \left(\frac{61}{365} + \frac{121}{366} \right) = £ 497.72$$

$$\text{ISMA Method: } £ 10,000 \times 10\% \times \left(\frac{182}{182 \times 2} \right) = £ 500.00$$

$$\text{AFB Method: } £ 10,000 \times 10\% \times \left(\frac{182}{366} \right) = £ 497.27$$

The difference between the ISDA, ISMA and AFB methods can be reduced to a consideration of the denominator to be used when calculating accrued interest. The numerator will, in all three cases, be equal to the actual number of days from and including the last coupon payment date (or period end date) to, but excluding, the current value date (or period end date). Under the ISDA approach, however, the denominator varies depending on whether a portion of the relevant calculation period falls within a leap year (for the portion of the calculation period falling within a leap year, the denominator is 366 and for the portion falling outside a leap year, the denominator is 365 - the actual number of days in the relevant portions is used as the numerator and the two fractions are added together). Under ISMA Rule 251, the denominator is the actual number of days in the coupon period multiplied by the number of coupon periods in the year (subject to exceptions in relation to irregular coupon periods). Under the AFB method, the denominator is either 365 (if the calculation period does not contain 29th February) or 366 (if the calculation period includes 29th February) - where a period of longer than one year is involved, two or more calculations are made: interest is calculated for each full year, counting backwards from the end of the calculation period, and the remaining initial stub period is treated in accordance with the usual rule. When counting backwards for this purpose, if the last day of the relevant period is 28th February, the full year should be counted back to the previous 28th February unless 29th February exists, in which case, 29th February should be used.

Note: The term calculation period, when used in this document, bears the same meaning given to that term in the 1991 ISDA Definitions: the period from, and including, one period end date (or the effective date) to, but excluding, the next period end date (or the termination date).

Given this apparent inconsistency, and in order to clarify the use of the actual/actual convention in swaps where it may be relevant, ISDA's EMU Market Practice and Operations Task Forces have recommended that ISDA should update the menu of fixed rate day count fractions where they appear in the 1991 ISDA definitions. The existing ISDA approach will be retained, to be known as

"Actual/Actual (Historical)", the AFB approach will be introduced, to be known as "Actual/Actual (Euro)". The ISMA approach will also be introduced, to be known as "Actual/Actual (Bond)". These changes will be taken forward when ISDA revises and consolidates its existing interest rate swap definition booklets in the course of 1999. In the meantime, members may wish to employ the abovementioned reference names when entering transactions in order to distinguish between the three approaches.

With the proliferation of different versions of the Actual/Actual day count fraction in ISDA definitions, market participants are strongly advised to specify when dealing which method should apply.

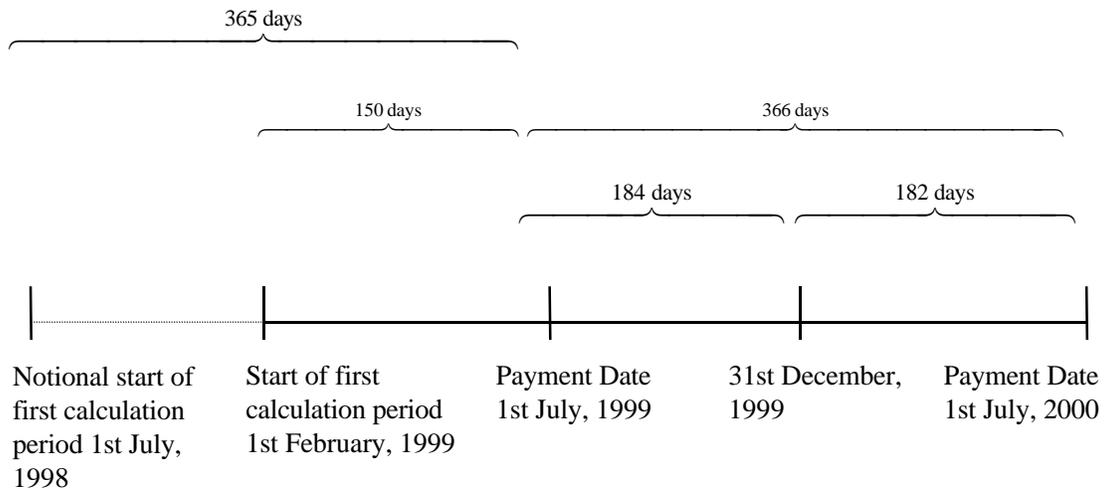
Application of the ISMA actual/actual method raises particular issues in relation to irregular coupon or calculation periods. ISMA has therefore indicated that irregular periods should be avoided. Where irregular periods are unavoidable, as they will often be in relation to swap transactions, a recommended approach (included within the ISMA Rules) is as follows:

Short first calculation period:

Where the first calculation period is shorter than the "regular" calculation period for a transaction, interest accrual for that period using the ISMA approach is calculated as the actual number of days in that period divided by the actual number of days in a notional calculation period of the required "regular" length which ends on the last day of the first calculation period. In the example below, assume regular annual coupons.

Notional: £ 10,000

Fixed Rate: 10%



First Period:

$$\text{ISDA Method: } £10,000 \times 10\% \times \left(\frac{150}{365} \right) = £410.96$$

$$\text{ISMA Method: } £10,000 \times 10\% \times \left(\frac{150}{365 \times 1} \right) = £410.96$$

$$\text{AFB Method: } £10,000 \times 10\% \times \left(\frac{150}{365} \right) = £410.96$$

Second Period

$$\text{ISDA Method: } £10,000 \times 10\% \times \left(\frac{184}{365} + \frac{182}{366} \right) = £1,001.38$$

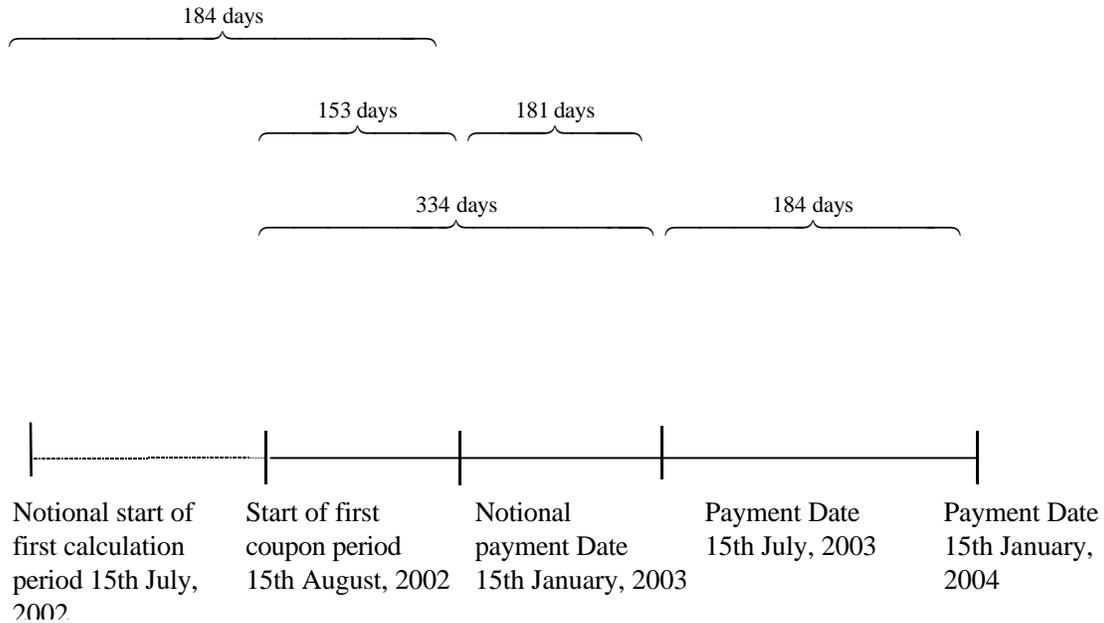
$$\text{ISMA Method: } £10,000 \times 10\% \times \left(\frac{366}{366 \times 1} \right) = £1,000.00$$

$$\text{AFB Method: } £10,000 \times 10\% \times \left(\frac{366}{366} \right) = £1,000.00$$

Long first calculation period:

Where the first calculation period is longer than the "regular" calculation period for a transaction, interest accrual for that first period using the ISMA approach is calculated as the sum of two calculations: one based on an assumed "regular" first calculation period (counting backwards from the last day of the first calculation period), giving a notional payment date, and the second, using the same approach as for a short initial calculation period in relation to the part of the actual calculation period which falls before the notional payment date.

Notional: £ 10,000
 Fixed Rate: 10%



First Period:

$$\text{ISDA Method: } £10,000 \times 10\% \times \left(\frac{334}{365} \right) = £915.07$$

$$\text{ISMA Method: } £10,000 \times 10\% \times \left(\frac{181}{181 \times 2} + \frac{153}{184 \times 2} \right) = £915.76$$

$$\text{AFB Method: } £10,000 \times 10\% \times \left(\frac{334}{365} \right) = £915.07$$

Second Period

$$\text{ISDA Method: } £10,000 \times 10\% \times \left(\frac{184}{365} \right) = £504.11$$

$$\text{ISMA Method: } £10,000 \times 10\% \times \left(\frac{184}{184 \times 2} \right) = £500$$

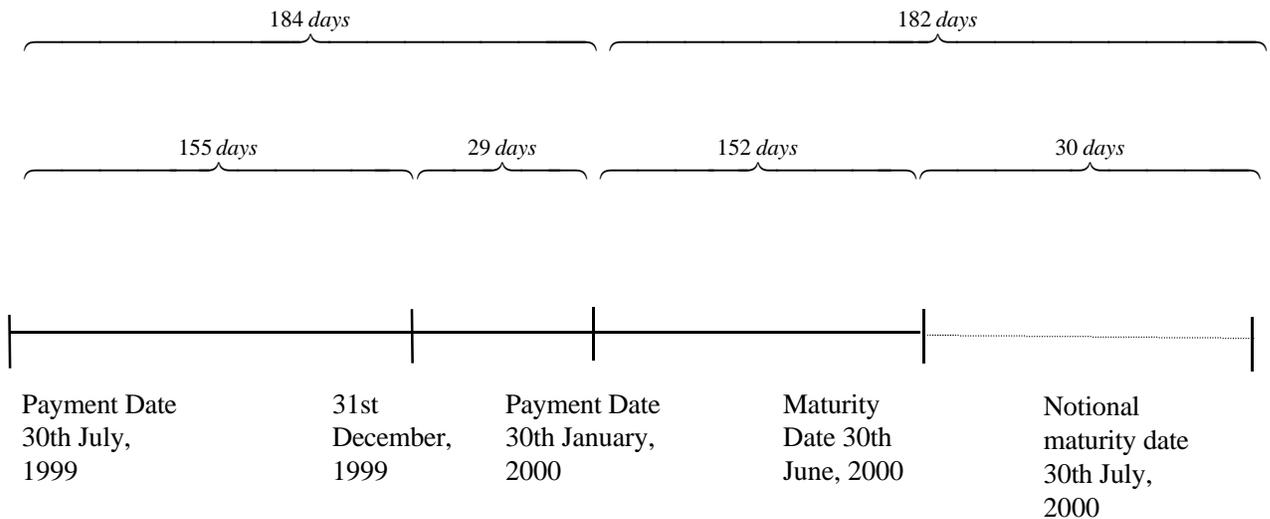
$$\text{AFB Method: } £10,000 \times 10\% \times \left(\frac{184}{365} \right) = £504.11$$

Short final calculation period:

Where the final calculation period is shorter than the "regular" calculation period, interest accrual for that period using the ISMA approach is calculated as the actual number of days in that period divided by the actual number of days in a notional calculation period of the required "regular" length which starts on the first day of the final calculation period.

Notional: £ 10,000

Fixed Rate: 10%



Penultimate Period:

$$\text{ISDA Method: } £10,000 \times 10\% \times \left(\frac{155}{365} + \frac{29}{366} \right) = £503.89$$

$$\text{ISMA Method: } £10,000 \times 10\% \times \left(\frac{184}{184 \times 2} \right) = £500.00$$

$$\text{AFB Method: } £10,000 \times 10\% \times \left(\frac{184}{365} \right) = £504.11$$

Final Period

ISDA Method: $\text{£}10,000 \times 10\% \times \left(\frac{152}{366}\right) = \text{£}415.30$

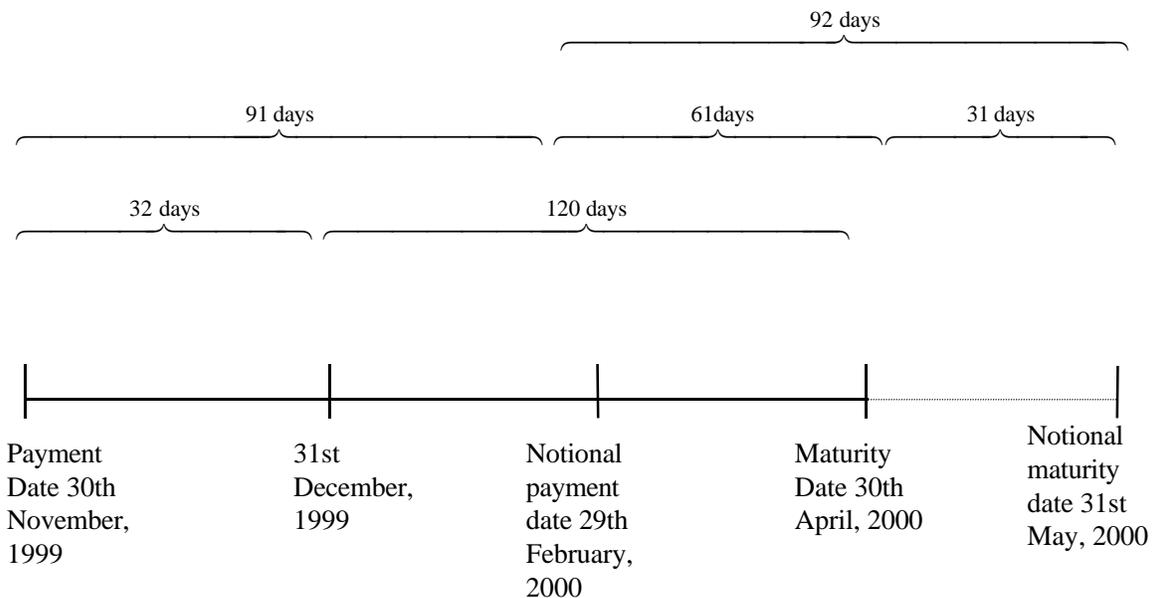
ISMA Method: $\text{£}10,000 \times 10\% \times \left(\frac{152}{182 \times 2}\right) = \text{£}417.58$

AFB Method: $\text{£}10,000 \times 10\% \times \left(\frac{152}{366}\right) = \text{£}415.30$

Long final calculation period:

Where the final calculation period is longer than the "regular" calculation period for a transaction, interest accrual using the ISMA approach for that final period is calculated as the sum of two calculations: one based on an assumed "regular" final calculation period (counting forwards from the first day of the final calculation period, giving a notional payment date, and the second, using the same approach as for a short final calculation period in relation to the part of the actual calculation period which falls after the notional payment date.

Quarterly payments
 Notional: £ 10,000
 Fixed: 10%



$$\text{ISDA Method: } \pounds 10,000 \times 10\% \times \left(\frac{32}{365} + \frac{120}{366} \right) = \pounds 415.54$$

$$\text{ISMA Method: } \pounds 10,000 \times 10\% \times \left(\frac{91}{91 \times 4} + \frac{61}{92 \times 4} \right) = \pounds 415.76$$

$$\text{AFB Method: } \pounds 10,000 \times 10\% \times \left(\frac{152}{366} \right) = \pounds 415.30$$

5. *Conventions for the Euro Money Markets*

Government Issuers

Although not all government issuers intend to reconvention outstanding money market instruments, those which have indicated their intention to do so plan to conform with the recommended conventions set out in the joint statement:

<i>Day Count Basis:</i>	Actual/360
<i>Business Days:</i>	TARGET operating days

Again, where the relevant government has made an announcement, research confirms that new money market instruments issued by the 11 participating member states after 1st January, 1999 will also conform with the recommended conventions.

Floating Rates of Interest

The disappearance of and alterations to relevant price sources has been an issue with which ISDA has been closely involved because of its sensitivity for derivatives contracts.¹ We now have details of the two new price sources for euro interest rates due to come into effect at the end of 1998. The ACI and EBF sponsored EURIBOR quotation will be a representative rate for euro deposits based on quotations from a pan-European panel of banks. The BBA sponsored euro-LIBOR quotation will be a representative rate for euro deposits based on quotations from a panel of 16 banks in the London market.

Both EURIBOR and euro-LIBOR will conform with the market conventions recommended in the joint statement. This means that both rates will be quoted on each TARGET open day for value two TARGET days thereafter and that the day count fraction used to establish the rates quoted will be actual/360.

Again, ISDA has attempted to facilitate the use of applicable conventions for transactions involving floating rate euro payments. As noted above, the 1998 Supplement contains a business day convention for the euro which meets the proposed euro conventions. In addition, ISDA will shortly publish definitions for euro-LIBOR, EURIBOR and EONIA (the new overnight rate for the euro) for use in euro transactions.

¹ See ISDA's paper "EMU and Price Sources" published on 25th August, 1998.

Impact on Legacy Transactions

The principle advocated in the joint statement that conventions for legacy transactions should not change extends, naturally, to swap transactions involving floating rate payments. The fact that existing national currency price sources will be replaced by either EURIBOR or euro-LIBOR creates additional concerns, however, where the new rates assume different conventions (for fixing periods and day count fractions) from the existing rates. The approach taken in ISDA's EMU Protocol is to require that existing fixing periods are maintained for legacy transactions and that, where the day count fraction for the new rate differs from that of the old, an adjustment should be made to the new quoted rate to reflect this difference. The intention is to minimise the impact of the change on legacy swap transactions.

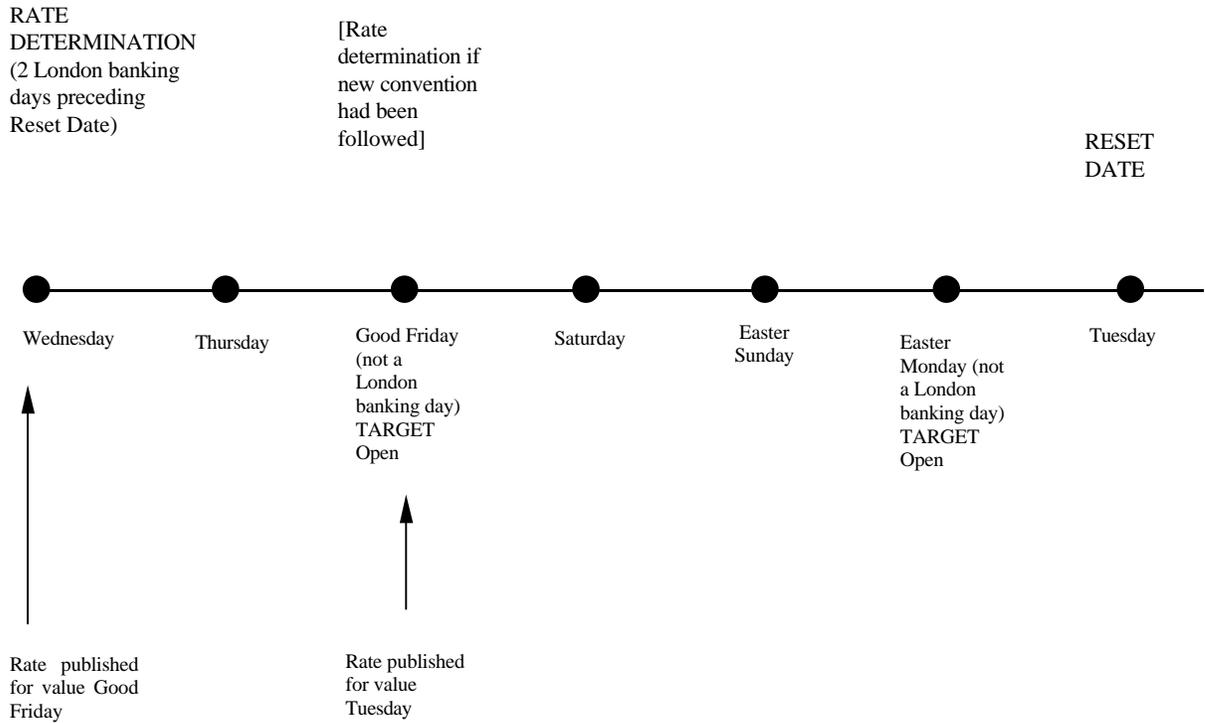
Fixing periods:

The example set out below, assumes two swap transactions. In the first, the floating leg is determined by reference to DEM-LIBOR. Until 1999, DEM-LIBOR will be quoted on each London banking day for value two London banking days later. Where the 1991 ISDA Definitions are used, the contract will reflect this two day "fixing period". In 1999, DEM-LIBOR will be replaced by euro-LIBOR which will be quoted on each TARGET business day for value two TARGET business days later.

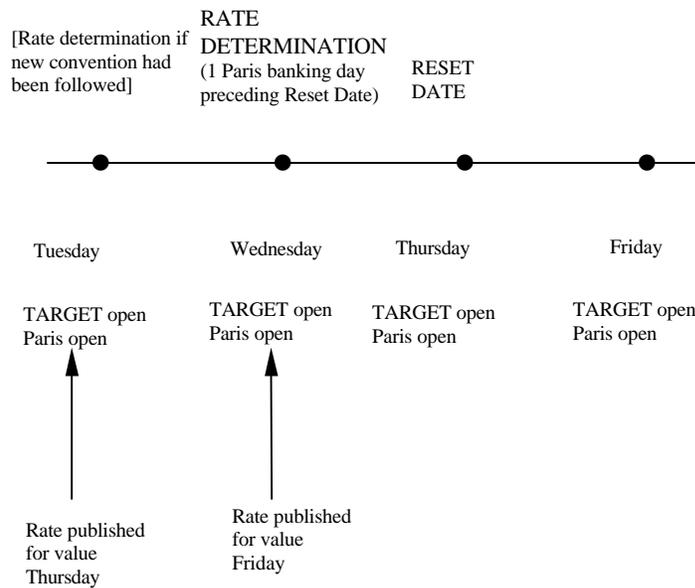
In the second example, the floating payment is determined by reference to FRF-PIBOR which is currently quoted on each Paris banking day for value one Paris banking day later. FRF-PIBOR will be replaced in 1999 by EURIBOR which, as with euro-LIBOR, will be quoted on each TARGET business day for value two TARGET business days later.

In each case, market consensus (reflected in the provisions of the EMU Protocol) is to preserve the existing fixing period. The table below shows how this approach impacts (including where national holidays intervene).

Swap 1 (DEM-LIBOR) - Legacy Transaction



Swap 2 (FRF-PIBOR) - Legacy Transaction



Day count fractions:

Any adjustment to floating rates obtained from successor sources in order to reflect differences between the assumed day count for the successor and the assumed day count for the original rate is likely to have been carried out by the publisher of the successor rate. For example, the current day count for the BEF-BIBOR rate is Actual/365 (Fixed). BEF-BIBOR is to be replaced by EURIBOR which will be quoted with a day count of Actual/360. A converted EURIBOR rate will be displayed on the current display page for BEF-BIBOR. When referring to the BEF-BIBOR rate on or after *4th January, 1999*, parties will be able to use the converted rate for calculations under legacy transactions which involve BEF-BIBOR. This is the approach set out in Annex 2 to the ISDA EMU Protocol. However, it relies on the publisher having made the appropriate conversion. Current indications are that converted EURIBOR rates will be made available on Telerate page 249.

Where the publisher has not made the converted rate available, parties will have to carry out the conversion themselves. In the case of BEF-BIBOR to EURIBOR, this will mean taking the unconverted EURIBOR rate and multiplying it by a factor of 365/360. An example is set out below:

Unconverted EURIBOR rate:	10%
Conversion factor:	365/360
Converted EURIBOR rate:	10.139%

Note: Where converted rates are available on a screen page, they will be published using the same number of decimal places as the original rate itself. For example, BEF-BIBOR is published correct to three decimal places, the converted EURIBOR rate appearing in place of BEF-BIBOR is published correct to three decimal places.

6. Euro Swap Conventions

The joint statement on market conventions did not explicitly set out the conventions applicable for euro swaps. Thus, while it is clear that the floating leg of swaps will follow the euro money market convention, there has been confusion as to the appropriate convention for the fixed leg of euro swaps and, in particular, whether the bond market convention should apply to these. ISDA has therefore consulted members on this point.

Following this consultation exercise, ISDA has now concluded that, while actual/actual may be the appropriate common day count standard for the euro zone bond market, it is inappropriate as a standard market convention for normal euro swap transactions. Instead, ISDA members' current thinking is that 30/360 (annual) would be the most appropriate basis for calculating interest accrual on fixed payments for euro-denominated swaps. (It should be noted that this is often referred to by traders as the "annual bond method". This is likely to continue to be the case, notwithstanding the difference with the euro bond market convention.)

The reason for adopting a 30/360 (annual) day count fraction is that existing DEM and ECU swaps quote on this basis and that the emerging practice for the euro is to follow the same approach, as reflected on broker screens. It is also envisaged that systems changes would be minimised if this approach is adopted. Further, as swap and bond conventions need not be identical, euro money and bond market conventions could therefore differ. The market conventions in the United States, for example, are not identical.

While 30/360 (annual) is now ISDA's recommendation for the fixed rate day count fraction in euro swaps, ISDA also appreciates that in certain swap transaction (notably asset swap structures) there will be a need for payments under the swap to match payments under an associated bond. Where the bond, as anticipated for euro-denominated bonds, uses an actual/actual interest accrual basis, this means that the swap too will have to have an actual/actual fixed rate day count fraction. Issues arising in connection with the actual/actual day count convention, and ISDA's proposals in this regard, are discussed above.

ISDA will continue to monitor market practice with regard to euro swap conventions and will review the position in the course of 1999 to see whether practice in fact evolves to mirror bond market conventions. It should be emphasised that the recommendation for a different euro swap market convention than that employed for the euro bond markets does not alter ISDA's support for the recommendations of the joint statement as a whole.

Users of ISDA standard form documentation should note that the 1998 Supplement to the 1991 ISDA Definitions facilitates the use of the new euro conventions by introducing a new definition of "Euro Settlement Date". Parties who wish to enter into euro transactions can make use of the new definition to provide that payment business days for the euro will match those on which the TARGET system is open.

The joint statement did not recommend a standardised practice in relation to coupon frequency. It was noted that annual coupons were prevalent in most EU countries, but that semi-annual coupons were used in the United States, Japan, the United Kingdom and Italy. In light of further discussion on this issue, swap market practitioners have recognised the benefits of harmonising conventions in relation to coupon frequency. In line with the existing and proposed conventions for the European bond markets, ISDA therefore recommends annual coupons for euro-denominated swaps.

7. *Extension of the Harmonised Euro Conventions to Other Currencies*

The benefits to be achieved by the adoption of harmonised market conventions for the new single currency have led some to advocate their adoption for financial transactions in other currencies.

For example, the Bank of England will be introducing new standards for the calculation of the clean price in secondary trading of UK gilts with effect from 1st November, 1998 and the London Stock Exchange intends to make similar changes for registered non-gilt sterling denominated issues. These new standards will adopt the actual/actual day count fraction.

There have been suggestions that the actual/actual day count fraction should become the market convention for fixed rate issues in all currencies.

8. *Conclusion*

Support for the harmonised market conventions recommended in the joint statement has been widespread and gratifying. The use of these conventions for all transactions involving the euro will help in the development of a true financial market for the new currency.

ISDA will continue to work towards allowing users of its standard form documentation to use the new conventions in euro-denominated swap transactions.

ISDA - 25 November 1998

RECOMMENDED MARKET CONVENTIONS FOR THE EURO

Euro money markets

- Day count basis: actual/360
- Settlement basis: spot (two day) standard
- Business days: TARGET operating days should form the basis for euro business days

Euro Bond markets

- Day count basis: actual/actual
- Quotation basis: decimals rather than fractions
- Business days: TARGET operating days should form the basis for euro business days
- Coupon frequency: annual
- Settlement dates: the standard for internationally traded cross-border transactions for the euro should remain on a T+3 business day cycle

Euro Swap Markets

- Floating day count basis: actual/360
- Fixed rate day count basis: 30/360
- Business days: TARGET operating days should form the basis for euro business days
- Fixing period: two day rate fixing convention
- Coupon frequency: annual

Euro foreign exchange markets

- Settlement timing: spot convention, with interest accrual beginning on the second day after the deal has been struck
- Quotation: 'certain for uncertain' (i.e. 1 euro = x foreign currency units)
- Reference rate: the ECB (or NCBs) should be responsible for the publication of daily closing reference rates