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The Euro–Ready or Not: Trading Implications of the New Common Currency

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Abstract

This Essay outlines the specific events leading to the common currency as well as the implications for trading foreign exchange, short-term interest rate futures, and fixed-income securities and futures. It describes the mechanics of the newly formed European Central Bank (“ECB”) and outlines the potential effects on monetary policy and economics in individual countries.

THE EURO—READY OR NOT: TRADING IMPLICATIONS OF THE NEW COMMON CURRENCY

*Kathy Jones**

*Foreword by Alan N. Rechtschaffen***

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FOREWORD

THE SUCCESS OF THE EURO
WITHIN THE CONTEXT OF NEW
REGULATORY INITIATIVES

The European Union (or “EU”) offers unique opportunities and challenges to our global economy. Its effects on international banking and commerce will be profound. From an economic perspective, there are serious questions as to the effects of a united Europe on the world monetary exchange. The introduction of the euro will change markets for capital, including long-term debt issued by sovereign governments, corporations, and other large entities. As the popularity of the euro grows, central banks will face questions as to the significance of the dollar as a reserve currency. The effects of administering and accounting for the new currency may also be profound.

Superimposed on these profound changes are new regulation, reporting, and disclosure requirements for EU Member States. The effect of the euro on international regulation will be monumental. The first challenges to the euro may not come from trading difficulties or administrative reorganizations, but

from disputes over new regulatory frameworks in which to operate the new Europe.

While each Member State continues to issue its own debt, there is likely to be a movement toward standardization and transparency of the government markets to comply with the requirements of a liquid, institutional securities market. Debt likely will be issued on a pre-announced schedule, with standardization as to maturities and coupon payments. There will even be pressure on countries to eliminate nonstandard practices, such as withholding taxes, in order to be considered part of the "benchmark" pool.

Recently, the Finnish government, which takes over the EU presidency in June, opposed the extension of qualified majority voting to income and corporation taxes.¹ According to the Finnish prime minister, income and corporate tax issues must remain sovereign powers and are not a matter of EU majority consent.² The signs of legal and regulatory uncertainty begin to appear. These signs will continue to arise over the coming months and years.

Right now is, therefore, a decisive time for regulation in Europe and in the United States. The future of the international capital markets hangs in the balance. In the United States, regulators are looking at regulating the multi-trillion dollar over-the-counter derivatives³ market place, which is, for the most part, unregulated. Brooksley Born, the Chairperson of the Commodity Futures Trading Commission ("CFTC"), has issued a concept release intimating her desire to expand the CFTC's regulatory authority into the over-the-counter derivatives arena.⁴ Chairman Greenspan of the Federal Reserve, Secretary Rubin of the U.S. Treasury, and Chairman Levitt of the Securities Exchange Commission ("SEC") have announced their opposition to any new

1. Andrew Parker, *Finns Oppose Majority Voting over EU Taxes*, FIN. TIMES, Jan. 15, 1999, at 3.

2. *Id.*

3. Derivatives are contracts whose value fluctuates based on the change in price of an underlying index, bond, interest rate, index, currency, or other investment.

4. Commodity Futures Trading Commission, *Over the Counter Derivatives*, 63 Fed. Reg. 26114 (1998). The Commodity Futures Trading Commission ("CFTC") concept release can be obtained at the CFTC web site, <<http://www.cftc.gov>>, or by contacting the office of the Secretariat, Three Lafayette Center, 1155 21st St., N.W. Washington D.C. 20581, (202) 418-5100.

regulation by the CFTC.⁵ One of the crucial elements of this controversy is the fear that increased regulation will steer derivative business offshore and into safer harbors.

In the wake of the recent long-term capital debacle and bailout,⁶ and possibly in response to the CFTC's overtures, some of the world's largest financial institutions recently reached an agreement to try to set their own industry wide standards for the huge and volatile derivatives market place.⁷ Chairman Levitt participated in the discussions. Alan Greenspan and Robert Rubin have indicated that they are friendly to the idea of industry guidelines as an alternative to increased governmental regulation.⁸ The loosening noose of regulation in favor of self-policing by the industry may make domestic capital markets more attractive to the world financial players.

The repercussions of a new European economy subjected to the organization and regulation of a new European Central Bank will change the playing field for international monetary transactions. The shift in regulatory authority from individual states to a centralized leadership is a wild card that may present a level of uncertainty for business leaders and regulators alike.

Ms. Jones' Essay focuses on the trading implications and possible financial ramifications of a new euro currency. It behooves the reader, however, to consider these changes in the context of regulatory advances and distractions in the United States and throughout the world. Perhaps the deciding factor for the success or failure of the euro as a new and alternative reserve currency lies in the regulatory focus of those who might control its utilization. The economic ramification of regulatory dissonance in the new Europe may secure the U.S. dollar's place as the currency force driving international economics.

5. Stephen Labaton & Timothy L. O'Brien, *Financiers Plan to Put Controls on Derivatives*, N.Y. TIMES, Jan. 7, 1999, at C-1.

6. David Barboza & Jeff Gerth, *Who's in Charge? Agency Infighting and Regulatory Uncertainty*, N.Y. TIMES, Dec. 15, 1998, at C14.

7. *Id.*

8. *Id.*

INTRODUCTION AND HISTORY

On January 1, 1999, Europe's new currency—the euro—made its debut on the global financial scene. On this date, the euro became the common currency for eleven European nations, with more countries scheduled to join in the next few years. European Monetary Union (“EMU”) has been a dream of European leaders, and the euro represents the culmination of many years of preparation.

Europe has a long history of trying to achieve currency stability. As far back as the Latin Monetary Union⁹ in the nineteenth century, there had been efforts to create a single regional currency, but none succeeded. After the Bretton Woods Agreement¹⁰ ended in the 1970s, Europe devised currency bands (commonly called “the snake”) to try to keep the various currencies in narrow bands with limited fluctuations. That attempt ended badly with Britain being forced out almost as soon as it joined. Subsequently, Denmark, Italy, and France left for at least some period of time. Four years after its inception, the snake was really a collection of Deutsche mark-related currencies. Germany, the Benelux countries, and the Scandinavian countries were represented, but no other European nations were. In 1979, the European Monetary System (“EMS”) was devised to bring France back into currency partnership with the rest of Europe. The Exchange Rate Mechanism (“ERM”), an updated version of “the snake,” was created as was the European Currency Unit (“ECU”), a common currency. Britain finally joined the ERM in 1990, only to be forced out in 1992. Despite these setbacks, Europe's politicians have forged ahead with the latest plan—EMU and the euro. In the context of history, the euro is just another step in the evolutionary process of trying to unite Europe.

Preparation for the euro began several years ago when policymakers decided that a common European currency would be the best way to pull together the continent as a global political and economic power. The Treaty on European Union¹¹

9. The Latin Monetary Union was created in 1865 by France, Switzerland, Belgium, Italy, and Greece. See Lawrence Ingrassin, *Exchequered Past*, WALL ST. J., Jan. 13, 1996, at 1 (noting that all prior monetary unions without political structure failed).

10. Bretton Woods Agreement, Act of July 31, 1945, ch. 339, § 14, 59 Stat. 512 (codified as amended in scattered sections of 22 U.S.C.).

11. Treaty on European Union, Feb. 7, 1992, O.J. C 224/1 (1992), [1992] 1 C.M.L.R. 719 [hereinafter TEU] (amending the Treaty establishing the European Eco-

("Maastricht Treaty"), negotiated in 1992, is the EMU's "blueprint." It lays out the rules and regulations of monetary union, stipulating the entry requirements for member countries and the standards of fiscal policy that must be upheld for membership. On the weekend of May 1, 1998, eleven member countries of the European Union met the economic criteria required by the Maastricht Treaty to join together in a common currency. The United Kingdom, Sweden, and Denmark also met the criteria but decided not to join in a currency union at that time. Greece, the only remaining member of the European Union, did not meet the economic criteria. Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain agreed to begin taking the steps necessary to integrate their national currency units ("NCUs") into a single currency unit titled the euro.

This Essay outlines the specific events leading to the common currency as well as the implications for trading foreign exchange, short-term interest rate futures, and fixed-income securities and futures. It describes the mechanics of the newly formed European Central Bank ("ECB") and outlines the potential effects on monetary policy and economics in individual countries.

I. EURO TRANSACTIONS AND TIMETABLE

Non-cash payments in euro began January 1, 1999, and involved setting the rate for all wholesale transactions undertaken in the eleven countries converting to the euro. Wholesale transactions include foreign exchange trading, securities issuance, government debt issuance, payments between suppliers and corporations, and corporate deposits and loans, for example. Credit card or check payments, even at the retail level, might also be included. Euro will not be used, however, in cash payments or payments made with notes and coins right away. Euro notes and coins will not be issued until January 1, 2002, and NCU notes and coins will not be completely withdrawn until July 1, 2002.

conomic Community, Mar. 25, 1957, 298 U.N.T.S. 11, *as amended by* Single European Act, O.J. L 169/1 (1987), [1987] 2 C.M.L.R. 741. The Treaty on European Union amended, *inter alia*, the Treaty establishing the European Economic Community ("EEC Treaty"), renaming it the Treaty establishing the European Community, Feb. 7, 1992, O.J. C 224/1 (1992), [1992] 1 C.M.L.R. 573 [hereinafter EC Treaty], *incorporating changes made by* TEU, *supra*.

Even at the retail level, conversion to the euro is apparent after January 1, 1999. Shop owners post prices in both NCU and euro. Banks offer individuals the ability to carry deposits, write checks, or make credit card charges in euro. The goal is to take every step to make the transition to the common currency as smooth and easy as possible.

It is important to note that the Maastricht Treaty has adopted a *no prohibition/no compulsion* rule between January 1, 1999 and December 31, 2001. This policy entails that no party can be forced or prohibited from using the euro. What this policy implies is that transactions on the books before January 1, 1999 will not automatically convert to the euro; rather, conversion will take place by mutual agreement between parties. This policy will likely result in some uncertainty and discrepancies during the transition period as systems are updated and parties negotiate individual conversions. A summary of the timetable for euro conversion is shown in Table 1.

II. CONVERSION

The irrevocable conversion rates for each participating NCU into the euro were established on Thursday, December 31, 1998. On May 1, 1998, the eleven member countries adopted the bilateral exchange rates on which the irrevocable exchange rates were set. Because the Maastricht Treaty calls for 1:1 conversion between the ECU and the euro, however, and because the ECU includes three non-euro currencies,¹² the exact conversion rates were not determined until December 31, 1998. In other words, the eleven euro countries could have established conversion rates before this date if it were not for the obligation to convert through the ECU, which includes these three non-participating currencies. Table 2 shows which currencies are included in ECU and which ones are included the euro. On December 31, the ECU ceased to exist, and the conversion rates for the first eleven member countries became permanent.

On December 31, 1998, the member countries followed a three-step process to determine the fixed conversion rate to the euro. The first step was to convert each NCU into its exchange rate against the U.S. dollar, using the 11:30 A.M. (CET) official

12. The Greek drachma, Danish krone, and British pound are the three non-euro currencies included in the ECU.

ECU fixing and the pre-announced ERM bilateral central rates. The second step was to calculate the exchange rate of the official ECU, using the rates recorded in the first step. The U.S. dollar/ECU rate is obtained by summing the weighted dollar equivalents of national currency that compose the ECU. The third step was to calculate the official NCU exchange rate against the euro by multiplying the U.S. dollar/ECU exchange rate by each NCU's U.S. dollar exchange rate.

The eleven countries initially participating in the euro agreed to maintain their bilateral exchange rates leading up to the conversion weekend. Fluctuations in the currencies of the three non-participating countries that make up part of the ECU could have caused euro conversion rates to fluctuate a great deal before the conversion weekend; this, however, did not occur.

As a matter of convention, the European Monetary Institute has recommended that the euro become the base currency quoted in currency relationships, so one euro would equal a set amount of another currency. This use of the euro results, however, in changes to current practices for trading in the British pound and the U.S. dollar, so market convention could not be known until trading actually begins. In addition, under the rules for conversion, the euro is expressed in terms of each of the participating national currencies to six significant digits. Note that this rule applies only to "in" currencies; no conventions have yet been established for converting the euro to "out" currencies. Finally, the sub-unit of the euro is the cent, and the plurals of the euro and the cent will be expressed without an "s."

III. ECB AND MONETARY POLICY

The economic and monetary union called for in the Maastricht Treaty¹³ established the European System of Central Banks ("ESCB") to maintain price stability.¹⁴ The ESCB consists of the European Central Bank and the fifteen national central banks ("NCBs").¹⁵ Starting January 1, 1999, a single monetary policy for all eleven members of the EMU was implemented by the ECB instead of each country's individual central banks. The NCBs

13. EC Treaty, *supra* note 11, tit. VI, O.J. C 224/1, at 33-43 (1992), [1992] 1 C.M.L.R. at 636-55.

14. *Id.* art. 4a, O.J. C 224/1, at 9 (1992), [1992] 1 C.M.L.R. at 590.

15. *Id.* art. 106, O.J. C 224/1, at 37 (1992), [1992] 1 C.M.L.R. at 642.

will continue to exist for purposes of executing ECB policies and coordinating with national governments for debt issuance and fiscal policy. The four outlying NCBs continue to maintain independent monetary policy, but it will be in their interest to coordinate with the ECB.

The ECB is divided into two main decision-making bodies, the Executive Board and the Governing Council.¹⁶ The Executive Board will consist of a president, vice president, and four other members who are nominated by a majority of the political leadership of the eleven countries, affirmed by the European Parliament, and later confirmed in writing by political leaders in each country.¹⁷ Board members will serve an eight-year term. The Governing Council will consist of the six Executive Board members and one governor from each of the eleven participating national central banks.

The Governing Council is responsible for various functions: formulating euro monetary policy; e.g., monetary objectives and interest rate targets, adopting organizational rules and procedures for the ECB, deciding ECB financial matters, including holding or transferring central bank reserves to or from the ECB, allocating profits and losses, and conducting money market operations, and adopting regulations, decisions, and recommendations. Most Governing Council decisions are made on a one-person, one-vote basis, with decisions taken by a simple majority. There are some exceptions in which only NCB governors vote on a weighted basis, with decisions taken by a qualified majority. For example, decisions on various financial matters such as transfer of an NCBs foreign reserve assets to the ECB, or allocation of ECB trading profits and losses, are made by qualified majority.

The Executive Board will be responsible for the day-to-day functioning of the ECB. These responsibilities include implementing the monetary policy established by the Governing Council, instructing NCBs, and preparing for Governing Council meetings. Each Executive Board member has one vote and decisions taken by a simple majority.

The Maastricht Treaty defined the ECB's primary goal as

16. *Id.* art. 109a, O.J. C 224/1, at 38 (1992), [1992] 1 C.M.L.R. at 645.

17. *Id.*

price stability.¹⁸ This goal was later narrowed to monetary targeting and direct inflation targeting. A preliminary framework for ECB operation already has been adopted and consists of three monetary policy instruments—open market operations, standing facilities, and a minimum reserve requirement.

The open market operations will consist of (1) liquidity providing reverse transactions with a weekly frequency and a maturity of two weeks, (2) longer-term refinancing operations with a monthly frequency and a maturity of three months, (3) fine-tuning operations, and (4) structural operations such as securities purchases. The standing facilities will include a marginal lending facility to obtain overnight liquidity from the NCBs against eligible assets and a deposit facility to make overnight deposits with the NCBs. These facilities are designed to provide a ceiling and floor on the overnight funds rate and can be compared to the U.S. federal funds markets. Finally, the ECB will set a reserve requirement for all banks in the eleven euro countries of 1.5%-2.5% of bank funds, including deposits, debt securities issued, and money-market paper. The reserves will be deposited in interest-bearing accounts with the NCBs.

Decisions taken by the ECB are legally binding in all Member States and on all persons in those Member States. In effect, individual national governments will no longer be able to make unilateral decisions on monetary policy. As a result, national governments in Member States will be limited to fiscal policy decisions to counteract any variations in their national economic situation due to euro monetary policies. Even fiscal policy could be somewhat restricted due to Treaty guidelines on the size of national deficits and debt levels. This dilution of national control over economic policy has sparked a great deal of debate over the smoothness of the transition to the euro.

IV. IMPLICATIONS FOR FOREIGN EXCHANGE

A. *Legacy Positions*

Due to the *no prohibition/no compulsion* rule, positions in legacy currencies (NCU of the eleven participating Member States) that mature after the conversion weekend will not be automatically converted to euro. Parties, however, can mutually agree to

18. *Id.* art. 105, O.J. C 244/1, at 36 (1992), [1992] 1 C.M.L.R. at 641.

convert such positions to euro, and many such agreements already have taken place. Any agreement to convert legacy positions to euro, whether they are for swaps, forwards, or options, must be confirmed by both parties in writing. The one exception to noncompulsory automatic conversion is the ECU, which was converted 1:1 into the euro according to the Maastricht Treaty.

Currency futures, such as the Deutsche mark, French franc, and ECU contracts listed on the Chicago Mercantile Exchange ("CME"), will be subject to specific exchange announcements for each contract. As of late November, the CME had plans to convert only the outstanding ECU contracts automatically to euro. The current ECU futures contract will then be renamed "Euro FX." The CME will continue to list Deutsche marks, French francs, and possibly other Deutsche mark cross-rate products until July 1, 2002. The CME now lists Euro FX cross contracts (i.e., Euro FX/Japanese yen cross and Euro FX/Swiss franc cross) as of January 11, 1998.

B. *New Cross Rates*

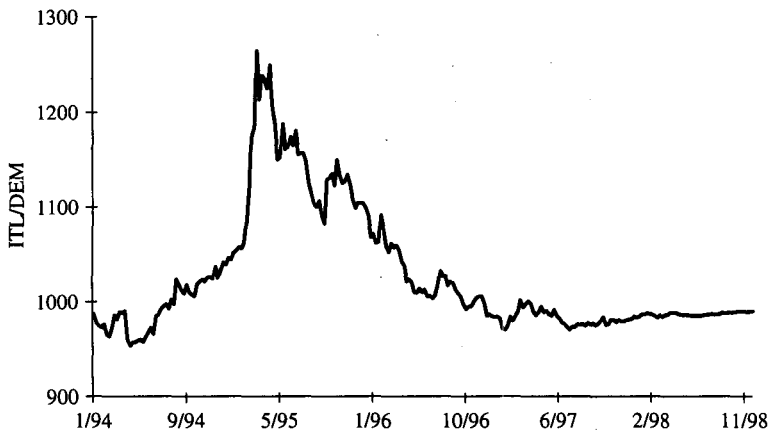
There continues to be considerable disagreement over whether speculative trade will continue in NCUs versus other currencies after the conversion weekend. Most active dealers and exchanges have stated that they will continue to maintain active markets in the legacy NCUs until they lose legal tender status on July 1, 2002. It is the stated intent of the participating countries, however, to maintain the conversion exchange rates at all costs. The Member States adopted a Stability and Growth Pact¹⁹ that provides for sanctions against countries that run ex-

19. The Stability and Growth pact is composed of one political recommendation and two regulations. Council Recommendation of 7 July 1997 on the broad guidelines of the economic policies of the Member States and of the Community, O.J. L 209/12 (1997); Council Regulation No. 1466/97 of 7 July 1997 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies, O.J. L 209/1 (1997); Council Regulation No. 1467/97 of 7 July 1997 on speeding up and clarifying the implementation of the excessive deficit procedure, O.J. L 209/6 (1997); see Roger J. Goebel, *European Economic and Monetary Union: Will the EMU Ever Fly?*, 4 COLUM. J. EUR. L. 249, 310-13 (1998); see also Jan Meyers & Damien Levie, *The Introduction of the Euro: Overview of the Legal Framework and Selected Legal Issues*, 4 COLUM. J. EUR. L. 321, 330-31 (1998) (discussing two components of Stability and Growth Pact). The European Council issued a resolution on the Stability and Growth Pact that set forth firm commitments of the Member States, the Commission, and the Council re-

cessive deficits after the euro launch.

The firmness of commitment to the plan by these countries remains to be seen. It is clear, however, that volatility between NCUs has all but disappeared. As illustrated in Figure 1, the Deutsche mark/Italian lira exchange rate converged going into the first weekend in May and has since remained stable.

FIGURE 1
Exchange Rate: Deutsche mark per Italian lire



Source: Reuters

One complication in calculating the new cross rates between the “in” currencies results from the requirement that they be calculated through the euro and rounded to the nearest sixth digit. The procedures for conversion have been laid out in European Council Article 235. The conversion rate shall be expressed as one euro in terms of each NCU taken to six significant digits (e.g., 1 euro = DM 1.96953). The conversion rates shall not be rounded or truncated when making conversion calculations. Actual amounts to be paid or accounted for after a conversion must be rounded up or down to the nearest sub-unit, with amounts exactly in the midpoint rounded up. Conversion between two NCUs within the euro must be done via the euro. This process is known as triangulation and can be illustrated as follows.

garding the implementation of the pact. See Resolution of the European Council on the Stability and Growth Pact of 17 June 1997, Amsterdam, O.J. C 236/1 (1997).

First, to convert one national currency (e.g., the Italian lira) into another national currency (e.g., the Deutsche mark), it is necessary to first convert the Italian lira into euro (e.g., L 25,000,000 * 1,949.84 L/euro = euro 12,821.56484635 as an unrounded calculated intermediate euro amount). Second, it is permissible to round the intermediate euro amount to no fewer than three decimals (e.g., the above amount could be rounded to euro 12,821.565 or euro 12,821.5648, but not euro 12,821.56). It is not necessary to record this intermediate amount. Because different parties may use different rounding amounts, however, recording the intermediate step may help resolve discrepancies in conversion amounts. Third, the intermediate euro amount is then converted into Deutsche marks, rounded to the nearest currency unit (e.g., euro 12,821.565 x 1.96953 DM/euro = DM 25,252.4470668 as an unrounded calculated amount, rounded to DM 25,252.45. Note that if the unrounded intermediate amount of euro 12,821.56484635 were used in the calculation, then the result would be an unrounded DM 25,252.45661183, rounded to DM 25,252.46).

These rules of conversion apply in all fifteen EU Member States, including the "opt-out" countries. The rounding rules apply solely in the context of conversion between the euro and participating NCUs or between participating NCUs. They do not apply in other contexts, such as calculation of interest payments on loan amounts. Conversion between the euro or the NCUs and non-euro currency units, for example the British pound, Japanese yen, and Swiss franc, will take place in the same way that foreign exchange transactions are currently carried out. Article 235 does not apply.

C. Trading the Euro Versus Other Currencies

The pre-conversion ECU may not be a good proxy for the euro's future performance. This discrepancy can be seen by examining the relationship between the Deutsche mark and the ECU over the last few years (Figure 2). Even after the May 1, 1998 weekend, there was quite a bit of volatility in the relationship between the Deutsche mark and the ECU. This volatility was largely due to the influence of the British pound, which represents about thirteen percent of the ECU's value.

FIGURE 2

Exchange Rate: Deutsche mark per European Currency Unit

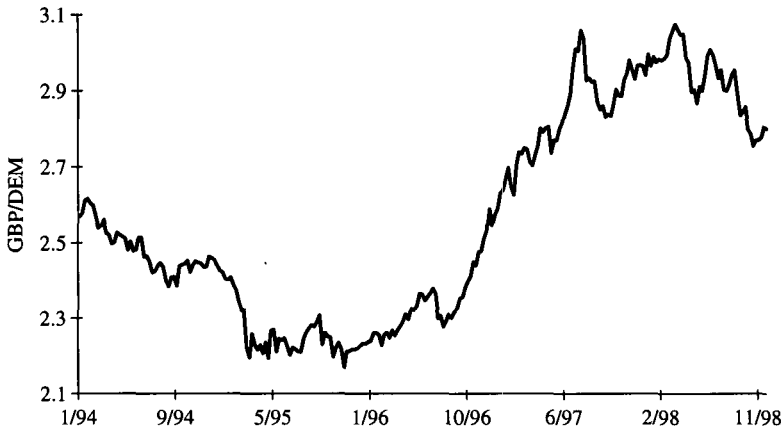


Source: Reuters

As Figure 3 shows, a glance at the British pound/Deutsche mark cross rate during this period makes this influence even more evident.

FIGURE 3

Exchange Rate: Deutsche mark per British pound



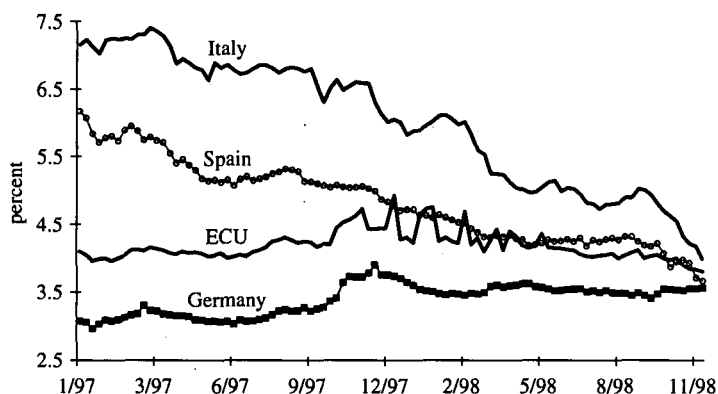
Source: Reuters

V. IMPLICATIONS FOR SHORT-TERM INTEREST RATES

By definition, a common currency leads to a common monetary policy and a single money market rate. As individual NCBs

lose their ability to control the money supply, the short-term interest rate will converge in all eleven participating countries. As can be seen in Figure 4, three-month money market rates already have converged substantially. After the conversion weekend, there is now a single rate, which is slightly higher than the rates prevailing for the euromark and the Paris International Bank Offered Rate²⁰ ("PIBOR") but lower than those for the eurolira and Madrid International Bank Offered Rate ("MIBOR").²¹ This equivalence can also be seen in the prices currently quoted for the March 1999 euromark, PIBOR, and eurolira futures contracts.²²

FIGURE 4
Convergence of Money Market Rates



Source: Wharton Economics Forecasting Associates; Reuters

There is some controversy over whether the benchmark rate that replaces the ECU London International Bank Offered Rate²³ ("LIBOR")—used as a benchmark in swaps and futures markets—will be the British Bankers Association ("BBA") euro

20. The Paris International Bank Offered Rate ("PIBOR") is an interest rate futures contract. It represents short-term interest rates on U.S. dollar-denominated deposits outside the United States.

21. The Madrid International Bank Offered Rate ("MIBOR") is an interest rate futures contract. *See supra* note 20.

22. For example, on November 20, the March euromark settled at 96.61, the PIBOR at 96.60, and the eurolira at 96.59.

23. The London International Bank Offered Rate ("LIBOR") is an interest rate futures contract. *See supra* note 20.

LIBOR or the newly-created European International Bank Offered Rate (“EURIBOR”).²⁴ Like other LIBOR rates, BBA LIBOR will be based on a daily survey of sixteen major financial institutions in London. Current plans for EURIBOR call for a survey of fifty-seven financial institutions in all eleven financial centers. Both rates will be calculated on an actual/360-day count and be based on T+2 settlement.

Many market participants expect EURIBOR to be slightly higher than euro LIBOR because there are many less creditworthy banks included in the fifty-seven financial institutions surveyed for the former rate. In addition, deposits made in euro-country banks will be subject to a reserve requirement. It is likely that the EURIBOR-setting procedure will be revised if there is a substantial divergence from the euro LIBOR.

After the conversion weekend, the euromark, PIBOR, euro, eurolira, and MIBOR futures contracts are all effectively identical and interchangeable. There is a slight risk that an individual country might break away from EMU and revert to its former NCU and money market rate. The market, however, is currently discounting this risk to nearly nothing. For example, the June 2000 euromark and eurolira futures contracts are priced within two basis points of each other. In general, the European futures exchanges have adopted plans to convert their short-term interest rate futures to euro interest rate futures even before the conversion weekend. Each exchange has different plans, ranging from forced conversion at the London International Finance Futures Exchange (“LIFFE”), the French International Futures Exchange (“MATIF”), and the Spanish Finance Futures Exchange (“MEFF”) to spread trading at the Eurex. Following is a general outline of each exchange’s plans. Holders of short-term interest rate futures positions are advised to check with the individual exchanges for more detailed procedures.

A. LIFFE

LIFFE implemented a mandatory conversion process of its euromark and eurolira futures contracts into euro LIBOR futures during the weekend of January 23-24, 1999. On Friday, January 22, LIFFE ensured that the settlement prices for the

24. Similar to PIBOR, LIBOR, and MIBOR, the European International Bank Offered Rate (“EURIBOR”) is an interest rates futures contract. *See supra* note 20.

euromark, eurolira, and euro LIBOR futures contracts were identical across all maturities and across all strike prices for the options. The eurolira and euromark contracts were to be converted into euro at the fixed NCU rates determined on the January 1 conversion weekend. Conversion occurred at the member firm position level unless a member requested conversion be done at the client level. Fractional contracts resulting from the conversion process were rounded to the nearest whole lot, with resulting odd lots allocated to the largest NCU money market futures or options position at the member firm account position level.

B. *Eurex*

Eurex²⁵ has introduced several euro short-term interest rate futures as well as one-month and three-month contracts for both EURIBOR and euro LIBOR. Until the conversion weekend, the contracts were settled in ECU. Traders can use normal spread trading procedures to convert their euromark positions to euro interest rate positions. The exchange will enable simultaneous trading of both euro and euromark futures at least until the March 1999 expiration. As of the conversion weekend, the euromark contract is considered a foreign currency future, and its variation margin will be converted daily from Deutsche marks to euro at the conversion rate.

C. *MATIF*

The MATIF has decided to guarantee conversion of all PIBOR futures into the new euro interest rate futures. It introduced a three-month EURIBOR contract settled in ECU until the conversion weekend and in euro afterward. PIBOR contracts continued to trade until the conversion weekend. After the conversion weekend, these contracts no longer trade, but they will continue to be cleared until June 1999 with margin requirements converted to euro. PIBOR positions can be rolled at the conversion rate into the new EURIBOR contracts via either the exchange's matched book conversion, which matches aggregate member conversion orders, or the voluntary conversion facility, in which MATIF takes the other side of the conversion

25. The Eurex was formerly the Deutsche Terminbörse and the Swiss Options and Financial Futures Exchange.

trade. The PIBOR contracts still open on June 14, 1999 will be automatically converted into euro futures, with odd contracts rounded up to the nearest whole contract.

D. *MEFF*

The MEFF will adopt a “big bang” approach to the introduction of its EURIBOR contract. On the conversion weekend, all outstanding MIBOR futures positions were converted automatically to EURIBOR positions at the announced peseta/euro conversion rate. Because the new EURIBOR contract is larger than the MIBOR contract, the resulting fractional contract positions will be cash settled. All outstanding MIBOR orders were automatically canceled, and new EURIBOR orders must be reentered after the conversion weekend.

E. *Short-Term Interest Rate Trading Strategies*

The new euro LIBOR contracts create several trading possibilities for short-term interest rate futures. For example, it is possible to speculate on whether the United Kingdom will join the EMU or on how the newly-created single monetary policy will fare versus more-established monetary policies. In addition, because strips of euro LIBOR contracts are available until 2002, it is possible to take positions that can profit from any steepening or flattening of the new euro yield curve. It is perhaps easiest to undertake any of these trades on LIFFE, where the euro LIBOR contract trades alongside short sterling, the euroswiss, and the euroyen. Here’s how some of these trades might look:

1. If a trader believes that the United Kingdom will join the EMU by 2002, as some pundits are predicting, buying a deferred short sterling futures contract and selling a deferred euro LIBOR contract would be a possibility. Because British rates are higher than the prevailing euro rates, British rates are likely to fall if they converge to euro rates. LIFFE cross-margins the short sterling and euro LIBOR contracts at a thirty percent reduction in initial margin. The trade would be ratioed at four short sterling contracts to three euro LIBOR contracts.
2. A trader who thinks that the ECB will be forced to tighten monetary policy to maintain the strength of the euro, resulting in an increase in euro rates versus U.S. dollar rates could

buy a eurodollar futures contract on the CME and sell a euro LIBOR contract on LIFFE. The ratio would be about twelve eurodollar futures for ten euro LIBOR futures; there is no cross-margining between the two exchanges.

3. Finally, it is possible to take positions that profit from changes in the euro yield curve. The curve is very flat with three-month rates predicted by the March 1999 future of about 3.40% and three-month rates predicted by the March 2002 future of about 4.10%. Traders betting on a steepening of the curve could buy the March 1999 euro LIBOR future and sell the March 2002 euro LIBOR future. Current spread margining for this trade at LIFFE is fifty percent of initial margins for each contract.

VI. *FIXED-INCOME TRADING IMPLICATIONS*

Introduction of the euro also will change the markets for long-term debt issued by sovereign governments, corporations, and other large entities. First, long-term debt denominated in euros will become much more attractive to a wide variety of institutional investors. In the past, debt issued in any currency other than the U.S. dollar—and possibly the Japanese yen and Deutsche mark—was not traded in markets big enough or liquid enough to attract large institutional investors. In addition, many pension plans, insurance companies, and mutual funds were subject to restrictions on currency risk. Elimination of currency risk for investments within fellow euro-zone countries will nullify these restrictions and vastly increase the number of investments that are eligible for these portfolios.

Second, the euro's introduction should result in an increase in the European long-term debt market, making it the largest in the world. The Bank for International Settlements states that the nominal value of the government debt outstanding in the eleven participating nations represents about forty-two percent of total Organization for Economic Cooperation and Development ("OECD") government debt compared with twenty-four percent for the United States and sixteen percent for Japan. Of the euro countries, Germany was the largest issuer, with an eighteen percent share of OECD total debt, with France close behind at ten percent. Potential growth in the long-term European debt market is large. Because long-term NCU debt has not been at-

tractive to investors, Europe has been much more reliant on short-term bank lending than the United States. The Bank of England states that roughly half of liabilities in the eleven EMU countries consist of bank borrowing as opposed to less than twenty-five percent for the United States. If even a fraction of borrowers switch to the long-term debt market, then issuance levels could explode.

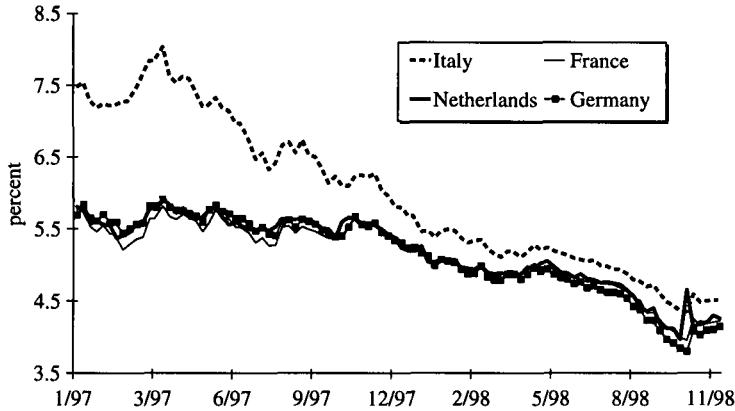
Third, issuance of debt by individual governments within the EMU will decline as forces in the Maastricht Treaty put pressure on government borrowing. Adoption of the Stability and Growth Pact will make it difficult for nations to borrow their way out of economic problems. In addition, a nation's new inability to monetize its own debt will force heavy borrowers to pay a risk premium for excessive issuance.

Finally, although each Member State will continue to issue its own debt, there is likely to be a movement toward standardization and transparency of the government markets to comply with the requirements of a liquid, institutional securities market. Debt likely will be issued on a pre-announced schedule, with standardization as to maturities and coupon payments. There will even be pressure on countries to eliminate nonstandard practices, such as withholding taxes, in order to be considered part of the "benchmark" pool.

As a result of these anticipated changes to the fixed-income market, there already has been tremendous convergence in the long-term interest rates of the eleven EMU countries despite the differences in debt levels. This convergence can be seen in Figure 5. For example, Italy's public sector debt represents 122% of gross domestic product ("GDP"), compared to the Maastricht Treaty's criterion of sixty percent and Germany's level of sixty-two percent. Obviously, for this convergence in long-term rates to continue, Italy will have to continue to reduce public sector debt levels and to improve its creditworthiness.

The markets have yet to determine the new euro fixed-income "benchmark" yield curve. Debt markets in France, Germany, and the Netherlands are all top-tier credits, and their yields have converged to be nearly identical. The Netherlands, however, continues to have a relatively high seventy percent debt-to-GDP ratio, and the coupons of its outstanding debt are higher, reflecting earlier battles with inflation. It is likely that

FIGURE 5
Convergence of Government 10-Year Bond Yields



Source: Wharton Economics Forecasting Associates

French/German debt issues will be regarded initially as the “on-the-run” issue pool. Indeed, MATIF and Eurex have announced that they are combining their efforts to develop a new group of multi-issuer euro government bond futures contracts.

A. Mechanics of Fixed-Income Conversion

The eleven members of EMU already have announced that all new government debt will be issued in euro. In addition, all eleven governments have agreed to “reconvention” their outstanding and future government debt to be denominated in euro and to comply with new standards, including day counts of Actual/Actual annual coupons,²⁶ pricing in decimals, and European business days rather than local business days. These changes occurred on the first business day after the conversion weekend, creating a great deal of systems and back-office challenges.

Most non-governmental issuers also have announced that they will redenominate their outstanding debt. The International Primary Markets Association, however, has asked its members to postpone this redenomination until after the conversion weekend to give back-office operations additional time to prepare for the conversion.

26. Actual/Actual refers to actual days to payment over actual days in a year.

B. *Mechanics of Fixed-Income Futures Conversion*

Each of the European futures exchanges has announced plans both to deal with the delivery of redenominated government bonds into NCU-denominated futures contracts after the conversion weekend. They have also announced plans to trade euro-denominated government bond contracts. The exchanges differ in the type of government bond contracts traded—whether multi-issuer or single issuer—and on the timing of the transition.

1. LIFFE

LIFFE plans to focus on creating single-issuer government bond futures, denominated in euro, to replace each of its existing bund and BTP contracts.²⁷ It also has discussed the possibility of creating a multi-issuer contract at some point in the future. A LIBOR-financed bond (“LFB”) futures contract will be denominated initially in Deutsche marks and later in euro. This contract will be based on the five- and ten-year euro swap curve and will be cash settled.

LIFFE has lira-denominated BTP and Deutsche mark-denominated bund contracts for March 1999 delivery. These contracts are denominated in euros beginning with the June 1999 listings. Conversion to euro-denominated contracts will take place by rolling from March to June via the normal speed trading facility (“STF”), with a temporary moratorium on exchange fees for these rolled contracts. The ratio of these March contracts to the June contracts will depend on the relative sizes of each contract, the relative basis point values, and the fixed exchange rates. For the March 1999 delivery, newly-redenominated deliverable government debt will be delivered in accordance with the following formula: the June 1999 BTPs and bunds have a nominal value of euro 100,000, with a tick size of ten euros. Margining and mark-to-market were done in ECUs prior to the conversion weekend.

2. Eurex

Like LIFFE, Eurex is trading its March 1999 delivery bund

27. BTP are ten-year German government bonds.

and BOBL²⁸ contracts in both Deutsche marks and euro. Prior to the conversion weekend, euro-denominated contracts were traded in ECU. Traders can convert their positions on the spread trading facility on the exchange. Contracts starting with June 1999 will be denominated in euros only. The list of qualified German government debt deliverable into the contract will remain the same. Redenominated debt, however, will be delivered into the Deutsche mark-denominated bund and BOBL contracts using the fixed exchange rates to calculate nominal amounts. The exchange continues to explore alternatives for developing a multi-issuer, euro-denominated benchmark contract.

3. MATIF

The MATIF is trading only a euro-denominated Notionnel future for March 1999 delivery; the December 1998 Notionnel future is the last denominated in French francs. The March 1999 Notionnel contract is a single-issuer contract, with a deliverable pool consisting of French government bonds ("OATs"). The exchange will introduce a contract that will include both bunds and OATs when MATIF decides that sufficient convergence has taken place, possibly as soon as the June 1999 contract introduction. The MATIF already trades a multi-issuer ECU bond contract. Beginning with the March 1999 ECU contract, however, the deliverable pool will consist only of sovereign debt issued in the EMU zone. The MATIF also has decided to try to provide for trade between "in" and "out" country debt by introducing two new gilt contracts—a five-year and a ten-year. Traders wishing to speculate on convergence of British debt to the EMU debt levels can take a position in the gilt contract and an opposite position in either the euro Notionnel or the ECU contract.

4. MEFF

The MEFF merely redenominated its existing bonds contracts into euro on the conversion weekend. The odd lots that result because the euro-denominated contract will be larger than the peseta-based contract will be cash settled. All existing orders

28. BOBL are five-year German government bonds.

on MEFF bonds were canceled and must be reentered as euro-denominated orders.

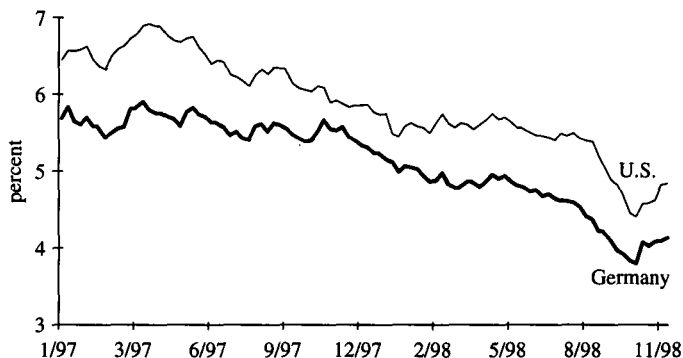
VII. LONG-TERM INTEREST RATE TRADING STRATEGIES

Introduction of the euro creates several new trading strategies for fixed-income instruments. Unlike the case in short-term interest rates, divergence between the long-term interest rates of the EMU member countries is a very real possibility because the issuers will have varying credit ratings. For example, Germany has a rating of AAA while Spain and Italy have an AA rating. Assuming that LIFFE will continue to list the BTP contracts, a trader could buy a new euro benchmark government bond contract, such as the newly-redenominated bund contract, and short the BTP. The contract ratio would depend on the duration of the cheapest-to-deliver bonds in each contract. There will no longer be any need to adjust for the different sizes of the nominal contract amount, as both should be denominated in euro 100,000.

In addition, introduction of a pool of similarly rated, euro-denominated government debt will likely have a great effect on traditional benchmark bonds such as U.S. Treasury bonds and Japanese government bonds. The availability of alternative investments is likely to put pressure on U.S. interest rates. The ECB might, however, adopt a tight monetary policy to ensure the strength of the euro. U.S. ten-year rates are currently about 4.89% versus euro benchmark rates near 4.15% (Figure 6). A trader who believes that the budget pressures of the EMU will force euro rates higher could buy a ten-year note futures contract at the Chicago Board of Trade and sell a new euro-denominated benchmark contract on any of the European exchanges. The ratio will depend on the duration of the two cheapest-to-deliver bonds and the conversion rate for the euro to U.S. dollar that will prevail after the conversion weekend.

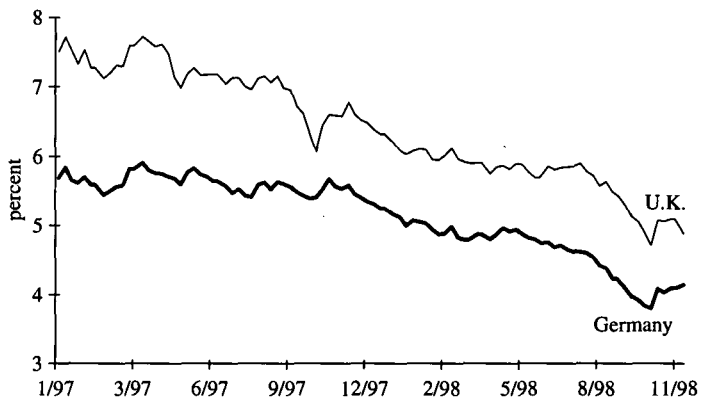
Finally, the United Kingdom could face a dramatically less favorable borrowing climate as an "out" country than it has in the past as a single European borrower nation. The United Kingdom currently has an inflation rate of about 3.1% versus the eleven EMU Member State rate of about one percent; the United Kingdom's ten-year yields are higher, with a rate of 4.85% (Figure 7). In addition, the United Kingdom's debt-to-

FIGURE 6
10-Year Bond Yields: Germany and United States



Source: Wharton Economics Forecasting Associates; Federal Reserve Board

FIGURE 7
10-Year Bond Yields: Germany and United Kingdom



Source: Wharton Economics Forecasting Associates

GDP ratio is one of the lowest in the European Union, at fifty-three. A trader who believes that British debt will become less desirable as a result of its “out” status could buy a euro-denominated benchmark futures contract and sell a LIFFE gilt contract. Again, the ratio would depend on both the duration of the cheapest-to-deliver bonds as well as the conversion ratio between sterling and the euro.

VIII. *WHAT HAPPENS NEXT?*

Many issues after the conversion weekend have yet to be resolved. Following is a summary of some of the key outstanding questions:

- What specific actions will be taken by the ECB?
- Will the ECB focus more on money supply or on inflation?
- What will be the exact nature of the ECB's open market and standing facilities (e.g., frequency, type of transactions, quoted deposit, and lending rates)?
- What will be the attitude of the "out" countries toward EMU?
- Will the Stability and Growth Pact involve sanctions against countries that fail to rein in their budget deficits, in particular, Italy, or that have an inflation problem, e.g., Ireland?
- Which short-term rate will become the standard for swaps and other futures—EURIBOR or euro LIBOR?
- What will be the exact design of the new euro long-term government bond futures contracts and which contract will become the most liquid?

IX. *THE EURO: STRONG OR WEAK?*

The most frequently asked question about the euro is: Will it be strong or weak? The secondary issue, of course, is whether it will last. Proponents of the euro argue that it will be no less than the currency of the twenty-first century and rival the U.S. dollar as the world's reserve currency. Skeptics insist that the whole scheme is doomed to failure because of Europe's political history.

Europeans favoring the euro point first and foremost to the size and scope of the economic region that the currency will represent. As Table 3 illustrates, the collective population, GDP, and share of world trade of the fifteen EU countries is slightly larger than the United States, while foreign reserves are significantly higher. Even after adjusting these figures to represent the initial eleven countries switching to the euro, the numbers point to Europe as a large, populous economic region with a major share of world trade. Moreover, the fifteen EU countries collectively run a large current account surplus, which should be seen as a net positive for the common currency. Currently, the surplus is about two percent of GDP versus the U.S. current account

deficit of three percent of GDP. As a greater share of world trade becomes denominated in euros, there will be greater need to hold the currency.

In addition, advocates for the euro argue that a wide range of economic benefits will accrue and make the currency strong. These benefits include increased productivity, investment, and efficiency in the European economies and far more stable economic policies. In addition, the ECB arguably will be the most independent central bank in the world because it is not dependent on any political entity for its existence. The anticipated growth in breadth and depth of Europe's financial markets rising from a single currency would provide another source of rivalry for the U.S. dollar. Some argue that central banks will increasingly shift reserves out of the dollar and into the euro. Finally, the euro is seen as an outgrowth of the changing dynamics of the information age, where capital flows know no borders or restrictions and the nation-state is seen as being in decline, superseded by technology.

Skeptics point to Europe's historical lack of success in achieving unification. They also point out that the size of the economic region does not determine a currency's strength or weakness. After all, the Swiss franc has traditionally been a strong currency even though Switzerland is a relatively small country. What will determine the euro's strength or weakness is the willingness of investors to hold it over the long run. In that regard, the prospects for the euro remain up in the air and ultimately dependent on the region's politics.

One of the questions skeptics continue asking is: Will the eleven (and eventually fifteen) Member States be able to abide by the terms of the Maastricht Treaty over time? Already there are some calls for changes to the stability pact, which was designed to keep the euro stable and strong by imposing strict requirements on member countries to keep deficits and inflation under control. The European governments who put the plan into place in 1992 were mostly conservative. In the last few years, control of those European governments has been replaced by left-leaning Socialists. With a higher propensity to intervene in the marketplace and in the economy in general, these new governments may decide to loosen the fiscal requirements of the Maastricht Treaty, thus threatening the agreement's foundation.

As for a swift movement out of U.S. dollar reserves and into the euro by major central banks, there is probably far too much optimism on the part of euro proponents. Central banks that hold large reserves are likely to take a slow approach in increasing the share of reserves to the euro from the U.S. dollar. Central banks are conservative institutions and would not want to propel the world into a financial crisis by a sudden shift in reserve holdings, which could put the U.S. dollar into a downward spiral. They are likely to take some time to assess the stability of the new currency before increasing their holdings, as would any conservative investor. Moreover, the major advantage of a reserve currency is also ultimately its undoing. The seniorage that reserve currencies enjoy—whereby the country can easily run deficits because foreign investors will hold their debt in reserve—typically leads to the currency's downfall. The destiny of most reserve currencies has been to start strong and to decline over time. That was the case for the British pound from the mid-nineteenth century onward and for the U.S. dollar since it was allowed to float in the 1970s.

Although the euro may be the currency of the new “information age” where borders matter far less than in the past, that remains to be seen. A successful major currency never has been launched without a strong central government, typically one with a strong military system. Moreover, there never has been a successful currency launched without some backing by metal, usually gold. Perhaps rather than being the currency of the new information age, the euro is simply the latest in the evolution of paper currencies.

My view is that the euro will most likely start out on a strong note but eventually will be tested. At some point, one or a few Member States probably will fall out of line with the restrictions of monetary union. If the euro can survive this test, then its prospects will be good. It is worth noting that there is no provision in the Maastricht Treaty for a Member States to exit EMU.

What I can say with certainty is that the economic and monetary union brought about by the Maastricht Treaty will result in some of the most significant changes to the economic and political landscape seen this century. Traders who are prepared for the changes can profit from the tremendous number of new opportunities that are created in the foreign exchange, money, and fixed-income markets.

*FREQUENTLY ASKED QUESTIONS REGARDING
EUROPEAN MONETARY UNION*

What does European Monetary Union entail?

A new currency, the euro, was introduced with the onset of EMU. This currency is the European Union's future single currency, manifested by the Treaty on European Union and signed by the Member States in the Maastricht Treaty in February 1992. EMU also means a single monetary policy, a single foreign exchange policy, and controls on government borrowing.

Which countries will be participating in EMU?

Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain participated in EMU at its start on January 1, 1999. Denmark, Sweden, and the United Kingdom chose not to participate in EMU at that time. Greece, the only remaining member of the European Union, did not meet the Maastricht Treaty criteria required to qualify for EMU.

When will the euro arrive?

The euro has been a legal currency since January 1, 1999, and can be used in financial markets and for a range of company activities. The bilateral exchange rates of the participating countries were fixed in May 1998 and came into effect on the conversion weekend. Even though the euro will be Europe's currency, however, it will not be available in notes and coins until January 1, 2002.

*How can the euro be a real currency from January 1, 1999,
when it will not exist in the form of notes and coins until
January 1, 2002?*

Monetary union could begin on January 1, 1999 because many economic activities are rendered without cash. Transactions in stock markets and markets in which government bonds are traded can be completed and settled in euro without euro notes and coins.

Can the euro be used before January 1, 2002?

The euro cannot be used in any transactions that require cash before that date. Banks may allow individuals to hold a euro account, even though it may not be very useful until the notes and coins are circulated.

Who will use the euro during the transition period between January 1, 1999 and January 1, 2002?

International financial markets will use the euro instead of the currencies that it replaces from January 1, 1999. Some bonds and equities previously in national currencies will be traded in euro. Governments of participating countries will issue debt in euro and convert existing debt. Some multinational firms operating in Europe intend to use the euro early on to simplify their accounts and finances. They might ask their suppliers to use the euro also.

Banks in participating countries must make conversions in certain circumstances between national currency units and euro. Some banks may offer euro accounts for businesses, but most retail banks expect to run most services in national currencies during this period. Retailers and small businesses will not use the euro during the transitional period. Some businesses with cross-border operations may want to be invoiced or paid in euro.

When are all national currencies expected to be out of circulation?

National banknotes and coins will be withdrawn from circulation between January 1, 2002 and July 2002.

Why is Europe's future single currency called the "euro" and not the ECU?

Euro was the chosen name by the heads of the European Union and the participating governments. The Maastricht Treaty stipulates that the ECU must convert one-to-one to the euro on January 1, 1999.

The value of money can be sharply reduced by rising prices. Who will take care of the euro and protect its value?

The European Central Bank is responsible for monetary policy and backing the euro.

How will single monetary policy be set?

The ECB will set short-term rates for the euro in order to control inflation. The ECB will be an independent central bank, so decisions will be made by central bankers, not politicians. The interest rate set by the ECB will be used as the basis for commercial interest rates.

What about foreign exchange policy?

Together with the finance ministers of the participating countries, the ECB will decide on euro foreign exchange policy toward other currencies. The ECB will have the ultimate responsibility for inflation and interest rates, which are usually the most important factors in determining longer-term exchange rates.

TABLE 1

Timetable of Events

- July 1, 1990* Stage One begins with the removal of exchange controls, the inclusion in principle of all currencies in the narrow band of the Exchange Rate Mechanism (“ERM”), and measures to encourage convergence.
- December 1991* Heads of government agree on Maastricht Treaty.
- February 1992* Maastricht Treaty signed, establishing the goal of European Monetary Union (“EMU”).
- January 1, 1994* Stage Two begins. European Monetary Institute is created and steps are taken to make central banks independent of government.
- December 1995* The name “euro” is agreed for single currency.
- May 1998* EMU commences. Heads of state decide which countries qualify for EMU, fix bilateral conversion rates, and agree to maintain their economies in line with the Maastricht Treaty convergence criteria. European Central Bank (“ECB”) members are nominated and approved by European Parliament.
- January 1, 1999* Stage Three begins. Monetary union commences with the irrevocable fixing of the conversion rates of the countries qualified for EMU. The ECB initiates single monetary policy and foreign exchange rate policy conducted in euro. New tradable public debt will be issued in euro. The ECU basket ceases to exist (i.e., 1 euro = ECU 1). National currencies continue to have legal force. ECB uses only the euro in its money market and foreign exchange operations. TARGET system comes into operation for cross-border settlements.
- January 1, 2002* New euro notes and coins are introduced and begin circulating (“E-Day”).
- July 1, 2002* End of transition phase. National currency units (“NCU”) of EMU members will be completely replaced and cease to exist as a legal tender.

TABLE 2
Currencies Belonging to the ECU, EU, or EURO

European Currency Unit (ECU)	European Union (EU)	Countries Participating in Common Currency (EURO)
*	Austria	Austria
Belgium	Belgium	Belgium
Britain	Britain	*
Denmark	Denmark	*
*	Finland	Finland
France	France	France
Germany	Germany	Germany
Greece	Greece	*
Ireland	Ireland	Ireland
Italy	Italy	Italy
Luxembourg	Luxembourg	Luxembourg
Netherlands	Netherlands	Netherlands
Portugal	Portugal	Portugal
Spain	Spain	Spain
*	Sweden	*

TABLE 3
EU-15 Place in the World

	Population (m/1995)	OECD GDP Share (%/1996)	World Trade Share (%1996)	Foreign Exchange Reserves (\$bn/1996)
U.S.	263	32.5	19.6	49.1
Japan	125	20.5	10.5	172.4
EU	170	38.3	20.9	349.8

Source: Financial Times