The Euro and the Dollar in the Crisis and Beyond

The euro has survived its first decade, overcoming questions about its viability and political and economic *raison d'être*. "The Euro and the Dollar in the Crisis and Beyond," a conference sponsored by Bruegel, the Peterson Institute for International Economics and the Federal Reserve Bank of Dallas, marked the milestone on March 17, 2010, with discussions of Europe's monetary integration, the euro's global role relative to the dollar and the currency's prospects in the aftermath of the 2008–09 global recession.

Adam Posen, senior fellow at the Peterson Institute and member of the Monetary Policy Committee of the Bank of England, set the tone in opening remarks, referring to "what is a very critical economic relationship and some very interesting economic issues" involving the single currency. **Vítor Gaspar**, a special adviser of the Banco de Portugal and former director general of research at the European Central Bank (ECB), lauded the euro's "extremely successful [run] in its first decade" and its "continued success," citing the currency's expansion into eastern Europe and the ECB's emergence as a credible guardian of price stability.

Still, conference participants were cautious, noting that common monetary policy alone may be insufficient for macro stabilization. The global downturn and subsequent sovereign debt crisis constitute a major test of whether the euro's benefits justify its costs. Lessons learned from the experience may affect economic and monetary integration in Europe and elsewhere. In this essay we revisit the conference insights regarding the euro in light of its long history and its complex economic underpinnings.

Adam Posen from the Peterson Institute for International Economics, Vítor Gaspar from Banco de Portugal and Richard Fisher, president and chief executive officer at the Federal Reserve Bank of Dallas.

Genesis of the European Single Currency

In the years after World War II, stable exchange rates and removal of trade and payment restrictions supported the economic recovery and reconstruction. The United Nations Monetary and Financial Conference at Bretton Woods, N.H., in 1944 laid the groundwork for a new international monetary order. It concluded with an agreement to peg participating nations' currencies to gold, within narrow bands of fluctuation of plus/minus 1 percent, while allowing some leeway to adjust parities.[1]

The International Monetary Fund (IMF) was to provide temporary funding to sustain the peg, while capital account restrictions were accepted under Bretton Woods for countries with pegged currencies so they could maintain some control over domestic monetary policy. The General Agreement on Tariffs and Trade (GATT) in 1947 brought a new impetus for trade liberalization and multilateral trade negotiations.

The Organization for European Economic Cooperation (OEEC) was established in 1948—predecessor to the Organization for Economic Cooperation and Development (OECD), created in 1961—in part to channel Marshall Plan funds (the U.S. European Recovery Program) to western Europe. The OEEC under its Secretary-General Robert Marjolin also promoted trade and establishment in 1950 of the European Payments Union (EPU) as a clearinghouse for the multilateral settlement of payments. The EPU was replaced in 1958 with the European Monetary Agreement (EMA) amid stricter requirements for net deficit settlement. Greater current account and currency convertibility followed, leading to the heyday of Bretton Woods.

European integration took a step forward with the Treaty of Paris establishing the European Coal and Steel Community (ECSC) in 1951, under which France and West Germany pooled their coal and steel resources with Belgium, Italy, Luxembourg and the Netherlands. The same countries signed the Treaties of Rome in 1957 establishing the European Economic Community (EEC) and the European Atomic Energy Community (EAEC). The EEC sought to advance toward a unified market for goods, services, workers and capital—the Common Market—through a customs union to promote trade in industrial goods and through a common agricultural policy conferring special protected status to agriculture.[2]

The seminal works of Robert A. Mundell (1961), Ronald I. McKinnon (1963) and Peter B. Kenen (1969) on optimal currency areas helped develop an economic rationale for the euro. However, Marjolin, European Commission vice president at the time, was the first EEC official to publicly recognize in 1962 that the Common Market might require more than the Treaty of Rome's customs union or the Bretton Woods' fixed (but adjustable) peg. In a memorandum, he urged a common monetary policy and single currency for EEC member states.

> "… the emergence of a European reserve currency would considerably facilitate international monetary co-operation and a reform of the present system. … The Treaty [of Rome] makes provision for a common commercial policy but not for a common monetary policy; this is an obvious gap which needs to be bridged."[3]

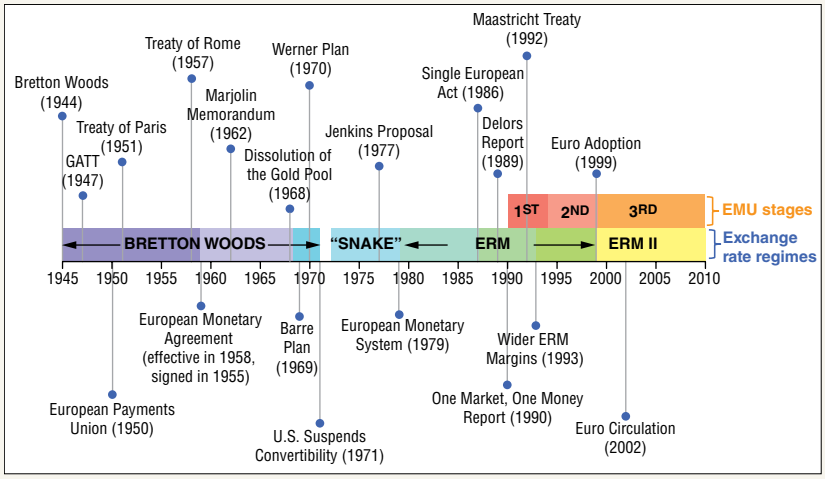
The process of European monetary union, however, did not formally begin until 1990—almost 30 years after Marjolin advocated a common monetary policy.

The Cost of a Common Monetary Standard

Mundell (1961) defined a currency area as

Timeline

Europe's Economic and Monetary Union



NOTE: Unless otherwise noted, for treaties and agreements, the year in parentheses marks the year the agreements were signed, not necessarily when they became effective. EMU is the Economic and Monetary Union of the European Union; ERM, the Exchange Rate Mechanism; and GATT is the General Agreement on Tariffs and Trade.

SOURCE: Timeline put together by the authors.

"a domain within which exchange rates are fixed," not necessarily coinciding with existing political borders. Conference participants echoed this idea, but noted the complexities of assessing the costs and benefits of giving up the exchange rate to form a currency area. In Mundell's (1961) judgment, a country's costs of joining depend on how well it manages its economy absent the exchange rate and how the burden of adjustment is shared by all countries maintaining fixed rates (*see Box 1*). He argued that the costs of fixing the exchange rate must be small if internal factor mobility—the movement of production inputs, especially labor—is high relative to mobility outside the area. In that case, a fixed exchange rate arrangement is likely to be optimal even if the benefits are otherwise modest.

Progress on structural reform involving European economic integration has been slow, especially because of insufficient factor mobility and institutional impediments such as varying degrees of centralized wage bargaining among countries. **Ajai Chopra**, deputy director of the International Monetary Fund's (IMF) European department, told the conference: "One could argue that differences in structural flexibility and [the] different pace of reform … in different parts of the euro area have also contributed to imbalances [that is, uneven economic performance] given the common monetary policy."

Under Bretton Woods, western Europe had moved toward establishing a *common monetary standard*, defined as a credible and irrevocably fixed exchange rate regime where national currencies remain in circulation. Preserving such a common standard was difficult because of slow progress implementing necessary structural reforms to reduce the costs of fixing the exchange rate. In turn, adhering to a common monetary policy and sharing the burden of adjustment rested on a framework of greater policy coordination. Without verification and clear accountability, such voluntary commitments could not survive—

Box 1
Asymmetric Demand Shifts and the Costs of a Fixed Exchange Rate Regime

Robert A. Mundell (1961) assumed that nominal wages and prices "cannot be reduced in the short run without causing unemployment" and studied the effect of an asymmetric demand shift from, say, Italian to German goods. The shift causes a current account surplus, employment growth and cost pressures in Germany, while lowering employment and inflation in Italy. In a floating exchange rate regime, the appreciation of the deutsche mark in response to the demand shift turns "the terms of trade against" Germany and the resulting increase in demand for Italian goods reduces Italy's deficit without worsening its employment or creating inflation in Germany.

Under a fixed (nominal) exchange rate regime, the real exchange can still allow needed external adjustments if Germany is willing to let its domestic prices rise or Italy is willing to make its prices fall. In the first scenario, German goods become more expensive than Italian ones as German prices increase, so consumers substitute away and shift the demand back toward Italian-made goods. In the second scenario, if Germany chooses to use its domestic monetary policy to keep German inflation subdued and maintain price stability, Italy can only eliminate its current account deficit with domestic policies that reduce prices and employment. In the former case, Germany suffers the external adjustment costs with higher inflation, while in the latter instance, Italy bears those costs with depressed levels of employment.

If domestic monetary policy is curtailed either by freer capital movements under a common monetary standard or by forming a full monetary union, then "to relieve the unemployment in [Italy] the central banks in both countries would have to expand the national money supplies, or to prevent inflation in [Germany], contract the national money supplies…[but] both unemployment and inflation cannot be escaped." The reallocation of labor from Italy to Germany can accomplish the desired external rebalancing maintaining the fixed rate by reducing unemployment in Italy (through migration) and raising the demand for German goods from within—while damping the cost pressures in Germany.

as EEC experience during the 1960s and 1970s underscores. The "economic performance [of Europe] and its resilience … depend very much not only on the quality of the policies but also on the quality of the policy frameworks," Chopra concluded.

Achieving Marjolin's vision for a single currency and *monetary union* required more than a common monetary standard. It called for a single currency to replace the national currencies and a common monetary policy. That entailed surrendering domestic monetary policy and limiting economic divergence among EEC member states. Mundell (1961) argued that a common monetary standard and a monetary union "can be brought closer together by an institutional change … [to share] the burden of international adjustment." However, the limitations of policy coordination were apparent every time that national interests diverged. By contrast, the option of monetary union provided a more credible framework based on a binding commitment among all member states.

The Credibility of a Common Monetary Standard

The currency of a country credibly committed to low and stable inflation offers a reliable store of value and, therefore, can become a preferred means of exchange and anchor for a fixed exchange rate area. The anchor currency predominates, while the other countries are forced to import the monetary policy of the "dominant" country (especially as capital mobility increases) or abandon the peg.[4] A common monetary standard may collapse from loss of confidence in the monetary policy of the dominant country or loss of confidence in the willingness of the other members to import the dominant country's policies.

The demise of Bretton Woods—accelerated after the dissolution of the London Gold Pool in 1968—culminated when the dollar became inconvertible, closing the gold window in 1971, and freely floating in 1973.[5] The monetary policy of the U.S., the dominant country under Bretton Woods, was constrained by its long-standing commitment to gold convertibility and, by extension, to monetary growth and price stability. Bretton Woods unraveled in part because the U.S. progressively abandoned its commitment to price stability during the 1960s—replacing a monetary rule with discretion (and looser monetary policy) for everybody. The concern in European policy circles was that this new era of fiat monies and floating rates would hamper the overarching goal of establishing the Common Market. European officials didn't seek a return to gold convertibility or the dollar-anchor, but aimed to reengineer an intra-EEC common monetary standard during the 1970s.

In 1970, a panel of experts chaired by Luxembourg Prime Minister Pierre Werner—building on a 1969 proposal by European Commission Vice President Raymond Barre—advocated the adoption of a single currency and a common monetary policy in part to prevent the emergence of a domi-

David Mayes, director of the Europe Institute at the University of Auckland.

nant country's unconstrained monetary policy. The EEC agreed in 1972 to closer policy coordination and narrowing the margins of participating currencies to plus/minus 2.25 percent, a system known as the "European snake." A European unit of account was established, but the Bundesbank's reputation for price stability lifted the deutsche mark to become the de facto anchor currency.

The snake didn't last, as countries opted for greater domestic autonomy when confronted with a decade of high inflation and low growth, even as European Commission President Roy Jenkins renewed the call for monetary union in 1977. The European Monetary System (EMS) was launched in 1979 around a grid of adjustable central parities with fixed margins—the exchange rate mechanism (ERM). It introduced the European currency unit (ECU) as a fixed-weight basket of member states' currencies and set the ERM margins at plus/minus 2.25 percent of the ECU (plus/minus 6 percent for some countries). The low-inflation deutsche mark again asserted itself as de facto anchor. More stable exchange rates and tamed inflation within the EEC were not attained until the 1980s.

Enrique Martínez-García from the Federal Reserve Bank of Dallas and Antonio de Lecea from the Delegation of the European Union in Washington.

The credibility of a fixed-rate regime depends not only on the price stability commitment of the dominant country, but also on that commitment being shared by all participating currencies. **Carlos Zarazaga**, senior economist and policy advisor at the Federal Reserve Bank of Dallas, drew on the dollarization experience in Latin America to argue that credibility is fundamental when evaluating the advantages of a currency area and when comparing a monetary union with a common monetary standard.

One potential advantage of joining a currency area is to constrain inflationary policies among countries accustomed to financing themselves through money creation, a past practice of some Latin American countries. Merely fixing the exchange rate does not solve the high-inflation problem because a fixed-rate rule is no more credible than a commitment to price stability. The temptation to temporarily boost economic activity by deviating from the monetary policy of the low-inflation country often proves too strong to resist when policymakers are tolerant of inflation and the possibility of devaluating cannot be excluded. Such an option is incorporated into expectations, helping produce persistent inflation differentials, diverging monetary policies and recurring bouts of exchange rate instability.

Surrendering domestic monetary policies and forming a monetary union—even unilaterally, by adopting the dollar as legal tender through dollarization—is one way to credibly commit to a fixed exchange rate rule. "It has become clear [now] that the adoption of the currency of the low-inflation country doesn't import the institutions behind that currency's reputation," Zarazaga told the audience. Although the goals of dollarization partly materialized in Latin America through reduced inflation and improved monetary discipline, the framework achieved a mixed record as a means of raising living standards and promoting trade, competitive-

ness and growth, he said.

Latin American countries that dollarized were ready to accept the U.S. monetary policy unconditionally. The EEC, on the other hand, favored the creation of supranational institutions representative of the interests of all its member states. Establishment of the ECB has been a major accomplishment, Gaspar said. It required convincing the low-inflation country (Germany) to cede control over its domestic monetary policy. In return, the joint central bank pledged to adhere to the monetary policy preferred by the low-inflation country and adopted a hard line on inflation to build its reputation. The ECB, indeed, was endowed with independence and given a single mandate, price stability. By comparison, the Federal Reserve's dual mandate seeks "maximum employment" and price stability.

The Trade-Offs of Financial Liberalization

The costs of a monetary union extend beyond those of fixing the exchange rate considered by Mundell (1961), because countries surrender control over their domestic monetary policy. The "impossibility trinity" principle, based on the work of J. Marcus Fleming (1962) and Mundell (1963), states that a country cannot simultaneously maintain a fixed or highly managed exchange rate, an independent domestic monetary policy and free movement of capital. A country must choose two of the three and give up the other. As capital mobility increases, countries joining a common monetary standard lose more control over domestic monetary policy while adhering to the fixed exchange rates. Full monetary union entails surrendering domestic monetary policy no matter the degree of capital mobility. The difference in the costs of forming a full monetary union or preserving the common monetary standard narrows as nations remove capital account restrictions to facilitate freer capital movements.

Mundell (1973), in turn, argued that the gains of a currency area would be larger if the participating countries can better "insure" one another against asymmetric shocks. This provided a rationale for capital account liberalization and strengthened the case for intra-EEC financial integration. The Common Market involved a provision for free movement of capital, but, in effect, capital account controls became the norm during the 1970s following the collapse of Bretton Woods and the first oil shock in 1973. European countries tried restricting capital account movements to maintain some degree of monetary policy autonomy while attempting to restore an intra-EEC common monetary standard. By the time the EMS became operational in 1979, the second oil shock hit, and it was almost assumed that capital controls, and frequent parity realignments, would be unavoidable.

Having tamed the high inflation that plagued much of the world by the mid-1980s, the EEC vigorously renewed efforts toward capital account liberalization. The Single European Act in 1986 became a major step toward freer movements of capital, people and services. "One couldn't speak of freedom of capital movements" within the EEC until then, said **Nicolas Véron**, senior resident fellow at Bruegel, while noting that harmonization of institutions and regulations may have lagged. He cited slow development of European accounting standards as an example of lingering impediments to capital flows. **Garry Schinasi**, visiting fellow at Bruegel, said that greater European financial integration wasn't accompanied by a conclusive debate at the European Union (EU) level on supranational financial regulation and supervision, still largely the prerogative of national governments.

Conference participants raised a number of caveats concerning the role of financial integration and capital account liberalization, based on the euro's experience. **Zsolt Darvas**, a research fellow from Bruegel, said financial spillovers can make countries more exposed to external shocks. Financial liberalization and trade expansion have been surprisingly rapid in eastern Europe even

as nations there prepare for EU membership, he noted, allowing the region to catch up with western Europe. At the same time, eastern Europe was especially affected by the 2008–09 recession and shocks originating from the advanced countries. "Integration made these [eastern European] countries more vulnerable," Darvas said. The EU has provided some assistance, and the region avoided the "worst problems from past crises, such as currency overshooting, bank runs and banking system collapse," Darvas added.

Thomas Glaessner, a Citigroup managing director and global policy strategist, questioned how much international capital market diversification is possible following removal of capital controls and other restrictions. "If you really look carefully at how correlated all asset prices have been into the crisis and out of the crisis, [it] is really, really exceptional. [Many investors] really are rethinking whether [they] are getting the diversification [they] thought [they] were getting," Glaessner said. In other words, impediments to intra-European risk-sharing may persist in spite of capital account liberalization. However, absent these impediments, international diversification still may not produce the benefits envisioned by Mundell (1973) when there is strong comovement across such a large class of assets.

Joseph Gagnon, senior fellow at the Peterson Institute, noted that the transmission mechanism of monetary policy can be severely affected when banking and other financing channels become impaired, as they did globally beginning in 2007. It is not obvious whether liberalization makes the financial system more resilient, but he argued that the 2008-09 global recession showed monetary policy must be unconventional to be effective in response to a financial crisis.

The Foundations of Monetary Union

A committee chaired by European Commission President Jacques Delors recommended in 1989 that economic and monetary union (EMU) be achieved in three "discrete, but evolutionary steps" (*see Box 2*). The Treaty of Rome was updated, with the Treaty on European Union (the "Maastricht Treaty") signed in 1992.[6] Adoption of the euro required that all national central banks be independent and was conditional upon fulfillment of convergence criteria (*Chart 1*). Denmark and the U.K. were granted special status that did not oblige them to adopt the euro.

The convergence criteria sought to ensure sustainable intra-EU fixed exchange rates and a commitment to price stability shared by all. The criteria were also meant to assure Germany, the low-inflation country, that it would lose little after replacing its own currency and surrendering its independent monetary policy. However, the criteria neither guaranteed that the currency area was optimal nor likely to become so. Following the German reunification in 1990, the fixed parities of the ERM became increasingly difficult to maintain for some countries. The devaluation of the Italian lira in 1992 set in motion a chain of events that forced some permanent departures (the U.K.) and a widening of the fluctuation margins of the ERM

Box 2
Three Stages of Economic and Monetary Union

Stage 1 July 1, 1990–Dec. 31, 1993
- Full liberalization of capital movements; financial integration
- Increased monetary cooperation

Stage 2 Jan. 1, 1994–Dec. 31, 1998
- Establishment of European Monetary Institute (EMI), forerunner of the European Central Bank (ECB)
- Nominal convergence criteria installed; national central banks' independence required
- Fiscal policy coordination arrangements formalized under the Stability and Growth Pact (SGP)

Stage 3 Jan. 1, 1999–Present
- Exchange rates irrevocably fixed; single monetary policy
- The ECB and the European System of Central Banks (ESCB) become operational
- Exchange Rate Mechanism II (ERM II) established for future euro area candidates
- Banknotes and coins introduced; the euro becomes sole legal tender in 2002

to plus/minus15 percent in 1993. The resulting dilution of the requirement of exchange rate stability did not help dispel doubts on whether the euro's costs truly outweighed its benefits.

The Maastricht Treaty's budgetary convergence criteria were added to constrain the least-disciplined countries (*Chart 1D, E*). One conventional view is that price stability need not require that fiscal policy be subordinate to monetary policy. Michael Woodford (1996) argued that monetary policy cannot simultaneously accommodate fiscal policy and maintain price stability.[7] In a monetary union, not even adherence to sound fiscal practices can protect a country from price or output fluctuations generated by the worsening budget position of another country. What matters is the overall state of public finances of all countries. In principle, the fiscally responsible country could still insulate itself by varying its own budget surplus to compensate for the budget variations of the other country, keeping their combined public debt on a steady path. This amounts to financing the less financially disciplined country's budget deficits, something few governments would be eager to do.

In the EMU's institutional framework, fiscal policy is decentralized, remaining the responsibility of the national governments though formally limited by the Stability and Growth Pact (SGP) of 1996. After the exchange rate convergence criterion was loosened in 1993, the SGP aimed to strengthen the soundness of public finances by making permanent the Maastricht convergence criteria of a 3 percent deficit-to-GDP ratio and a 60 percent debt-to-GDP ratio. It also established an enforcement mechanism, the excessive deficit procedure, which relies on surveillance and possible sanctions. The SGP was revised in 2005, becoming more tolerant of deficits arising from cyclical downturns and allowing more country autonomy.

David Mayes, adjunct professor and director of the Europe Institute at the University of Auckland, noted that before the 2008–09 global recession, there was impressive progress in terms of deficit reduction. He argued that the current stress in most member states suggests that the consolidation was cyclical rather than structural—especially for the peripheral euro area countries. In early 2010, Greece struggled paying its sovereign debt, and by the end of the year, Ireland had difficulty meeting its obligations. Spain, Portugal and Italy also sustained diminished investor confidence and consequent higher borrowing costs as concern over their public finances mounted (*Chart 2*).

Absent a centralized, redistributive fiscal policy, the EU adopted an ad hoc strategy of providing emergency credit lines through the European Financial Stability Facility and the European Financial Stabilization Mechanism to curb the spread of financial woes to other member states. The IMF also provided emergency funds and technical assistance. A growing number of European countries are installing austerity measures aimed at returning to the bounds of the SGP, especially regarding the deficit. Conference participants suggested that the EMU's unique framework

Garry Schinasi from Bruegel and Edwin Truman from the Peterson Institute for International Economics in Washington.

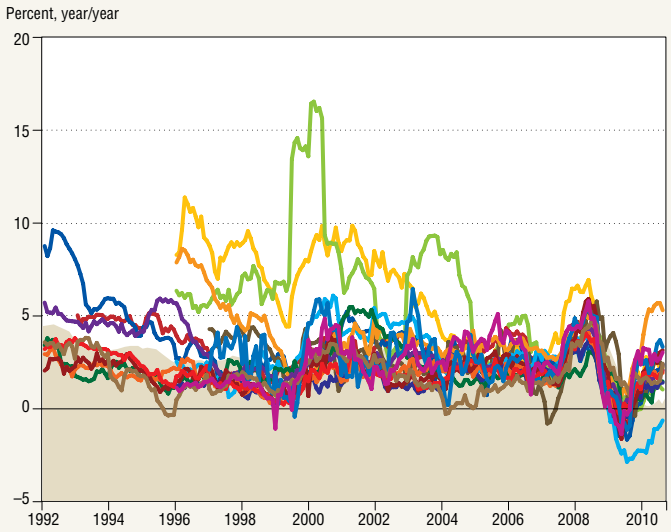
The Maastricht convergence criteria are **A. price stability** (not more than 1.5 percentage points above the unweighted arithmetic average of the three best-performing member states, computed based on the latest available 12-month average of each country's harmonized consumer price index over the previous 12-month average); **B. exchange rate stability** (participation in the exchange rate mechanism, ERM, for two years without severe tensions); **C. long-term interest rate convergence** (not more than 2 percentage points above the unweighted arithmetic average of the three best-performing member states in terms of price stability based on the latest available 12-month average for each); **D. sound public finances** (with reference value of no more than 3 percent for the general government overall deficit over GDP); and **E. sustainable public finances** (with reference value of no more than 60 percent for the general government debt over GDP).

Chart 1

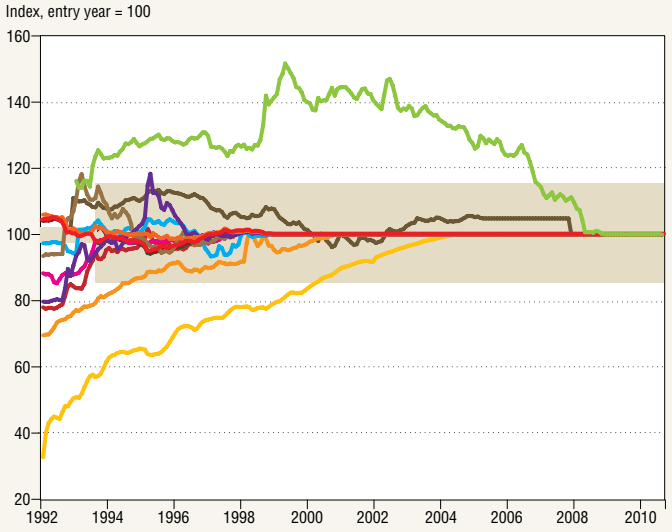
Convergence Criteria of the Economic and Monetary Union

A. Price Stability

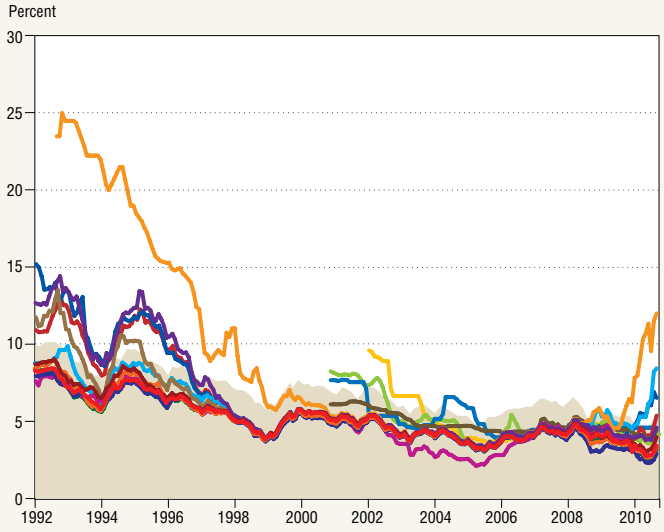
(Inflation rates)



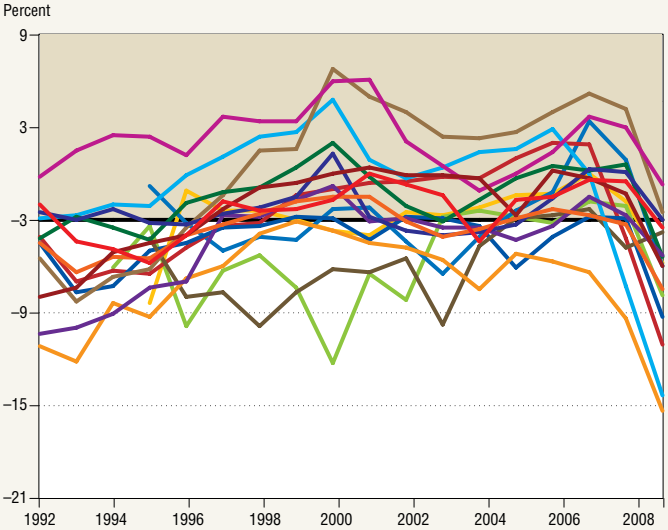
B. Exchange Rate Stability



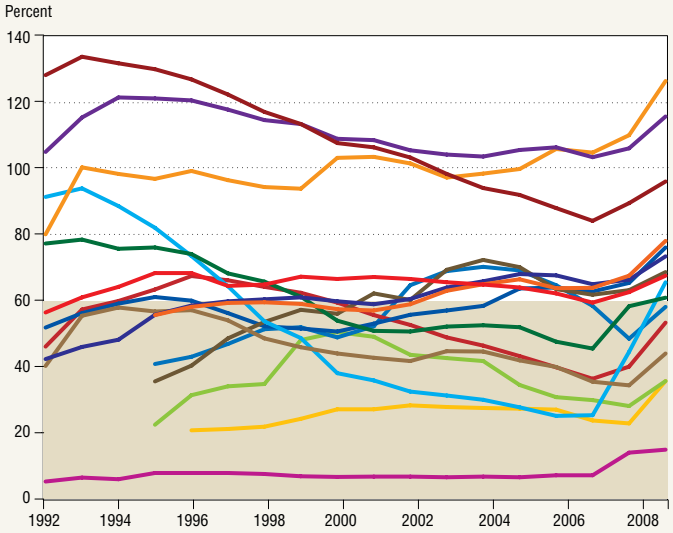
C. Interest Rate Convergence
(Long-term rates)



D. Sound Public Finances
(Government budget balance as a share of GDP)



E. Sustainable Public Finances
(Government debt as a share of GDP)

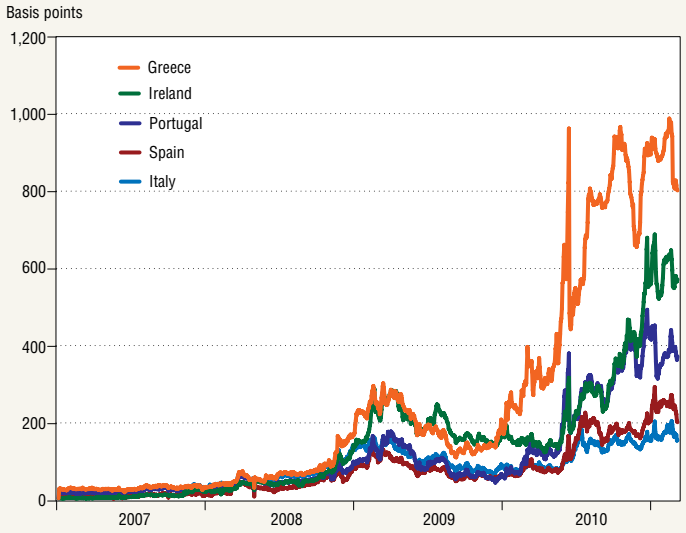


NOTES: Shaded areas represent stipulations set by the Maastricht convergence criteria. The charts plot the data for the 16 euro-area countries. Reference values for inflation and interest rates are based on data for all 27 European Union (EU) member states since each joined the EU. The exchange rate bands correspond to the wider margins of +/–15 percent adopted for the Exchange Rate Mechanism (ERM) since August 1993 and to the prevailing margins of +/–2.25 percent prior to that. Belgium and Luxembourg formed a monetary union in 1921 that survived until the adoption of the euro in 1999. Since 1944, one Luxembourgish franc was equal to one Belgian franc, so only the Belgian franc exchange rate is plotted. All exchange rates are quoted as national currencies per ECU (European currency unit).

SOURCES: Statistical Office of the European Communities (Eurostat); Haver Analytics.

Chart 2

Spreads on Sovereign Yields Widen as Fiscal Difficulties in Peripheral Euro Area Countries Are Uncovered



NOTE: The chart shows the difference, or spread, in interest rates between 10-year government bonds for various countries and German 10-year government bonds.

SOURCES: Reuters; Haver Analytics.

of centralized monetary policy and decentralized fiscal policy was flawed because it didn't allow interregional solidarity within the EU.

Kenen (1969) argued that a more centralized, redistributive fiscal policy can be used to compensate for the costs and to sustain a currency area even when factors of production such as labor are not perfectly mobile. As Chopra noted, facilitating interregional transfers to respond to asymmetric shocks requires the EU to open the debate on partially centralizing fiscal policy. However, European integration has traditionally followed the principle of subsidiarity that matters ought to be handled by the competent authority closest to the affected citizens. It remains to be seen whether the sovereign debt crisis in Greece and Ireland will change how the principle of subsidiarity is applied to fiscal matters and result in any significant transfer of fiscal resources to the EU, conference participants said.

The Benefits of Monetary Union

In a 1990 report, "One Market, One Money," the European Commission noted that intra-EEC trade is largely also intra-industry trade in which countries buy and sell the same types of goods—Italy sells Fiat cars in Germany, and Germany Volkswagen cars in Italy. Trade integration means that most sector (supply-side) shocks affect all countries similarly and also reduces the likelihood of asymmetric demand shifts about which Mundell (1961) worried (*see Box 1*). The adoption of a common currency would simply reinforce those tendencies, lowering the costs of maintaining a currency area. Kenen (1969) also argued that countries with a more diversified productive structure were less subject to industry-specific demand shocks and, therefore, more likely to constitute an optimal currency area.

In turn, Paul Krugman (1991) argued that deeper trade integration, particularly in the presence of economies of scale and synergies, leads to regional concentration of industrial activities and specialization. Proximity to the final consumer is weighed against the economies of scale through production centralization to determine optimal location patterns. Trade integration may result in greater country specialization, increasing the exposure to asymmetric shocks and making it costlier to form a currency area and adopt a common currency. McKinnon (1963) and Alberto Alesina and Robert J. Barro (2002) argued that small and highly open economies may achieve greater trade benefits by forming a currency area with their largest trading partners. The debate remains open as to how much heightened trade integration prior to monetary union may have facilitated the introduction of the euro and which countries benefited most.

The benefits of adopting a common monetary standard are also predicated partly on the notion that reducing exchange rate risk/uncertainty and increasing price transparency encourage competition, trade and investment. Intra-area exchange

rate risk/uncertainty can only be completely eliminated with full monetary union. To illustrate the euro's benefits, **Antonio de Lecea**, a member of the EU delegation in Washington, said that if all 50 U.S. states maintained their own currencies, then conversion costs and exchange-rate volatility would severely constrain internal trade and investment in the U.S. While the effect of the euro on trade is difficult to isolate, de Lecea said that intra-euro-area trade creation may range from 5 percent to 15 percent without apparent trade diversion from non-euro-area countries. Nonetheless, some of these benefits may not be shared equally, just as costs aren't, given that some countries trade more intensely than others and their size and other characteristics differ.

Other potential advantages may come through the "internationalization" of the euro, a status envisioned by Marjolin in 1962, which may have been out of reach for any individual European currency independently or as part of a credible fixed exchange rate regime.[8] The international role of a currency emerges through increasing issuance of international debt securities, cross-border loans and cross-border deposits; encouraging foreign exchange trading; augmenting settlements and invoicing of international trade; and serving as official reserve currency and anchor for other countries. As conference participants noted, the dollar still dominates along all of these dimensions, with the euro and yen distantly behind.

Georges Pineau, ECB representative in Washington and observer at the IMF, said the euro has emerged as the world's second international reserve currency behind the dollar. Nonetheless, he was seconded by de Lecea in proclaiming that the position of the European institutions is neutrality on the international role of the euro. **Edwin Truman**, senior fellow of the Peterson Institute and former head of the Federal Reserve's Division of International Finance, noted that the global share of disclosed reserves denominated in euros rose to slightly less than 28 percent in 2009 from 18 percent in 1999, at the expense of the yen and to a lesser degree of the dollar. He estimated that 15 percent of total international dollar-denominated assets consist of foreign exchange reserves and argued that the same is probably true of the euro. Hence, in his view it would be a mistake to identify the international financial system with the international monetary system.

Euro-denominated international debt securities reached 32 percent in 2009 from 19 percent in 1999, while the proportion of all cross-border loans in euros lagged, though inching higher from 12 percent in 1999 to 17 percent in 2009, Pineau said. The euro's role as a trade invoicing or settlement currency has grown somewhat from 18 percent in 2001 to 29 percent in 2007, while the euro's share in foreign exchange trading (by Continuous Linked Settlement System data) remained relatively steady between 2002 and mid-2008, Pineau added. The dollar's position has declined somewhat by these measures since the introduction of the euro, but remains well ahead. The euro has only become dominant within its natural area

Conference attendees at "The Euro and the Dollar in the Crisis and Beyond" conference held at the Federal Reserve Bank of Dallas on March 17, 2010.

of influence, those countries in close proximity and with deep trade ties to the euro area.

The euro enjoys special popularity among central and eastern European countries where it is widely used for invoicing of international trade and issuance of debt securities, both Darvas and Pineau said. In Asian markets, the dollar predominates as a reserve currency and for trade invoicing, leaving the euro with a relatively low profile, said **Randall Henning**, a visiting fellow at the Peterson Institute. The diminished use of the dollar among Latin American countries follows unexpected weak economic performance of dollarized countries and the collapse of Argentina's currency board in 2002, Zarazaga said. The euro, however, has not benefited from this retreat, maintaining a marginal presence.

Concluding Remarks

Countries in a monetary union may, over time, turn their union into an optimal currency area, even if it wasn't one before, through the benefits of a shared currency, as Jeffrey A. Frankel and Andrew K. Rose (1998) and Paul De Grauwe and Francesco Paolo Mongelli (2005) argued. On balance, conference participants agreed the euro's first 10 years have proven a positive development, though the 2008–09 global recession refocused concerns about the euro's role, its costs and, ultimately, whether it constitutes an optimal currency area.

The recession also brought to the fore questions about the proper role of fiscal policy and the financial system in the context of a monetary union. Good policies and strong institutions and regulations matter, participants concluded. Posen of the Peterson Institute pointed to the debt crisis in the peripheral euro-area countries as evidence that common monetary policy is necessary but not sufficient to realize the full benefits of monetary union. Sound public finances are also required.

What became apparent with the spread of the crisis is that countries are now more interconnected than before. Increasingly, nations have a vested interest in the quality of economic and financial policies elsewhere. Coordinated policy responses among industrialized countries send a strong signal of collaboration in addressing global economic challenges. The European experience also shows the limits of recourse to nonbinding policy coordination and other weakly enforceable commitments. Ten years into one of the most ambitious monetary undertakings in recent history, the same questions that punctuated the euro's birth remain and will likely continue generating debate. It is a work in progress whose evolution we may well revisit a decade from now in Dallas.

—Enrique Martínez-García and Janet Koech

Papers, presentations and video from the conference, "The Euro and the Dollar in the Crisis and Beyond," are available on the Federal Reserve Bank of Dallas website, at www.dallasfed.org/institute/events/10euro.cfm.

Notes

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[1] The U.S.'s early commitment to redeem dollars for gold at the fixed rate of $35 per ounce contributed to the dollar becoming the de facto anchor of the system and the predominant international reserve currency.

[2] At the urging of the U.K., the European Free Trade Association (EFTA), comprising most non-EEC countries in western Europe, was established in 1960. A free-trade agreement allows removal of trade barriers among members, while a customs union also requires uniform external tariffs—a common trade policy. Both are permitted regionally under Article XXIV of the GATT.

[3] "Memorandum of the Commission on the Action Programme of the Community for the Second Stage," Chapter VIII (Monetary Policy), Brussels, Oct. 24, 1962.

[4] The nominal exchange rate is the relative price of one currency in units of another. Hence, with "n" national currencies, there are always "n-1" exchange rates and the anchor currency to which they are pegged. In principle, a basket of currencies may also serve as anchor, though the lack of backing by a single monetary policy may be detrimental to its viability.

[5] The London Gold Pool was established in 1961 with reserves from the U.S. and seven other western European countries to defend in the London gold market the $35 per ounce dollar–gold parity established under Bretton Woods. After the Gold Pool's collapse in 1968, a two-tier system of official and open market transactions was maintained until the U.S. unilaterally suspended direct convertibility of the dollar to gold in 1971.

[6] The European Communities (ECSC, EEC and EAEC) shared the EEC executive and administrative bodies after the Merger Treaty of 1965 took effect in 1967. The EEC, renamed European Community (EC), along with the ECSC and EAEC, became the first pillar of the European Union (EU) established in the Maastricht Treaty signed in 1992. The ECSC expired in 2002, the EAEC remains a distinct entity, while the legal personality of the EC was subsumed into the EU with the Treaty of Lisbon in 2009. There have been successive enlargements to the European Communities/EU since the Hague Summit of 1969: 1973—Denmark, Ireland and the U.K.; 1981—Greece; 1986—Spain and Portugal; 1990—East Germany (German unification); 1995—Austria, Finland and Sweden; 2004—Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia; 2007—Bulgaria and Romania.

[7] Michael Woodford (1996) maintained that this is particularly true if changes in the path of the government budget and debt have a discernible effect on aggregate demand (that is, if Ricardian equivalence fails).

[8] Eleven European Union (EU) member states adopted the euro in 1999: Austria, Belgium, Netherlands, Finland, France, Germany, Ireland, Italy, Luxembourg, Portugal and Spain. Other EU countries have joined the euro since then: Greece (2001), Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009) and Estonia (2011).

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