

EMU: Guide to Operational Issues in the FX Market

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Table of Contents

Introduction	2
Overview and General Information.....	3
Trading in the Euro.....	3
Issues Involving Deal Conversion.....	3
Comments on Euro Payments.....	5
Best Practices for Determining Holiday Calendars	7
The Unique Features of Foreign Exchange Options.....	8
Other Issues such as Rounding, Price Sources, and Continuity of Contracts	9
Appendices: Glossary of Terms, Acknowledgments	11

Introduction

European Economic and Monetary Union (EMU) will present a myriad of institutional and structural changes to the current multinational European financial structure. The most notable innovations include the introduction of one central bank and the initiation of one common currency – the euro. On January 1, 1999, the euro will become the legal currency of the eleven European nations that have met the economic criteria required to qualify for EMU participation.

This paper examines the multiple changes in operational infrastructure relating to foreign exchange and foreign exchange option trading that will be necessary to implement this new administration. Included within the following pages are:

- highlights of the important operational developments and issues facing these markets;
- reviews of what is widely expected to occur by market participants;
- acknowledgments that uncertainties, problems, and disagreements remain in some areas and that these difficulties may not be resolved before the euro begins trading;
- some alternatives for market participants to follow in the event of problems and difficulties; and
- where possible, suggestions on best practices for selected operational issues.

The specific topics covered in the paper are summarized below:

Trading: Uncertainties surrounding the recommended quoting conventions, the role of legacy currencies, and trading in the euro prior to January 1, 1999, are discussed.

Deal conversion: Comments are included on if, when, and how conversions should take place.

Euro payments: Discussions include the varying services expected to be provided by correspondents, the disruption that could occur if a large number of participants change settlement instructions in a short period of time, and the complexities of cash managing euro and legacy currency nostro accounts.

Holiday calendars: Conventions are suggested for managing holiday calendars.

Foreign exchange options: The unique features of options are reviewed and suggestions on how these trades should be handled differently than cash or forward foreign exchange transactions are offered.

Other issues: Comments about rounding rules and pricing sources conclude the paper.

Overview and General Information

1. On January 1, 1999, the euro will come into existence. The existing currencies of the "in" countries¹ (National Currency Units [NCUs], or legacy currencies) will cease to be independent currencies and will become nonfractional denominations of the euro. The irrevocable fixing of exchange rates between the euro and each NCU will take place on December 31, 1998.
2. The period from January 1, 1999 to December 31, 2001 will be a transition period during which a *no prohibition/no compulsion* rule will apply. This means that during the transition period, no party can be forced to use the euro, but neither can it be prohibited from using the euro.
3. The ISO/SWIFT currency code for the euro will be EUR. The euro will be settled to two decimal places.
4. The European Currency Unit (ECU) will convert to EUR on a 1:1 basis on January 1, 1999.

Trading in the Euro

5. It is widely expected that the wholesale foreign exchange market will quote only EUR and stop trading NCU on January 4, 1999 (the first business day of 1999). However, most market makers will still quote in legacy currencies to accommodate clients. Therefore, each institution will need the ability to convert euro prices into legacy to support legacy currency pricing.
6. The EU Central Banks and the European Monetary Institute (EMI) – the forerunner of the European Central Bank (ECB) – have recommended that the euro become the base currency quoted as one euro = x other currency. To date, market participants remain uncertain whether the market will accept these recommendations. The recommended quotations imply significant changes in current practices for both sterling and the U.S. dollar, and confusion is possible. With no central body setting standards for the foreign exchange market, it is unclear whether this issue will be resolved before trading formally commences on January 4, 1999. Therefore, from an operational perspective, market participants may need to be prepared to meet both quoting conventions.
7. It is anticipated that most market makers will be managing their risk in euro, converting all NCU positions to euro for a consolidated risk view.
8. There has been discussion in the market about participants initiating trading in euro prior to January 1, 1999. If an institution decides to start trading in euro, it should recognize the legal risk it is taking if EMU does not start as planned on January 1, 1999. Many participants who indicated that they could trade in euro prior to January 1, 1999, also have noted that they would book these trades as ECU transactions to avoid legal risk.

Issues Involving Deal Conversion

9. *No prohibition/no compulsion*, as applied to the foreign exchange market, means that NCU foreign exchange contracts on the books on January 1, 1999, do not automatically convert to euro. (An exception is ECU contracts that automatically convert.) Unconverted

¹ Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain.

- contracts will remain denominated in the legacy currency, a denomination of the euro. Thus, during the transition period, both euro and legacy transactions will coexist.
10. Because ECU ceases to exist as a currency and is automatically converted to EUR on a 1:1 basis on January 1, 1999, these deals must be converted to euro before settlement. This is mandated by treaty and does not need to be agreed bilaterally. It is a best practice that these deals be reconfirmed. Reconfirmation is particularly important because most institutions will be using a different correspondent and account number for their euro accounts than for their ECU accounts.²
 11. Conversion of NCU foreign exchange transactions to euro during the transition period will occur only if both parties agree bilaterally on the conversion. All conversions of transactions to euro should be irrevocable.³
 12. Bilateral agreements to convert NCU transactions to euro should be in writing.
 13. To avoid confusion, parties agreeing to convert underlying foreign exchange transactions should also concur on:
 - a) the type of transactions to be converted (e.g., foreign exchange spot, forwards, foreign exchange options, etc.);⁴
 - b) the value date of the transactions to be converted (e.g., all deals with a value date of March 31, 1999 and after);
 - c) the NCUs to be converted (Market participants are recommending that all “in” currencies be converted at once.);
 - d) the date the conversion is to take place;
 - e) the method of conversion – by amending existing deals or by canceling existing deals and rebooking them in EUR. For FXNet counterparties, the cancellation can be done either by booking an equal and offsetting deal for each deal on the book or by booking a single NCU/EUR deal to close out each day’s NCU position against the euro.⁵ This point is important because the method affects how parties will reconfirm deals that have been converted. When different methods are used by parties, then both parties must be prepared for the different confirmations that result; and
 - f) instructions on how to handle deals between two “in” currencies (see below).
 14. If agreement on any of these points cannot be reached, then the conversion should not take place. The exception is point e, where the parties can agree to use a different methodology for the conversion and to resolve the confirmation differences.

² A small number of market participants will convert their existing ECU nostro accounts to EUR so that their settlement instructions will remain the same. For this situation, reconfirmation is may not be necessary.

³ Parties to a transaction could in theory agree bilaterally to convert on a revocable basis, but such an agreement is strongly discouraged.

⁴ Parties are warned to be cautious given the possibility that a blanket conversion might be made of all deals of a particular type that meet specific criteria. The parties may wish to exclude specific deals (e.g., those that are part of a structured transaction that is not being converted).

⁵ This approach is required for FXNet because FXNet does not support cancellations or amendments to matched deals.

15. Other than ECU,⁶ conversion does not have to be completed over the first weekend of 1999. Careful evaluation of risks should be made if the conversion of all contracts is planned over the first weekend. If parties allow existing positions to mature and execute new deals in the euro, the total number of transactions that need to be converted will be reduced.
16. It is a best practice to reconfirm all conversions to ensure that both parties recognize the converted rates, amounts, and potential changes in settlement instructions.⁷
17. To provide prudential controls over trade conversion, many market makers will only perform conversions over weekends, and then only with a limited number of counterparties.
18. If a deal involves two “in” currencies, then the parties implementing the bilateral agreement to convert underlying transactions should decide whether to
 - a) leave the “in”/“in” transactions in NCU,
 - b) convert all “in”/“in” transactions to EUR/EUR,⁸ or
 - c) close out all “in”/“in” transactions, either immediately or at a later date.

Comments on Euro Payments

19. To achieve an integrated euro zone, the central banks have developed a system called TARGET to link national real-time gross settlement systems (RTGS). TARGET will allow correspondent banks in each EU member country to transfer euros to correspondent banks in other member countries seamlessly. In addition to the TARGET system, the Euro Banking Association (EBA) is developing a private sector net settlement system for the settlement of euros. The TARGET and EBA systems, along with the opening of existing RTGS systems for cross-border access by correspondents, will enable correspondents to offer euro-clearing services across the European Union.
20. This infrastructure will also allow correspondents to move NCUs to euro accounts and, euro to NCU accounts, both within national borders and across borders. Funds moving across borders will be converted to EUR, and then converted to NCUs by a domestic correspondent bank. For example, a correspondent in Germany will be able to deliver euro to a correspondent in France from either a DEM or EUR account that can be credited to either an FRF or a euro account.⁹ Participants should recognize that the validations currently in their system to prevent cross-border payments will need to be relaxed to support the euro-settlement environment. In addition, banks should be aware that not all counterparties will have removed the system validations that prevent payments to a destination bank in a country different from that of the paying agent.

⁶ Legally, the ECU changes to EUR, so the conversion of the underlying transactions does not necessarily need to take place over the first weekend. Parties should be aware that their counterparts may be performing this conversion however, and should be prepared to handle confirmations.

⁷ Although most institutions will use standard confirmation formats, parties can bilaterally agree to use a statement that documents all transactions that have changed.

⁸ Some market participants will wish to convert to EUR/EUR to allow for payment netting of such deals. Others will not be able to handle EUR/EUR deals in their systems because validation rules prohibit such deals.

⁹ Banks settling an NCU transaction in EUR should include the original currency amount using SWIFT ERI (Euro Related Information) in field seventy-two of outgoing payment instructions (MT100/202).

21. At this time, services provided by euro correspondents vary. A best practice would be for institutions and their correspondents to agree on services that can be expected when converting NCU amounts to euro, or vice versa. It is important for institutions to understand and document the exact services that their correspondents provide. For example, will correspondents be ready to provide conversion between NCUs and EUR? How will correspondents handle local holidays that are not TARGET holidays? How much will they charge for their services?
22. Payments of euro will most likely be made from euro nostro accounts. While payments of euro from NCU accounts will be possible, such payments will likely be the exception rather than the rule. Most market participants may opt to move to funding in euro as quickly as possible.
23. Many market participants are expected to keep existing NCU nostro accounts for receiving and paying in NCUs, funding such accounts through a central euro account. Many market participants feel this approach will lessen the operational risks associated with the introduction of the euro and minimize the number of changes over the first weekend in 1999. The extent of change occurring at the beginning of 1999 means that operational risks in settling foreign exchange may increase greatly, particularly if a large number of participants decide to change their standard settlement instructions (SSIs). If a high volume of SSI changes take effect on the same value date, settlement problems could be significant. Any problems would then need to be investigated, leading to possible liquidity constraints for market participants and/or correspondent banks.
24. It is suggested that market participants wait for a significant portion of NCU trades on their books to mature – typically three to six months after January 1, 1999 – before changing settlement instructions from NCU nostro accounts to a euro nostro account.
25. Current market practice is to give at least five or six weeks of notice before a change in nostro accounts occurs. Given the expected number of changes at the end of 1998, earlier notification may be prudent. It is suggested that notification of all changes to settlement instructions be sent no later than September 30, 1998, or as early as possible.¹⁰
26. Because of the number of potential problems counterparties may have in making and receiving payments during January 1999, it is recommended that additional investigators be available to deal with increases in erroneous settlements as well as unmatched and mismatched confirmations.
27. The rounding rules specified in the Council Regulations (EC) no. 1103/97 can lead to small differences in the end results when payments involve conversion from euro to NCUs, or vice versa. Parties to transactions need to recognize this potential for error, and to decide how their institution will handle small rounding errors. A best practice would be to determine a threshold; rounding amounts under the threshold would be written off. With this method rounding errors will, for the most part, net out for most institutions.
28. Market participants need to determine how to cash manage and fund their euro and NCU nostro accounts. It is assumed that some institutions will cash manage and fund only in euro, while others will fund NCU accounts separately. Each method has its benefits and

¹⁰ A best practice recommendation is to communicate changes in settlement instructions through an electronic messaging service such as SWIFT and that participants be ready to handle these incoming SSI changes in an automated straight-through manner to minimize possible operational errors during the rekeying of instructions.

- risks. Ultimately, each institution will need to determine an approach that best suits its needs.
29. For the purposes of payment netting, it is recommended that amounts in underlying transactions that are in different denominations of the euro should not be netted, even if both parties use euro nostros. This recommendation is made because most market participants will not have the systems capability to perform netting across the different denominations of the euro. If market participants wish to net the denominations of the euro, the recommended approach would be to convert NCU transactions to euro and to then net in euro.
 30. If an institution chooses to maintain both a euro and an NCU account with the same correspondent in the same location, it is suggested that the operating procedures be reviewed to minimize postings to a wrong account. Institutions should seek to institute a pooling agreement for debit and credit interest with their correspondent. These actions will help reduce operational settlement problems and will insure that, when problems arise, costs are kept to a minimum.
 31. Participants with multiple euro accounts (as a result of opening a euro account with correspondents where they have an NCU account) should specify a single euro account in which to receive euro-denominated payments. Most market participants' systems are capable only of holding a single nostro per currency per counterparty to make payments.

Best Practices for Determining Holiday Calendars

32. Different holiday calendars exist in each of the EMU member states. These differences could create confusion for foreign exchange settlement dates after January 1, 1999. A harmonized definition of the value dates for NCU and euro transactions would allow market participants to set market price quotes for transactions after January 1, 1999, and for settlement dates on transactions conducted in NCUs before to January 1, 1999, that may be converted to euro.
33. There are approximately fifty days where a national holiday takes place in at least one EMU member state. The European Monetary Institute has recommended that the TARGET system form the basis of euro business days. The TARGET system will be open when the RTGS of at least two member states are open. As a result, Christmas Day and New Year's Day will likely be the only holidays for TARGET.¹¹
34. The following are recommendations for best practices in determining holiday calendars after January 1, 1999:
 - a) ***For all new euro trades***, market participants have indicated that they will follow the TARGET business calendar.
 - b) ***For all NCU trades executed after January 1, 1999 and NCU trades that convert to euro after January 1, 1999***
 - i) For interest rate and currency swaps (as opposed to foreign exchange swaps), holiday conventions should be agreed to bilaterally and should be documented in the confirmation. Trades that convert from NCUs will

¹¹ If Christmas Day or New Year's Day falls on a weekend, a holiday will not fall on either the preceding or following weekday, as is currently the practice in certain countries.

follow whatever calendar conventions were applicable when the deal was executed.

- ii) For foreign exchange products (such as options, spot, forwards, swaps, and outright), dates may be agreed on by using the currency calendar of the financial center. Transactions executed after January 1, 1999, should not be done for settlement on holidays in a particular financial center if that date poses a problem for either party to the transaction. The real problem in the foreign exchange markets will be *unofficial holidays*—holidays declared on short notice such as state funerals, weddings, or some other national event. The intent with respect to these events would have to be agreed to bilaterally.
- c) ***NCU trades executed before to January 1, 1999, but that will settle in NCUs after January 1, 1999,*** should follow the existing holiday calendars for the relevant currencies.

Unique Features of Foreign Exchange Options

- 35. Foreign exchange options have unique features that need to be handled differently than spot and forward foreign exchange transactions. Additional information can be found in ISDA's *Economic and Monetary Union: Operations Issues for Derivatives Businesses*, a guide that covers basic operational issues pertaining to all types of over-the-counter derivatives, including foreign exchange options. Copies of this report can be obtained from International Swap and Derivatives Association's (ISDA) web site (www.isda.org).
- 36. For foreign exchange option transactions involving two "in" currencies, the volatility between the currencies will drop to zero. Many systems cannot handle volatilities that are not positive, and they may need to be adjusted to permit zero volatility. Parties to "in"/"in" foreign exchange options may wish to close out these transactions, because they will no longer serve any economic purpose.
- 37. Barrier options present specific problems if barriers are hit or crossed. In particular, rounding rules take on added importance. A best practice is for all rate conversions of barriers options to use the following approach:

The converted barrier should be calculated by applying the official conversion rate, and the barrier should be expressed with enough decimal places (more than the number of decimals in the interbank market) to avoid any possible dispute in reconversion. For the USD/EUR, the relevant would be seven significant figures (for example, 1.234567). As a practical matter, six significant figures could be used in all but disputed cases.
- 38. Changes in quoting conventions will cause up barriers to reverse positions. For example, an up barrier for DEM/USD will need to be converted to a down barrier in USD/EUR.
- 39. A suggested best practice is that parties to barrier options agree in advance on a conversion/rounding approach for use in converting barriers.¹² In addition, as soon as is practical after January 1, 1999, parties to barrier options should confirm the converted barrier levels. To reduce the operational burden this additional step may cause, the parties

¹² Such an agreement can be reached during the initial deal confirmation or in a side agreement between parties.

- may wish to reconfirm only those barrier levels that are close to the current market levels on January 1, 1999. Parties could then confirm the remaining barrier levels at a later date.
40. For average rate options that use NCU market quotations, the euro market quotes should be converted to the NCU on each calculation date, and then averaged. Special care needs to be taken to ensure that the euro quotation convention matches the original quoting convention. For example, if an average rate option was originally equal to the average of the DEM/USD rate, the euro rates should be inverted from USD/EUR to EUR/USD before converting to DEM and averaging.
 41. In all other respects, Foreign Exchange options should be treated the same way as spot and forward foreign exchange, as outlined earlier in this document.
- Other Issues Such As Rounding, Price Sources, and Continuity of Contracts**
42. The rounding rules are well defined in Article 4 and 5 of the 235 Regulation. However, for foreign exchange contracts, it is not clear whether rounding rules apply to the rate or the NCU amount when converting to euro. In one approach, the rate on the foreign exchange deal is converted to euro and then multiplied by the non-NCU currency amount to arrive at a new euro amount. Alternatively, the NCU amount could be converted to euro directly. The best practice is to convert NCU amounts to euro directly wherever possible.
 43. Some foreign exchange contracts¹³ refer explicitly to foreign exchange price sources. Because many of these sources will no longer be available, participants in the foreign exchange market need to determine what price sources they will use. Several industry groups are currently investigating this issue.
 44. Internal credit and market risk limits may need to be redenominated in euro if limits are currently calculated in an “in” currency.
 45. For an interim period, proxy data series are expected to be needed for all credit and market risk algorithms using historical volatilities and correlations until sufficient data has been generated to calculate true euro volatilities and correlations. Many market participants are expected to use DEM or a basket of NCUs as a proxy for euro. Other possibilities are the use of ECU and a derived/synthetic euro. Each institution must decide for itself what is best.
 46. Continuity of contract provisions generally provides that all contracts entered into in an NCU will be valid after January 1, 1999. To date, legislation or regulations that assure the continuity of contracts exist in all European Union jurisdictions (including those that are not “in” countries) as well as in New York and Illinois. If an institution has contracts governed within a jurisdiction that has not adopted laws or regulations to assure continuity of contracts, legal counsel should be sought. It will be necessary to determine if general business law will provide for continuity of contracts, or if a side agreement between parties is required to assure continuity of contracts.
 47. ISDA has created a protocol to provide for continuity of contracts, price source fallbacks, payment netting, and basic definitions for the euro and euro business days as well as other “housekeeping” matters. This protocol serves to amend existing ISDA master agreements on a bilateral basis between parties who have subscribed to the annex. Copies of this protocol can be obtained from ISDA’s web site (www.isda.org).

¹³ For example, certain types of foreign exchange options, and nondeliverable forwards

EMU: Guide to Operational Issues in the FX Market

48. The treaties that create the euro do not provide any provisions for a possible breakup of EMU. If after the start of EMU a member state decides to withdraw, the state will need to issue a new currency. It is not clear whether the new currency would have the same name as the withdrawing NCU. It is also unclear whether obligations that are denominated in the NCU of a withdrawing member state would automatically convert to obligations of the new currency of the withdrawing member state.
49. If an institution runs a collateralized foreign exchange book, a best practice would be to review collateral arrangements including collateral requirements and haircuts used for “in” currency-denominated assets.
50. ISDA and the Bank of England have both produced very informative documents on the introduction of the euro. For more information, see ISDA’s web site at www.isda.org and the Bank of England’s web site at www.bankofengland.co.uk.

Glossary of Terms

Continuity of contract: contracts entered into for transactions denominated in an NCU or that have a payment calculated by reference to an NCU remain legally enforceable after EMU.

Conversion: redenomination of transactions denominated in an NCU or that have a payment calculated by reference to an NCU to euro.

EBA: Euro Banking Association.

EMI: European Monetary Institute.

First weekend/Le weekend: the first weekend of 1999, from January 1 to January 3.

“In” Countries: countries expected to join EMU on January 1, 1999. These countries are Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain.

ISDA: International Swaps and Derivatives Association, Inc.

NCD (legacy currency): National Currency Denomination [of the euro]. The existing national currencies of the “in” countries.

NCU (legacy currency): National Currency Unit. See “NCD”.

TARGET: Trans-European Automated Real-Time Gross settlement Express Transfer system. TARGET will be the link between the national Real Time Gross Settlement systems.

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