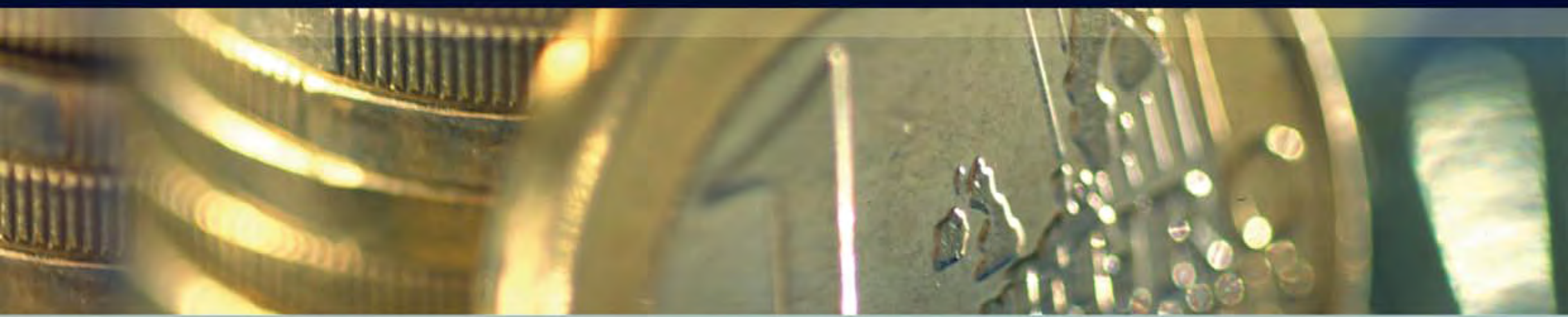
EUROPEAN ECONOMY

Economic Papers 395 | December 2009



The euro: It can't happen. It's a bad idea. It won't last. US economists on the EMU, 1989 - 2002

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Economic and Financial Affairs
DIRECTORATE-GENERAL

EUROPEAN COMMISSION

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ISBN 978-92-79-14395-3

The euro: It can’t happen, It’s a bad idea, It won’t last.
US economists on the EMU, 1989 - 2002

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November 10, 2009

Abstract: The purpose of this study is to survey how US economists, those with the Federal Reserve System and those at US universities, looked upon European monetary unification from the publication of the Delors Report in 1989 to the introduction of euro notes and coins in January 2002.

Our survey of approximately 170 publications shows (a) that US academic economists concentrated on the question “Is the EMU a good or bad thing?”, usually adopting the paradigm of optimum currency areas as their main analytical vehicle, (b) that they displayed considerable scepticism towards the single currency, (c) that economists within the Federal Reserve System had a less analytical and a more pragmatic approach to the single currency than US academic economists, and (e) that US economists adjusted their views and analytical approach as European monetary unification progressed. In particular, the traditional optimum currency approach was gradually put into question.

We find it surprising that economists living in and benefiting from a large monetary union like that of the US dollar were so sceptical of monetary unification in Europe. We explain the critical attitude of US economists towards the single currency by several factors: first, the strong influence of the original optimum currency area theory on US analysis, leading to the conclusion that Europe was far from an optimal monetary union; second, the use of a static ahistorical approach to study monetary unification by comparing the full-fledged US monetary union with Europe prior to monetary unification, in this way failing to see monetary unification as an evolutionary process; third, the failure to identify pegged exchange rate regimes in Europe as the alternative to a single European currency; and fourth, the belief that the single currency for Europe was primarily a political project that ignored economic fundamentals, thus dooming the single currency to collapse.

Key words: The euro, optimum currency area, ECB, EMU, Federal Reserve System, monetary unification, Europe, United States

JEL classification: B22, E 42, E5, F02, F33 and F41

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The opinions expressed here are solely those of the authors. They do not represent the views of DG ECFIN.

"From the scientific point of view, the euro is the most interesting thing. I think it will be a miracle - well a miracle is a little strong. I think it's highly unlikely that it's going to be a great success. … But it's going to be very interesting to see how it works". Milton Friedman in an interview in May 2000. See Friedman (2007).

Introduction[1]

The euro is now celebrating its first ten years. As of January 2009, the euro is circulating in sixteen Member States of the European Union.[2] This unparalleled experiment in monetary unification is a milestone in the European integration process.[3] By now, the euro has emerged as a major currency, even challenging the US dollar as the global reserve currency. In a very short period of time, it has transformed the European economic and political landscape.[4] Never before have sovereign nation states surrendered their national currencies to a common central bank, abstaining from monetary sovereignty. In short, the euro is one of the most exciting experiments in monetary history.

How did US economists view the plans for a single currency in Europe before the euro was actually put into circulation? What type of predictions did they make about the process of European monetary unification? Which theoretical frameworks did they use to evaluate the single currency? How did their views evolve in response to European monetary events? The purpose of this paper is to provide answers to these questions. We adopt the publication of the Delors report in 1989 as the starting date for our survey and the introduction of euro notes and coins in 2002 as the end date of our study.

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[1] This paper was prepared for the session *Reflections on American Views of the Euro Ex Ante: What We Have Learnt 10 years Ex Post*, at the AEA meeting, January 2009 in San Francisco. We have benefited from constructive comments by Michael D. Bordo, Barry Eichengreen, Harry Flam, Jeffrey Frankel, Charles Goodhart, Dale Henderson, Peter Kenen, Francesco Mongelli, Niels Thygesen and Jürgen von Hagen as well as from participants at the 11th Annual Conference on European Integration in Mölle, May 2009. We owe a special debt to Jeffrey Frankel and Francesco Mongelli. The usual disclaimer applies.

[2] In 2002, twelve out of the then fifteen EU Member States introduced euro notes and coins. The three exceptions were Denmark, Sweden and the United Kingdom. Slovenia adopted the euro in January 2007, Malta and Cyprus in January 2008, and Slovakia in January 2009.

[3] American economists have described the single currency in similar terms, for example "a remarkable and unprecedented event in economic and political history" (Feldstein (2000a)), "an economic and political phenomenon" (Eichengreen (1994a)) and "the grand project of Europe" (Krugman (2000)).

[4] Almost every "birthday" for the euro has inspired evaluations of its life-time accomplishments. See among others *European Economy* (2008) and Mongelli and Wyplosz (2008) for surveys of the euro when turning ten years.

We examine the views of two groups of economists – first those within the Federal Reserve System, and second those at US universities, in short the academic economists – as expressed primarily in journal articles and in contributions to books.[5]

We concentrate on US economists for two major reasons. First, they played a dominant role in both international research and policy debate around the euro. Their views were widespread on both sides of the Atlantic, impacting on the work of European economists on EMU and the single currency. Thanks to the size and intellectual dominance of the US academic profession, US economists set the parameters of the academic discussion on European monetary unification. Second, US economists - in contrast to European economists - lived in a large monetary union, that of the US dollar, thus experiencing the benefits and costs of such a monetary arrangement. Hence we expect them to use the US monetary record to interpret and evaluate the European move towards monetary unification.

We deal only with US economists that were living in the United States in the 1990s and observing European monetary integration from the American side of the Atlantic. We include a few foreign-born economists who have spent their careers mainly in the United States, but we do not include US economists working with international organisations, such as the International Monetary Fund, since including them would have the effect of diverting the focus of this paper away from the evolution of US economic thought in the academic and Federal Reserve arenas. Furthermore, we do not take into consideration the views of European economists: neither those in Europe, nor those working in the United States. Of course, it would be of interest to account for the views of European economists on European monetary unification. Such a study, however, is difficult to carry out as it would cover several countries with contributions in other languages than English.[6]

Our research is based on an extensive search of the literature. With regard to Federal Reserve economists, we have tried to cover all Federal Reserve banks, their publications and associated conferences. For academic economists, we have searched established academic journals, conference proceedings, working paper series and

[5] We also cover interviews, speeches and short articles in the media.
[6] The literature on the future of the EMU is vast. It started with the announcement of the first plans for the creation of the single currency. For a discussion of this strand of work, including European contributions, see among others Jonung (2002).

personal webpages. Of course we are aware that we have not found all publications on the issues we deal with. Still, we believe we cover all major contributions and thus are able to summarise the main issues of debate in a representative way.

Although the EMU project attracted considerable interest in the United States, US economists continued to regard European monetary integration as a minor field of research, where a few economists dominated; and most of these had their origins in international economics and finance. Some of them, like Barry Eichengreen, Martin Feldstein, Jeffrey Frankel and Peter Kenen stayed with the EMU-agenda throughout the 1990s.

In our account, the period 1989-2002 is divided into two phases. The first phase starts with the publication of the Delors Report and ends with the Madrid Summit of December 1995, which set January 1999 as the starting date for the launching of the euro, the irrevocable fixing of the parity rates of the currencies of the Member States selected to join the monetary union. At this summit, the single currency was given its new name – the euro, replacing the old currency unit, the ecu. The second phase runs from the aftermath of the Madrid Summit until January 2002, when euro notes and coins were put into circulation in the euro area. See Table 1 for a summary of the major political decisions 1989-2002 leading to the creation of the euro.

A pivotal point in the debate occurs around 1996-97 when the euro emerges as a likely future currency. Thus, in the years after the Madrid Summit the character of the debate in the United States changed, as much of the uncertainty concerning the single currency receded, making this an appropriate dividing line for our discussion. However, the significance of the dividing line between the two phases should not be exaggerated. Nor should it hide the fact that most of the discussion in the United States was driven by actual events on the other side of the Atlantic.

All in all, our conclusions are based on about 170 publications, more than 130 of them by academic economists and about 40 by economists working for the Federal Reserve System. See Figure 1 on the frequency of the publications covered. As Figure 1 demonstrates, there are two peaks: the first around 1993 in connection with the Maastricht Treaty and the ERM crisis, the second around 1997 during the run-up to the introduction of the euro in January 1999.

This study is structured in the following way. Section 1 summarizes first the work by Federal Reserve economists, and then the work by US academic economists on European monetary unification in 1989-1996. Similarly, section 2 gives an account of their views in the period 1996-2002. A main conclusion from our survey is that many US economists writing on the single currency in the 1990s, prior to the birth of the euro, were critical or sceptical. We find this surprising as they lived in and benefitted from a large monetary union, that of the US dollar. Why did they not see this when they were writing about a Europe split up into many small currency areas and with a history of traumatic realignments of pegged exchange rates? Section 3 offers an answer to the question that emerges in our survey: Why were US economists so sceptical about the euro? Section 4 concludes.

The title of our report is inspired by Rudiger Dornbusch’s (2001a) classification of US commentators on the euro as falling into three “camps”, which he described with the following three arguments: It can’t happen, It’s a bad idea, and It can’t last.

1. Laying the foundations of the single currency 1989-1996

The views and comments by US economists were driven by the process of monetary unification in Europe as summarized in Table 1, starting with the Single European Act signed in February 1986. The act aimed at completing the internal market by 31 December 1992 by removing all barriers to the free movement of capital, labour, goods and services between Member States. Following this decision, when capital was free to move across borders, an important step had been taken towards monetary unification. The Delors report of April 1989 recommended the creation of the Economic and Monetary Union (EMU) in three stages. The Madrid Summit of the European Council in June 1989 agreed to begin stage one of EMU on 1 July 1990.

In December 1991, the Maastricht Treaty was signed, laying down the rules for the transition to monetary union in the form of a number of convergence criteria. In short, these were based on the rate of inflation, long-term interest rates, membership of the exchange rate mechanism (ERM) of the European Monetary System (EMS) for at least two years before entry, the size of the government budget deficit and of government debt relative to GDP.[7] The Maastricht Treaty aimed for a gradual nominal convergence for the future members of the monetary union.

The process of monetary unification leading to the Maastricht Treaty was facilitated by several developments such as the demise of the Soviet Union, German re-unification and growing nominal exchange rate stability within Europe contributing to a unique window of opportunity to move towards a single currency.[8]

Danish voters rejected the Maastricht Treaty in a referendum in June 1992, contributing to widespread exchange rate speculation in the autumn of 1992 and 1993. The narrow exchange rate bands of the European Monetary System were eventually abandoned. (See Table 2 for a summary of the ERM crisis).

The ERM crisis was viewed by many as undermining the plans for a single currency. However, the political commitment to monetary union remained in force. In 1995, the European Council decided at a summit meeting in Madrid on the final timetable for the introduction of the single currency, now officially called the euro, and set the start of stage 3 for January 1, 1999. On that date, the exchange rates of the currencies of the members of the monetary union were irrevocably locked together. Three years later, euro notes and coins were put into circulation in all participating Member States.

1.1. Federal Reserve economists, 1989-1996

The events summarized in Table 1 and Table 2 had a strong impact on the Federal Reserve economists. Their discussion covered two broad areas: first, the move towards a single market and monetary union and, second, after the ratification of the Maastricht Treaty, the likelihood of the single currency actually being established, which one headline expressed as follows: "EMU: Will it fly? "[9] Table 3 summarises the views of Federal Reserve economists. In what follows, we focus on important or representative writings by Federal Reserve and academic economists, rather than

[7] The convergence criteria stated that (1) the rate of inflation of a Member State must not exceed by more than 1.5 percentage points the average inflation rate for the three best performing Member States, (2) the nominal long term interest rate of a Member State must not exceed by more than 2 percentage points the average nominal long term interest rate of the three best performing states, (3) the budget deficit must not exceed 3 percent, and total debt 60 percent of GDP, and (4) the exchange rate of the Member State must have been held within the Exchange Rate Mechanism of the European Monetary System for a period of two years without serious pressure on the exchange rate.

[8] For an account of these developments see for example Gros and Thygesen (1998) and Maes (2007).

covering every piece of writing listed in the tables or the references.

(1) The move towards a single market and a single currency

Federal Reserve economists provided a number of factual accounts of the march towards the single market and the single currency, focusing on institutional details. Their aim was to describe what was going on in Europe to an American audience, sometimes considering the impact of European economic integration on the US economy and on US firms. Economic analysis in their writings was generally limited.

Janice Boucher (1991) argued that the establishment of the internal market by December 1992 and of a European monetary union should be viewed as two complementary measures. A common currency would benefit the common market. She considered monetary unification to be a process distinct from the single market. Her discussion was based on a straightforward cost-benefit calculus, which focused on potential benefits. In a similar study, Linda Hunter (1991) examined the effects of the elimination of regulatory barriers in Europe and the implications of this for the United States. Overall, she concluded that the internal market would benefit European consumers and US firms operating in Europe.[10]

During this period, Federal Reserve economists generally regarded the relationship between the single market and monetary unification as a positive one. Lee Hoskins (1989), Michael Chriszt (1991, 1992) and Reuven Glick (1991) all concluded that the completion of the internal market and the move towards EMU would confer significant economic benefits on Member States in the long run. Glick (1991) highlighted Europe's lack of a federal system of taxation as a problem, as factor mobility in Europe was low.[11]

The Maastricht Treaty laid the foundation for a discussion of the future institutional organization of the EMU. Usually, this discourse, as in Paula Hildebrandt (1991), reported on the different steps towards monetary union. Hildebrandt (1991) identified the possibility of a two-speed approach to EMU being applied because of differences

[9] Title borrowed from Pollard (1995).

[10] She quoted the findings of Emerson et al. (1988) that the completion of the single market would result in a decrease in imports from outside Europe of between 7.9 and 10.3 percent. See also Rolnick and Weber (1990) for a broader, historically based analysis of the rationale for fixed exchange rates.

[11] Glick (1991, p. 2) stated that “factor mobility is now and is likely to remain much lower than in the US because of Europe’s greater social, linguistic and cultural diversity”.

across Member States. Adopting a political economy approach, Carl Walsh (1992) was sceptical of the ability of the future European Central Bank to operate as a wholly independent monetary authority. After inspecting the historical record of monetary unions, Robert Graboyles (1990) concluded with regard to EMU that "A successful monetary union requires that the countries involved gain from the union agreement and it requires institutions which enforce the agreement once it is reached" – a rather general conclusion, lacking specific recommendations on how EMU should be organised.

(2) EMU- will it fly?

As the planning for the single currency continued after the ERM crisis in 1992-93, Federal Reserve economists turned their attention to the likelihood of establishing the single currency.[12] Gradually this discussion acknowledged that a European single currency would also have implications for the dollar and the global monetary system.

Patricia Pollard (1995) evaluated the convergence criteria as set out in the Treaty of Maastricht. As only two Member States (Germany and Luxembourg) satisfied all the criteria in 1994, she considered the prospects of EMU becoming fully operational before the end of the 1990s to be remote. In her view, "based on the five convergence criteria, it is almost certain that a majority of the EU countries will not be ready for monetary union when the inter-governmental conference is held in 1996". The introduction of the single currency in 1997 was impossible to achieve. The most likely scenario was that EMU would be postponed by at least two years.[13] Pollard (1995) concluded that, unless the convergence criteria were interpreted with more flexibility, the entire EMU project would be significantly delayed.[14]

Even after the Madrid Summit in December 1995, the concept of a multi-speed transition to monetary union was considered as an option by Michel Aglietta and Merih Uctum (1996); they held that such a transition would involve a small group of countries forming the initial core of the monetary union, with other countries joining over time. The idea of a multi-speed transition to EMU was supported by a model

[12] In addition to the Danish rejection of the Maastricht Treaty in June 1992, ratification was also delayed due to a legal challenge mounted in the German constitutional court (The Brunner Case). The Maastricht Treaty eventually came into force on 1 November 1993 in Germany.

[13] Pollard (1995) viewed Portugal, Spain and Greece as the Member States that faced most difficulties in meeting the convergence criteria.

[14] On this account, the US debate likely mirrored the discussion in Europe about delaying the introduction of the single currency.

developed by Sean Craig (1994).

The implications for the global position of the dollar as a result of the introduction of single European currency were discussed at this early stage by Karen Johnson (1994), Michael Leahy (1994) and Hali Edison and Linda Cole (1994). They held that the single currency would not present a challenge to the dollar in the foreseeable future. Similarly, the earlier work of Gary Schinasi (1989) concluded that a single European currency of whatever kind could only compete with the dollar for reserve currency status if a set of crucial issues were resolved.[15]

Overall, Federal Reserve economists concentrated on describing the process of economic and monetary integration in Europe - typically in briefs of a few pages in length. They maintained a positive attitude to EMU and the single currency, even though they felt that a European monetary union was likely to be delayed.[16]

1.2. US academic economists, 1989-1996

The US academic economists focused on weaknesses and problems in the monetary integration process, usually in long papers involving models and econometric tests. They were strongly inspired by the optimum currency area (OCA) approach of Robert Mundell (1961). They expended great effort in bringing OCA-theory to bear on the feasibility and desirability of a single currency, where attempts were made to measure how close the EU Member States, or a subset of them, were to an optimal monetary union in the sense of meeting the various OCA criteria.

US academic debate in this period dealt with four main issues, although many contributions addressed more than one issue at a time: (1) the Maastricht Treaty, (2) OCA theory, (3) fiscal federalism and other lessons from the US fiscal and monetary experience, and (4) the political economy of EMU. As these issues are closely interrelated, it is difficult to draw sharp dividing lines between them.

[15] Here, Schinasi (1989) discussed the determinants of the demand of and supply for the potential reserve currency, the predictability of such determinants and the implications of a unified European monetary policy for U.S. monetary policy.
[16] At an early stage Estrella and Mishkin (1995) discussed monetary policy issues facing the European Central Bank, comparing ECB with the Fed.

Nevertheless, we use this classification of the topics to simplify our summary of the many contributions.

(1) The Maastricht Treaty

The Maastricht Treaty inspired much discussion. A key component of the debate in the early 1990s concerned the variable-speed approach to EMU, reflecting the view that if EMU was going to happen, then the most likely viable strategy to achieve monetary integration was to allow Member States into the monetary union at different points in time. Dornbusch (1990), Peter Kenen (1992), Tamim Bayoumi and Barry Eichengreen (1993) and John Letiche (1992), among others, concluded that a multi-speed approach was to be expected, albeit with slightly differing combinations of Member States. Letiche (1992) concluded that the most likely scenario would be the establishment of a single currency based on two or three country groupings according to their abilities to fulfil the convergence criteria, with each grouping implementing a different timetable for entry into the monetary union.[17]

Many academic economists questioned the economic rationale behind the convergence criteria of the Maastricht Treaty.[18] For example, Kenen (1992) was critical of the convergence criterion for exchange rate stability, fearing that this might cause some Member States to devalue prior to entering the monetary union.[19] The fiscal convergence criteria and the Maastricht Treaty provisions for policy co-ordination by setting up a system for surveillance over national policies rather than collective policy formulation was another source of debate.[20]

Evaluating the 'excessive deficits' provision of the Maastricht Treaty, Frankel (1993, 6) suggested that "EMU membership, even if not intrinsically connected to fiscal deficits, might be intended as a reward or an incentive for good fiscal behaviour". He viewed the fiscal provisions of the Maastricht Treaty as a 'test of will' designed to allow Member States to express how strongly they wanted to become members of the EMU.[21]

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[17] See among others Giovannini, Cooper and Hall (1990), Arndt and Willet (1991) and Eichengreen (1993) for broad examinations of the prospects for EMU.

[18] See for example Frankel (1992) and Froot and Rogoff (1991).

[19] No such devaluations occurred when the euro eventually was launched in 1998-99.

[20] See Kenen (1992) for an overview of the fiscal policy debate and Hutchison and Kletzer (1995) on the use of fiscal convergence criteria.

[21] Frankel (1993, p. 8) noted that "the fiscal criteria are less directly relevant to the Optimum Currency Area question than the other Maastricht criteria. But precisely because they are so difficult, they offer a test of strength and will. They even more seriously than a referendum force the constituencies within a country to confront the question of how badly they want EMU".

The Danish rejection of the Maastricht Treaty in June 1992 and the ERM crisis in 1992-93 contributed to a pessimistic view of the Maastricht timetable.[22] The ERM crisis prompted a number of comments. It was viewed as the outcome of incomplete harmonisation of national economic policies, as discussed by William Branson (1993) and Dornbusch (1993), and as illustrating the vulnerability of pegged exchange rates to self-fulfilling speculative attacks as analysed by Barry Eichengreen and Charles Wyplosz (1993).

Following Denmark's rejection of the Maastricht Treaty, Eichengreen (1992b) - acknowledging the gains from EMU - suggested a set of modifications to the Treaty in order to ensure that the costs of monetary union would be outweighed by the benefits. Eichengreen (1994a) stressed that the failure of the Maastricht Treaty to include any provisions regarding fiscal federalism posed serious problems. Barry Eichengreen and Jürgen von Hagen (1996) challenged the view that borrowing restrictions were an appropriate means for preventing Member States from borrowing too much.[23]

Considering potential scenarios for the future EMU in a post-ERM crisis environment, Barry Eichengreen and Jeffrey Frieden (1994) held that an EMU embracing all twelve Member States by 1999 was unlikely to occur. To them the most likely scenario would be the establishment of a “mini-EMU” outside the scope of the Maastricht Treaty, comprising France, Germany and some of their smaller northern European neighbours. They acknowledged the perilous political viability of such a scenario.[24] Table 4 summarises the views of academic economists.

(2) Optimum currency area theory

Most of the research on the single currency was inspired by the optimum currency area (OCA) theory as developed by Robert Mundell and others in the 1960s and 1970s.[25] The original OCA approach looks at two regions (countries) facing the

[22] See Meltzer (1990), Folkerts-Landau and Garber (1992) for a pre-ERM crisis assessment of the EMS and the EMU project and Eichengreen (2000b), Kenen (1995) and Wachtel (1996) on the Maastricht Treaty after the ERM crisis.

[23] Hutchison and Kletzer (1995) argued that economic efficiency considerations will lead to fiscal federalism under EMU. See also Wildasin (1990) and Frankel (1993).

[24] Salvatore (1996) believed EMU by the end of the 1990’s was possible, but far from certain, due to the overarching danger of asymmetric shocks.

[25] Mundell (1961), McKinnon (1963) and Kenen (1969) are the key building blocks in this literature.

choice between a permanently fixed exchange rate (a currency union or a monetary union) and a fully flexible exchange rate. The choice presents itself as a trade-off between the increased efficiency in cross-border transactions resulting from the use of a single currency and the macroeconomic loss of national monetary policy independence through the surrender of the national currency. A cost-benefit calculus determines the selection of the preferred exchange rate regime.

The OCA paradigm was adopted to examine the extent to which European countries fulfilled a set of criteria of optimality as regards, inter alia, trade openness, factor mobility and incidence of asymmetric shocks. A study by Bayoumi and Eichengreen (1993), developing this approach, had a strong impact on the debate, inspiring much work. It was also used as a framework for comparing the European economy with the US economy, in which the US was used as a benchmark of a successfully functioning monetary union.[26]

Eichengreen (1991) found evidence that real exchange rate variability was three to four times higher within the EU than within the United States. He also detected a greater correlation of shocks in North America than in Europe. Using estimates from time series models of regional unemployment, Eichengreen (1990a and 1991) established that labour mobility was greater within the United States than in Europe. He interpreted these results as an indication that Europe was further away from being an optimum currency area than the United States.

The general conclusion from this work based on the OCA framework was that Europe lagged behind the United States in terms of being a suitable monetary union.[27]

(3) Fiscal federalism and lessons from the US experience

Many economists focused on the ability of the US system of fiscal federal redistribution to offset regional asymmetric shocks and on the absence of such a mechanism within the European Union. Xavier Sala-i-Martin and Jeffrey Sachs (1991) concluded from US data that every one dollar reduction in a region's per capita personal income caused a decrease of 34 cents in federal taxes from the region and an

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[26] In the introduction to his collection of studies on European monetary unification, Eichengreen (1997, 1) stressed that the OCA theory served as the "organizing framework" for his analysis. The same holds for almost all US economists estimating the costs and benefits of the single currency in the 1990s.

[27] See among others Bayoumi and Masson (1995), Sala-i-Martin and Sachs (1991), Eichengreen (1990a, 1991 and 1992b), and Bayoumi and Eichengreen (1993).

increase of 6 cents in federal transfers to the region. Thus, within the United States, the overall change in federal fiscal receipts and payments offset 40 per cent of a one dollar decline in personal income.

Similarly, Tamim Bayoumi and Paul Masson (1991) concluded that the US federal fiscal structure offset 28 per cent of every one dollar decrease in regional income. Robert Inman and Daniel Rubinfeld (1992), comparing EMU with the US, found that “with a centralised monetary policy, a substitute fiscal policy to ease the burdens of state specific economic shocks is needed”. These studies stressed that fiscal transfers, whatever the precise figure involved, partially offset regional asymmetric shocks in the United States.[28]

Eichengreen (1990b), in a detailed analysis of the potential lessons for EMU from the U.S experience, concluded that monetary integration would limit fiscal independence. He argued hat the extent of fiscal transfers in the European Union would have to significantly exceed the extent of fiscal transfers in the United States in order to be successful, as regional shocks were likely to be significantly greater in EMU Member States than in the states of the U.S.

Ronald McKinnon (1994) considered the U.S experience by asking the question ‘A common monetary standard or a common currency for Europe?’. He answered that “because it respects the fiscal need to keep national central banks and national currencies in place in highly indebted European countries, a common monetary standard is preferable to a common currency”. He concluded that a monetary union was not the preferred option for Europe.

To sum up, US academic economists suggested that Europe was facing major adjustment problems in case a single currency was introduced.[29]

(4) The political economy of EMU

US academic discussion identified at an early stage the inseparable nature of politics and economics in the European monetary unification process. For example,

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[28] Later the work by Bent Sorensen and his collaborators emphasized risk-sharing and income-smoothing within the United States via financial markets, an effect not considered in the early OCA literature. This mechanism can be regarded as a substitute for fiscal transfers. See for example Sorensen and Yosha (1998).

[29] Eichengreen (1992a) and Krugman (1993) are other examples of the use of the US historical record to discuss the future of the EMU.

Eichengreen and Frieden (1994) stressed “that the decision to create a single currency and central bank is not made by a beneficent social planner weighing the cost and benefits to the participating nations. Rather, it is the outcome of a political process of treaty negotiation, parliamentary ratification and popular referenda”.[30]

This perception of European monetary integration as an inherently political process inspired a move away from a purely economic cost-benefit calculus based on the OCA-approach and towards issues of political security and international relationships. Uncertainty and fear about the political effects of the European integration process led many to question the desirability of EMU. This is illustrated by Dornbusch (1996b) who held that “although approving of the evolution of a European common market, the US is fearful about EMU. The first was seen as contributing to prosperity and thus political stability. The second is seen as carrying a high risk of contributing to a recession and thus political trouble”.

In the early 1990s, Feldstein (1992 a, b) advanced a pessimistic scenario for EMU – a scenario he stayed with throughout the period we are studying. He argued that the adverse political effects of a European monetary union would far outweigh any economic net benefits of the single currency. Stressing security aspects, he questioned the proposition that Germany would be “contained” in a broader European government; he believed instead, that it was highly unlikely that “Britain, France and the other countries of Europe will want to form a continental government in which Germany has the largest population and the strongest economy as a way of limiting Germany’s future power or the military exercise of that power”. He argued that it was highly improbable that Europe would begin the 21st century with a successful monetary union in place.

A similar view was expressed by Anna Schwartz (1993). When asked if she thought EMU would take place, she replied “nothing that has happened in this past year suggests that the great plans for the implementation of a monetary union are likely to be achieved. I just don't see them meeting the basic conditions for its success. I think if you saw political union happening, then you might see monetary union.”

[30] Eichengreen and Frieden (1994) discussed the politics of monetary unification as involving inter-state bargaining, issue linkages, and domestic distributional factors. See also Gabel (1994) and McKinnon (1995) for similar arguments.

The role of politics in the creation of monetary unions was considered by Benjamin Cohen (1994) in a historical exercise. He identified the two crucial political characteristics common to sustainable currency unions in his sample: (1) the presence of a dominant state "willing and able to use its influence to keep a currency union functioning effectively" and (2) the presence "of a broader constellation of related ties and commitments sufficient to make the loss of monetary autonomy, whatever the magnitude of prospective adjustment costs, seem basically acceptable to each partner". His conclusion was that the sustainability of the single currency was based on the political will of the Member States.

The debate on the political economy of EMU during this period solidified two sets of views. One group of economists, like Dornbusch and Feldstein, was convinced that the political price necessary for EMU would prove too high to establish a single currency. A second group looked upon EMU as another step in the European integration process.[31] Little effort was devoted to the likelihood of establishing a single currency in Europe without further political integration.[32]

2. The road to the euro, 1996-2002

At the Madrid Summit in December 1995, the European Council decided on the final timetable for the launching of the euro. In May 1998, the European Council selected the countries which would adopt the euro in January 1999 - the third and final stage of the EMU process. With these steps, the plans for the new currency were firmly settled.

2.1. Federal Reserve economists, 1996-2002

The official adoption of the date for the introduction of the euro marked a shift in the analysis within the Federal Reserve System.[33] From this point on, the new European currency was taken as a matter of fact, or as a very likely outcome.

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[31] Eichengreen and Frieden (1994) is an example of this view.
[32] A notable exception being Richard Cooper in Giovannini, Cooper and Hall (1990). Conversely, Dornbusch (1996b) summed up the whole EMU project as "Euro fantasies".
[33] See for example John Whitt (1997, p. 27) stating "as long as the political leaders in the two largest countries in the EU, Germany and France, are committed to going ahead, the prospects for at least a mini-union beginning in 1999 seem favourable". See also Wynne (1999b).

Discussion in the second half of the 1990s centred on (1) the design of the European System of Central Banks, (2) the costs and benefits of EMU, and (3) the impact of the euro on the position of the dollar and its implications for the USA-Europe relationship.

(1) The architecture of the ECB-system

Much of the US discussion of the design of the European System of Central Banks (ESCB) was based on comparisons with the Federal Reserve System. For example, Mark Wynne (1999a) highlighted the differences between the European and the US central banking systems with regard to the policy mandate, the concentration of power and the decision making structures.[34] The diffuse structure of the ECB's decision making – with the Executive Board being in a permanent minority on the governing council, and the fact that all national central bank governors have a vote in all policy decisions of the Governing Council - was compared to the more concentrated power structures in the existing Federal Reserve System, where the Board of Governors has a permanent majority on the Federal Open Market Committee (FOMC) with a rotating Regional Reserve Bank membership. The Board of Governors also has significant power with regard to the supervision of the actions of regional banks and the appointment processes.[35] By contrast, Article 11 of the ESCB Statute grants the Governing Council control over the Executive Board.

Wynne (1999a), Marvin Goodfriend (1999) and Ellen Meade and Nathan Sheets (1999) all identified the ESCB as having a distribution of power equivalent to the Federal Reserve prior to the adoption of the Federal Reserve Acts of the 1930's.[36]

Wynne (1999a) argued that the unambiguous policy mandate of the European Central Bank will aid its long term credibility, but that the broad diffusion of power may prevent it from resolving future conflicts between national interests. Both Wynne (1999a) and Marvin Goodfriend (1999) identified the ESCB as having a distribution

[34] Article 105 of the Maastricht Treaty (1992) states that "the primary objective of the ESCB shall be to maintain price stability". The Federal Reserve Act, Section 2A.1, sets out the Federal Reserve's mandate as "The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregate commensurate with the country's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices and moderate long term interest rates".

[35] The Federal Reserve Act, Section 4.20, gives the Board of Governors the authority to supervise the activities of the regional reserve banks, to approve their budgets and the appointment of their presidents. The Board of Governors also appoints three of the nine directors of the regional reserve banks.

[36] Meade and Sheets (1999, 66) concluded that "Europe may do well to heed the Fed's history. Much more decentralized in structure and operational responsibilities than the Fed, the ESCB must avoid any tendency to promote the national economic situation".

of power equivalent to the Federal Reserve prior to the adoption of the Federal Reserve Acts of the 1930s.

The two-pillar strategy of the ECB, with its simultaneous focus on price stability and on the money stock, stimulated considerable debate.[37] The conclusions drawn were mixed. Carol Bertaut and Murat Iyigum (1999) held that "the ECB's choice of a flexible approach to monetary policy making was pragmatic. The need for the ECB to be flexible in the short run makes its policy setting less transparent". However, Wynne (1999a) cautioned that the "adoption of a mixed strategy might seem to defeat the purpose of articulating a strategy in the first place".

Marvin Goodfriend (1999) and Jeff Wrase (1999) found the ECB to be accountable and transparent. However, Jane Little (1998) contended that, although the ECB was required to come before the European Parliament, and notwithstanding the willingness of executive board members to answer to the Parliament on a quarterly basis, the ECB would still suffer from a significant accountability deficit, as no political body has the authority to abolish the ECB.

Ellen Meade and Nathan Sheets (2002) established that Federal Reserve policymakers did take regional unemployment into account when deciding monetary policy. Applying this result to the ECB, they stressed the possibility that central bankers, when meeting in Frankfurt, could be nationally biased by allowing regional considerations to influence euro area monetary policy. They concluded that regional biases of all policymakers ought to be considered in any debate on potential reforms of the ECB's Governing Council.[38]

There was unanimous agreement regarding the independence of the ECB. Little (1998), Goodfriend (1999), Wrase (1999) and Wynne (1999a) among others concurred that the high degree of independence enjoyed by the ECB was conducive to long-term low inflation performance and long-run credibility. Wynne (1999a) and Wrase (1999) alluded to the fact that both the members of the Executive Board (with

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[37] As outlined in the ECB Press Release on 13/10/1998 entitled "A stability-orientated monetary policy strategy for the ESCB". This strategy rests on two pillars: first, a prominent role for money - this is signaled by the announcement of a reference value for the growth of broad money supply, and second, a broadly based assessment of the outlook for future price developments and the risks to price stability in the euro area. See also Bertaut (2002).

[38] The Governing Council is the highest decision making body of the ECB, comprised of the six members of the Executive Board and the governors of the national central banks of the euro area. Each member of the Governing Council has one vote in policy decisions. The key task of the Governing Council is to formulate the monetary policy of the euro area.

non-renewable eight year terms) and the Governors of National Central Banks (with renewable five year terms) were appointed for relatively long terms, thus strengthening central bank independence. However, some studies viewed the ambiguity in the Maastricht Treaty over exchange rate policy as a major potential threat to the independence of the ECB. This ambiguity could spark a conflict between exchange rate stability and price stability.[39]

(2) The costs and benefits of EMU

The discussion within the Federal Reserve concerning the costs and benefits of European monetary union followed the lines of the standard academic debate on the advantages of a fixed exchange rate. Ed Stevens (1999), for example, viewed the costs of membership in terms of surrendering a pegged rate as being more than offset in the long run by the elimination of transaction costs, by increased transparency of the price discovery process and the reduction of exchange rate uncertainty.[40]

Gwen Eudey (1998) considered the potential dangers associated with a permanently fixed exchange rate regime (a monetary union). She acknowledged that the loss of an independent monetary policy to counter asymmetric shocks necessitated adjustment occurring “through changes in wages or through the movement of workers from one country to another”. The long run success of the single currency depended on the degree to which prices and wages were flexible and on the ability of labour to move across national borders. She suggested that “member countries may find it necessary to institute international tax and redistribution policies through growth of the European Union’s budget to allow for regional differences in policy stimulus or restraint”.

The linkages between the monetary policy of the ECB and fiscal policy were covered by among others Jerry Jordan (1997). He stated that the overall fiscal position of all the Member States was likely to affect the credibility of the common currency. In his opinion, the ability of national fiscal authorities to maintain tight discipline would ultimately determine the success or failure of the single currency. The “separation of monetary policy from the conduct of fiscal policies will place stringent constraints on

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[39] Specifically Goodfriend (1999) and Wynne (1999a).
[40] See also Klein (1998) and Whitt (1997).

individual Member States”.[41]

(3) The impact of the euro upon the dollar

In a speech in 1997 on US perspectives on EMU, the then president of the New York Federal Reserve Bank, William J. McDonough, stated that it “would be a mistake to think that the United States looks at this prospect with concern, as if the introduction of the euro could somehow compromise the ability of the United States to continue to trade and conduct financial transactions with the rest of the world”.[42] In his opinion, the euro would only have an impact on the dollar as the predominant means of exchange in international financial transactions in the long run: “it seems safe to assume that significant changes in the international role of the dollar and the functioning of the international monetary system would occur only gradually and surely in a manner that could be easily coped with”. This appears to have been the general view within the Federal Reserve System in the late 1990s.

Federal Reserve research on the dollar-euro relationship was largely based on reviews of the functions of an international reserve currency. Examining the first two years of the euro, Pollard (2001) noted little change in the role of the dollar as an exchange rate peg for third countries or as the globally favoured reserve currency. She concurred with the McDonough view (1997) that the emergence of the euro as a truly international currency and companion for the dollar can only be achieved gradually.

Pollard (2001) acknowledged that the position of the dollar as the leading international currency depended primarily upon the US ability to avoid financial crises and to maintain strong economic performance. Both McDonough (1997) and Pollard (2001) concluded that the successful establishment of the euro on the world’s financial markets and the completion of EMU opens up a whole array of new benefits for US firms in trade and finance.

The consequences of the euro for the dollar as the global currency were examined by David Gould and Fiona Signalla (1997). They viewed the introduction of the euro as probably leading to a significant drop in the international holdings of dollars. Justin

[41] See also Gramlich and Wood (2000) and Spiegel (1997) on the economic arguments for the Stability and Growth Pact.
[42] “A US Perspective on Economic and Monetary Union in Europe”, speech before the Association of German Mortgage Banks, Frankfurt, Germany, November 17, 1997. See also Guynn (1998) and Meyer (1999).

Marion (1998) identified a larger market and the removal of obstacles to trade freely within the EU’s borders as the future benefits of European monetary union to US businesses. He believed that the dollar's position as the preferred currency was unlikely to be supplanted in the short to medium term by the fledging euro currency “because the dollar has a strong history as a store of value and is so widely used and accepted, it is unlikely that it will be supplanted as the preferred reserve currency any time soon.” Adam Zaretsky (1998), as well as Gould and Signalla (1997), held that the impact of the euro on the world’s financial system remained highly uncertain and depended solely on the perception by investors of the success or failure of the European monetary union after the introduction of the single currency. Gerald Dwyer and James Lothian (2002) concluded that the replacement of the dollar by the euro is dependent on inter alia the stability of the European monetary institutions.

The published views of economists within the Federal Reserve on the EMU during this period were consistent with the official position of the US government, which held that the introduction of the euro would do little to alter the relative strength and position of the dollar in the short term.[43] The attitude of consecutive US administrations was one of welcoming the creation of a single currency within the European Union while acknowledging that “the euro is not likely to cause a sudden decline in the dollar’s use as an international currency in the near future, and any shift away from the dollar will be gradual”.[44] The official position of the US government was that the euro was a sign of the progress made by the European Union.

2.2. U.S academic economists, 1996-2002

The views of academic economists were influenced, just like those of Federal Reserve economists, by the plan for the single currency to commence on 1 January 1999. The scenario of “it can’t happen” disappeared from the debate while the arguments based on “it’s a bad idea” and “it can’t last”, as identified by Dornbusch (2001a), remained on the agenda. The debate centred on the following three distinct but highly related

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[43] See for instance the speech by Treasury Secretary Lawrence Summers, given to the Euromoney Conference, New York, April 1997 and the 1999 *Economic Report of the President*, pp. 290-305.

[44] In a document entitled “The Euro-Implications for the US (March 2000, p. 25/26). The 1999 *Economic Report of the President* spoke of the euro in the following terms (p. 305): “The United States salutes the formation of the European Monetary Union. The United States has much to gain from the success of this momentous project. Now more than ever, America is well served by having an integrated trading partner on the other side of the Atlantic”.

issues: (1) politics versus economics in the EMU, (2) the euro area as a non-optimal currency area, and (3) the euro as a challenge to the dollar.

(1) Politics versus economics in the EMU

As it became more certain that the single currency would be established, there was a hardening of the divide between economists supportive of EMU and those who were critical of it. Some economists, such as Martin Feldstein, argued consistently that EMU would prove an "economic liability" with overall negative economic consequences: to impose a single interest rate and fixed exchange rates on countries characterised by inflexible wages, low labour mobility and lack of centralised fiscal redistribution, would achieve nothing except increasing the level of cyclical unemployment among the members of the single currency area.[45]

Feldstein viewed EMU as an economic tool for political leaders in Europe to further their agenda for a federalist union, as a first stage in the creation of a United States of Europe with a single foreign and military policy. He regarded such a construction as having a destabilising influence impact on Europe and on world peace. In his opinion, national political interests in France and Germany provided the driving force behind EMU: for France in terms of seeing the EMU as a mechanism for gaining equality with Germany, and for Germany in terms of wanting a deepening of political and fiscal integration.[46]

Considering the long term consequences of the single currency, Feldstein (1997a) concluded that the inevitable contest for leadership between Germany and France for the dominant influence on EMU would only serve to exacerbate tensions between individual Member States. He believed that the long run sustainability of EMU depended on its contribution to long term political security rather than on any economic success. In his opinion, disintegration in Europe and conflict with the United States should not be ruled out. In a similar vein, Charles Calomiris (1998) suggested that the collapse of EMU was likely, due to structural weaknesses of the EU economies, in particular the potential for future pension system insolvency and

[45] See Feldstein (1997a and b, 1998, 1999, 2000a and b, and 2001) and Feldstein and Feldstein (1998).

[46] Feldstein (1997a) viewed other EU Member States, such as Italy and Spain, as participating in EMU, not due to its questionable economic benefits, but rather due to a combination of the fear of being excluded from the deepening of the political union of the EMU likely to follow the implementation of the single currency, and the belief/fear that countries will be discriminated against in other EU policy areas if they do not join.

banking system weaknesses.

Jeffrey Frieden (1998) suggested that the rationale for Member States joining the euro was overwhelmingly political. He identified three primary factors behind the desire of Member States to join: (a) a fear of being left out of a central EU institution, (b) a fear of losing the support of the pan-European business community, and (c) a fear of the economic consequences of losing the benefit of many years of hard work to get into Europe's monetary club. In a related analysis, Eichengreen (1998b) argued that German fears over inflation will slow down the process of political integration and provide a more permissible application of the Stability and Growth Pact criteria, thereby sustaining the longer term European integration process.

Similarly, Anna Schwartz (2001) viewed the decision to proceed with a monetary union prior to the creation of a more integrated political structure as reflecting a lack of consensus within EU Member States with regard to a deeper political union – i.e. a federal state or a community of nation states.[47] Thomas Willet (2000) regarded EMU as a mechanism to further the process of political integration that had begun in the 1950s. He viewed EMU as a political project driven by misdirected economic analysis, with limited economic benefits for potential members.[48]

Maurice Obstfeld (1997), offering a critical review of the costs and benefits of monetary union in Europe, concluded that although the broad membership of EMU made it highly vulnerable to asymmetric shocks, EMU might succeed economically. This would greatly enhance the process of European integration and generate social and political benefits in the future. In addition, he believed that economic success of the euro would drive political integration.[49]

Eichengreen (1996a) argued that "EMU will happen if policymakers are convinced that currency stability is the only way to solidify the single market and that monetary union is the only way to guarantee currency stability. It will happen if there exists a

[47] In an interview with *The Region*, Federal Reserve Bank of Minneapolis, December 2001.
[48] See also Willet (1999) on the weaknesses of the EMU project.
[49] Obstfeld (1997) noted that "with European economic and monetary union finally underway, potential fault lines are apparent. EMU, it is often said, is at bottom about politics, not economics. Political change is, however, an ongoing, dynamic process; it is a mistake to think that the visions motivating today's European leaders will be enough to sustain EMU indefinitely". See also Obstfeld (1998, 1999).

viable package in which the French get EMU and the Germans get an increased foreign policy role in the context of an EU foreign policy".[50]

Peter Kenen (1998a) reasoned that US attitudes towards the EMU were strongly influenced by the words and actions of European officials involved in the monetary integration process. He held that "Americans tend to evaluate EMU in light of their own preconceptions. Because they repeatedly hear that EMU is a political project - a vehicle for promoting political integration - they conclude that there is no economic rationale for EMU. Helmut Kohl has made some extravagant claims for EMU - which he may truly believe - and they have inspired extravagant rejoinders on my side of the Atlantic".

In December 1998, on the brink of the launch of the euro currency, Paul Krugman (1998a) summarised the state of opinion as follows "for seven long years since the signing of the Maastricht Treaty started Europe on the road to that unified currency, critics have warned that the plan was an invitation to disaster. Indeed, the standard scenario for an EMU collapse has been discussed so many times that it sometimes seems to long term eurobuffs like myself as if it had already happened". Such a pessimistic view was probably fostered by the propensity of US economists to view the euro as a political project driven by murky motives and based on an insufficient institutional foundation.

(2) The euro area as a non-optimal currency area

James Tobin (1998) provided a concise overview of the factors underlying the scepticism of many US economists towards EMU: the absence of an authority for centralised fiscal redistribution, sticky wages and a monetary policy objective which takes no account of employment, production or growth. His conclusion that the euro area is "much less equipped" than the US monetary union to deal with potential inter-regional or wider asymmetric shocks mirrored the initial US consensus of the euro area as a non-optimal currency area. Similarly, Dominick Salvatore (1997) concluded that due to Member States limited labour mobility and inadequate fiscal redistribution

[50] Taken from the annual Finlay-O'Brien lecture delivered at University College, Dublin, Ireland on October 7th 1996 and elaborated in Eichengreen and Ghironi (1996), Bayoumi, Eichengreen and von Hagen (1997) and Eichengreen and von Hagen (1996). See also Eichengreen (1996b) and Makin (1997).

a major asymmetric shock would collapse the entire euro area.[51]

However, in the second half of the 1990s, the discussion of European monetary unification began to shift from investigating the fulfilment of the OCA-criteria by the euro area (usually compared to the US dollar union) towards a more critical view of the use of OCA-theory for assessing the costs and benefits of monetary unification. Did this theory really provide a proper framework to consider the merits and demerits of a monetary union of EU Member States? Gradually a no answer was emerging.

The strongest objections to the standard use of the OCA-paradigm when assessing the future viability of the euro area were developed in a series of papers by Frankel and Rose (1996, 1997 and 2000). They argued that the OCA-criteria should be viewed as endogenous. Once a country becomes a member of a monetary union, its economy adjusts to the new environment. Membership of a monetary union is likely to boost trade within the union and thus increase the correlation of the national business cycles, bringing it closer to fulfilling some of the OCA-criteria. The empirical work by Frankel and Rose gave strong support to this interpretation. Their conclusions cautioned against a mechanical application of the OCA-approach to judge the suitability of a country for monetary union membership.

Bayoumi, Eichengreen and von Hagen (1997), reviewing the literature on EMU and OCA theory, concluded that with "OCA theory, while providing a useful template for research and helping to structure the debate over EMU, it remains difficult to estimate the projects benefits and costs". This conclusion supported the findings of Bayoumi and Eichengreen (1997) and Eichengreen (1996b) that the usefulness of OCA theory to evaluate EMU was severely limited by the difficulty of operationalising this body of theory.[52] Associated with these findings, Dornbusch (1997) highlighted that the concentration of debate on fiscal criteria becomes redundant once an independent central bank is created with a specific mandate.

[51] See also Frieden (1998), Willet (1998a), Salvatore (1998) and Salvatore and Fink (1999) as applications of the OCA approach to European monetary integration.
[52] Bayoumi and Eichengreen (1997) tried to operationalize OCA theory by analyzing the determinants of exchange rate variability by relating it to asymmetric output disturbances, the dissimilarity of the composition of exports of different countries, the importance of bilateral trade linkages and relative economic size. Eichengreen (1996a), while stressing the usefulness of this approach for ranking candidates for EMU, admitted that it was impossible to say whether the costs and benefits dominate for an individual country or the group as a whole. See also Eichengreen and Wyplosz (1998) and Eichengreen and Frieden (1998). Kouparitsas (1999) provides the only Federal Reserve analysis of this subject during this period as far as we have found.

Conversely, McKinnon (1997) viewed EMU as the perfect opportunity to impose restrictions on member states ability to overspend, thereby achieving fiscal retrenchment.

Kenen (1998a) argued that the debate around EMU based on OCA theory was misleading, as the OCA approach concerned the choice between a floating and a fixed exchange rate regime, whereas the members of the European Union were faced with a choice between the quasi-fixed exchange rates of the European Monetary System and the euro. In his opinion, by applying the OCA criteria to Europe, US economists became biased against the EMU as they viewed a non-existent system of flexible exchange rates, not of the actual system of pegged rates, as the alternative to the single currency. The result was a high degree of misunderstanding in the United States of the economic costs and benefits of EMU.

Similarly, Frieden (1998) argued that the practical insights offered by the static OCA theory were limited by the fact that it was difficult to measure accurately the long-run dynamic effects of monetary unification and to estimate the welfare effects of a single currency.

When asked about the future of the world currency system in an interview in May 2000, Milton Friedman (2007, p.140) expressed deep concern about the euro: “From the scientific point of view, the euro is the most interesting thing. I think it will be a miracle - well a miracle is a little strong. I think it's highly unlikely that it's going to be a great success. … But it's going to be very interesting to see how it works”. Friedman stressed that lack of labour mobility among Member States such as Italy and Ireland in the euro area would undermine a single monetary policy.

(3) The euro and the dollar: A struggle for dominance?[53]

The sharp fall in the value of the euro against the dollar in 1999-2001 - see Figure 2 - triggered a vibrant debate about the euro and the dollar. Prior to the launching of the euro in January 1999, the discussion focused on the potential for a massive rebalancing of portfolios away from dollars and into euros. This forecast was founded on the arrival of a currency that represented a zone of economic power similar to that of the United States and on the immediate potential of the euro to challenge the reserve currency status of the dollar. As an example, Fred Bergsten (1997b) argued that, since the euro would create an integrated financial zone larger than the US, the euro would quickly rival and even surpass the dollar as the international reserve currency of first choice.[54]

This is consistent with the views of Mundell (1997, 1998, 1999) who predicted that the euro would rival the dollar as a global currency and that the euro-dollar exchange rate would become the most important in the global currency markets. Mundell (1999) forecasted that by 2010 “world foreign exchange reserves will consist of $1.2 trillion in dollars, $1.2 trillion in euros and $0.8 trillion in other currencies. … That meant that US dollar reserves and euro reserves would be roughly of equal size.[55]

Placing EMU in a longer term historical context, Eichengreen (1998a) stressed that should the euro persist in the long term it has the potential to supplant the dollar as the global currency. Other economists were more cautious in their forecasts. George Selgin (2000) noted that if the ECB wanted the euro to be a global currency, then low inflation policies would persist while the euro established itself as a worthy successor to the German Mark.[56] He concluded that “Should the euro fail to earn this status, however, the consequences will not be limited to higher European inflation. The dollar would once again reign unchallenged in the market for international currency”.[57]

Offering a broader perspective of US economic fortunes in the 21st century, Krugman (2000) noted that “while the euro surely will rival the dollar as an international currency, the benefits for Europe will be modest”. This is consistent with Frankel (2000a) and earlier work by Krugman (1998a, 1999a), who considered it likely that the dollar would lose out gradually to the euro.

[53] Title borrowed from Kenen (2002).
[54] Bergsten (1997a, 1999), McKinnon (2001a and b), Mussa (1997, 2000) and Salvatore (2000) also considered this issue.
[55] This forecast proved incorrect as the dollar is still the number one reserve currency.
[56] See also Prati and Schinasi (1997) and Masson and Turtleboom (1997). Masson and Turtleboom (1997) concluded that the dollar would remain a dominant international currency in the absence of political and economic meltdown in the United States.
[57] See Eichengreen and Ghironi (1996) for a historical analysis of the rise and fall of reserve currencies. Eichengreen held that the institutional structure of the European System of Central Banks would prevent the euro from turning into an international currency. See also Frankel (2000a and b), Scott (1998), Devereux and Engel (1999), Devereux et al. (1999) and McKinnon (2002).

Both Eichengreen (1998d) and Krugman (1998b) questioned the benefits to the US of having the dollar as the global reserve currency over the past half century. In a broadly similar analysis, Cohen (2000) argued that the key drivers of the success of the US dollar - political stability, capital certainty, exchange convenience and a broad transactional network - would probably not be challenged by a huge portfolio re-alignment in favour of the euro, due to prevailing inertia and a high degree of risk aversion.[58]

The underlying causes of the fall of the euro against the dollar in the period 1999-2001 led to varying interpretations in the US. Eichengreen (2000a), reviewing the behaviour of the euro in its first year, noted that while the euro had failed to challenge the dollar as had been forecast by Bergsten (1997b) and others, it had produced an immeasurably strong impact by creating wider and deeper European financial markets.[59] He argued that the decline of the euro in 1999 "does not reflect the incompetence of the ECB or flaws in the design of Europe's monetary union. Rather, it is the response to cyclical asymmetries, between the US and Europe", reflecting the stronger economic performance of the US at that time.[60] This is consistent with the analysis of Dornbusch (2000 and 2001b) who did not view the initial weakness of the euro as an overwhelming worry.

Dornbusch (2001c) offered an further interpretation, arguing that the weakness of the euro was due to a combination of three factors: first, the failure to fully launch the euro immediately on 1 January 1999 (euro coins and notes were not to be introduced until January 2002), and second, the poor communication skills of Wim Duisenberg (the first head of the ECB), and finally, the differences in the performance of the US and euro area economies ("the euro is weak because Europe is weak").

Explaining the rapid fall of the euro against the dollar during its first twelve months in existence, Feldstein (2000a) held that the decline throughout 1999 proved that the

[58] On the distribution of currencies see Cohen (1998 and 1999) and Beddoes (1999).
[59] Ferson and Harvey (1999) viewed the greatest benefit of the euro as reducing the complexity of foreign exchange risk in asset pricing models.
[60] Eichengreen (2000a) noted the "the incompetence of the ECB or flaws in the design of Europe's monetary union" were made up of policy mistakes by an inexperienced ECB Executive Board, the failure of the ECB to release its inflation forecasts, policy disagreements among ECB officials, the exemption Italy was granted from the Stability and Growth Pact and the confrontational attitude of some national politicians such as the German Finance Minister, Oskar La Fontaine. See also Dornbusch et al. (1997) for a similar analysis.

euro was unable to provide European producers with exchange rate certainty. The pre-1999 projections of the euro's strength were based upon political rather than economic fundamentals. The very credibility of the euro had been undermined by the two pillar strategy of the ECB, which left "financial markets confused, an uncertainty that is compounded by the limited information that is revealed about the deliberations of the ECB and by the occasional tendency for the members of the ECB to speak in contradictory terms. It is exacerbated also by the apparent lack of agreement about the significance of the international value of the currency".[61]

Compared to most US economists commenting on the euro-dollar rate, Friedman adopted a relaxed attitude. When asked in an interview in May 2000: "Do you think that the depreciation of the euro is a bad sign?" [It was at about $0.90 at that time], Friedman (2007, p.140) replied: "No, not for a second. At the moment the situation is very clear. The euro is undervalued; the US dollar is overvalued. … Relative to the dollar, the euro will appreciate and the dollar will depreciate."[62]

The management of the euro exchange rate attracted also the attention of Krugman (1999b) and Dornbusch (2001c). Both concurred that the seignorage benefits accruing to Europe as a result of the internationalisation of the euro were minor. Both argued that the euro area should adopt an attitude of benign neglect towards its exchange rate and instead focus monetary policy on domestic (pan-European) objectives like the Federal Reserve System.[63]

Kenen (2002), viewing in retrospect the pre-1999 predictions of an early advent of a tripolar monetary system, noted that the euro-dollar exchange rate had not come to symbolise the struggle for global dominance by the two most powerful protagonists, but rather that "the switch to the euro is most apt to manifest itself as a growing flow demand for euro-denominated bonds, equities and other assets, rather than a once for all stock adjustment of the sort predicted by euro enthusiasts a few years ago". So far this forecast has proved solid.

[61] The Treaty of Maastricht does not give sole power to the ECB for the management of the euro's external value.
[62] Friedman's forecast proved correct.
[63] Krugman (1999b) cites the findings of Portes and Rey (1998) that the sum of the gains accruing from seignorage to be no more than 0.2 per cent of GDP.

3. Why were the US economists so sceptical about the single currency?

The main finding of our survey is that US academic economists were mostly critical of the single currency in the 1990s. By now, the euro has existed for more than a decade. So far, the pessimistic forecasts and scenarios of the 1990s have not materialized. The euro is well established. The euro has not created political turmoil in Europe. It has fostered integration of financial, labour and commodity markets within the euro area. Trade has increased, and so has business cycle synchronization. Inflation differentials within the euro area are presently of the same order of magnitude in the euro area as in the United States.[64]

Why were US economists so sceptical towards European monetary integration prior to the physical existence of the euro? We suggest that several factors contributed to this attitude.

First, the thinking of US economists was deeply influenced by the traditional OCA theory – actually a North American innovation. This was the main analytical tool used by them for analyzing the benefits and costs of forming a monetary union.[65] The OCA paradigm gave a negative bias to the evaluations of the single currency by stressing a number of costs of unification, while ignoring dynamic, political and institutional aspects of monetary integration.[66] The original OCA approach was "backward-looking" as stressed by Mongelli (2005). All OCA-inspired studies of Europe - and there were many of them - concluded that the potential members of a common European monetary union simply did not fulfil the various criteria for an optimum currency area as regards labour mobility, cross-border fiscal transfers, business cycle movements, incidence of shocks, etc. Sometimes this result was combined with the qualifier that a core set of European countries was closer to an OCA than a wider geographical area including periphery countries like Greece and Portugal. A standard conclusion of this strand of work was that the United States was a better candidate for a monetary union than Europe.

[64] See *European Economy* (2008).

[65] Of course, this holds for non-US economists as well. See the survey by Mongelli (2005) for an assessment of the use of OCA theory to analyze EMU.

[66] See also De Grauwe (2003, p. 58) on the bias of the OCA paradigm against unification: “The traditional theory of optimal currency areas tends to be rather pessimistic about the possibility for countries to join a monetary union at low cost”.

Second, the OCA paradigm inspired US economists to apply a static ahistorical approach. US economists generally compared Europe of the 1990s with the US monetary union as the benchmark in their OCA-inspired studies. The use of such a benchmark led to the observation that Europe was less flexible, was less integrated, provided less union-wide fiscal redistribution mechanisms and exhibited less centralized political control than the United States, thus leading to the conclusion that Europe should stay away from monetary unification. They made the mistake of comparing the ongoing process of monetary integration in Europe, with its backlashes, crises, economic and political tensions, with the mature and stable state of US financial and monetary integration, neglecting the fact that the US monetary union was the outcome of a long process of political, financial and economic unification.[67]

Seen from the perspective of the firmly established US dollar union in the 1990s, it was easy for US economists to qualify European attempts to create a single currency as inappropriate and inconclusive. However, the European process of monetary unification since the Delors report appears to be a much more rapid one than its US counterpart. Eventually, US economists lead by Frankel and Rose, came to acknowledge some of the “evolutionary” weaknesses of the traditional OCA paradigm in their work on the endogeneity of monetary unions, making the OCA approach forward-looking as well.

Instead of comparing Europe before the introduction of the euro with the United States of the 1990s, a more proper comparison would be with the future workings of the euro area. Such an approach should also consider whether the US system of fiscal federalism would function more or less efficiently than the EMU system, where fiscal policy is designed according to regional (national) preferences within the framework of the Stability and Growth Pact.

Third, the conventional OCA paradigm rests on a comparison between the costs and benefits of a fully flexible exchange rate and a permanently fixed rate. However, Europe was never faced with a choice between these two extreme cases, since a flexible exchange rate was not a serious option for the majority of the countries

[67] Rockoff (2000) concluded that it took the United States about 150 years to form an optimum currency area. Rockoff’s conclusion suggests that the US monetary situation after the American Revolution in 1776, with different states issuing their own currencies, may be an interesting comparison with the European situation in the 1990s.

considering monetary union. Instead, the alternative to a monetary union of permanently fixed rates was a system of fixed but adjustable rates, sometimes described as 'semi-permanent exchange rates'.

This system was discredited in the 1970s, 1980s and early 1990s as it gave rise to frequent exchange rate realignments that were politically costly, and consistently creating tensions among European countries. Countries avoided the necessary exchange rate adjustments for as long as possible. This negative experience of semi-fixed exchange rates contributed to the process of monetary unification in Europe.

Still, the cost-benefit calculus of US economists was not based on the comparison between the costs and benefits of a system of permanently fixed exchange rates, that is monetary union, and the system of semi-permanent exchange rates that existed in Europe prior to monetary unification, because such an arrangement was not dealt with by the traditional OCA paradigm. Such a comparison would have been a more appropriate exercise than that between a monetary union and the non-existing option of perfectly flexible exchange rates. In all probability, it would have given rise to a more positive US view of the single currency. Thus, being analytical prisoners of the OCA-approach, US economists were inclined to reject monetary unification without paying sufficient attention to the costs and benefits of the existing monetary arrangements in Europe. Their theoretical perspective made them look elsewhere.

Fourth and finally, the pure OCA paradigm led US economists astray as it gave no role to political economy factors such as the preferences for deeper European integration, the wish to avoid exchange rate tensions and move towards more stable price levels.[68] As many US economists believed that the single currency for Europe was primarily a political project, which ignored economic fundamentals stressed by the OCA approach, they feared that the Europeans were building a badly designed monetary union with an expected short lifespan. In addition, the crisis of the European exchange rate system in the early 1990s strengthened the US disbelief in European

[68] This point is stressed by Goodhart (1998) stating that in the OCA approach “there is no reason why currency domains need to be co-incident and co-terminous with sovereign states. There is no reason why such a state should not have any number of currencies from zero to *n*, and an optimal currency area, in turn should be able, in theory, to incorporate (parts of) any number of separate countries from one to *n*.” However, such outcomes are rarely observed. Historically currency areas and nation states coincide as an empirical regularity. See also Bordo and Jonung (1997) on the importance of a historical perspective to understand how monetary unification emerges and dissolves.

monetary integration. Consequently, a permanently fixed rate was perceived as a bad political solution for Europe.

Of course, the single currency is a political project. It was not invented and propounded by the economics profession on the basis of economic theory and models. The whole European integration project after World War II was driven by politics and political will. However, this does not mean that the project is isolated from economic developments and economic thinking. Concerning the single currency, it implies that the OCA theory should not be viewed as a driving force behind the euro and should be used carefully when evaluating the single currency project. The aim of European policy-makers in the 1980s was the accomplishment of a single market. In this context, they saw a common currency as an important step towards a well-functioning common market.

Monetary history suggests that the predictive power of the OCA approach is extremely weak.[69] Monetary unions have not been established according to the OCA criteria. The approach ignores the political and historical factors driving integration. Thus, the OCA approach is too narrowly defined in economic terms to interpret European monetary integration. By adopting the OCA view, US economists were prevented from a balanced understanding of European monetary integration.

Allow us to speculate about two additional - probably minor - reasons for the US scepticism of the euro. First, we suspect that the US scepticism towards the euro was partially driven by political considerations. Some US economists may have feared that the euro would turn out to be a strong competitor to the dollar and that EMU would lead to Europe turning away from transatlantic cooperation, thereby weakening the role of the United States on the global scene. This suspicion may have been fuelled by the fact that claims of this sort were being made in Europe in the 1990s, in support of the single currency.[70]

Finally, economists are trained to find faults with policy proposals and grand projects - the euro clearly belongs in this category - to be critical, in short, to have a scientific attitude. Given this propensity stressed in our professional training, it may be fair to

[69] According to Goodhart (1998), ”OCA theory has little, or no predictive or explanatory capacity. … it is unable to account for the close relationship between sovereignty and currency areas".

conclude that there is a pessimism bias in our world outlook. In addition, the market for pessimistic forecasts is probably more attractive than that for optimistic forecasts. This may account for the fact that we have not been able to find any US economist making a strong case for the euro prior to its birth.

4. Concluding discussion

The process in the 1990s leading to the establishment of the euro is unique– there is nothing similar in monetary and political history. Of course, this made it difficult to judge and forecast the future of the European monetary integration. Still, US economists were attracted as eager commentators to the unfolding of the story of the single currency, applying their models and techniques, impacting on the views in the rest of the world as well.

In this report we have described the work by US economists on European monetary integration from the presentation of the Delors report in 1989 up to the introduction of the euro as a physical "real" currency in 2002. We have highlighted the major issues dealt with by two groups of economists, those employed by the Federal Reserve System and those at US universities - the academic economists.

Our survey demonstrates that economists within the Federal Reserve System focused on the actual operation of the proposed common European central bank and its policies, describing it in fairly neutral and balanced terms. They took a more pragmatic view of the European common currency than the academic economists. They also targeted a less sophisticated audience than the academic economists, writing fairly short, often popular, pieces. Usually, when reporting on the evolution of the new European central bank system, they applied a central bank perspective. They were basically positive towards European economic and monetary integration, at least as compared to the US academic economists.

The academic economists concentrated on the question: "Is EMU a good or a bad thing?" They looked for the answer, first of all, with the help of the optimum currency area (OCA) approach. Their OCA-inspired research resulted in a common view:

[70] See for example Bergsten (1999) for a discussion of the relationship between the US and Europe.

potential EMU Member States were further away from a well functioning monetary union than the United States because of the lack of a pan-European fiscal redistribution mechanism, the low labour mobility in Europe and a higher frequency of regional asymmetric shocks in Europe than in the United States. In particular, weak fiscal federalism in the EU was a source of pessimism for the future of EMU.

The US debate underwent significant changes, continuously evolving in response to actual events, starting in the early 1990s from a rather sceptical view of European monetary integration as being unlikely to happen, or at least not according to schedule, to an acceptance of the euro in the late 1990s, sometimes combined with the prediction that it would not last very long.

The sceptical tone found in the writings of US economists in the first half of the 1990s was fostered by various stumbling blocks in the European integration process. The difficulty in ratifying the Maastricht Treaty, the collapse of the narrow ERM exchange rate bands in 1992, and the economic and political constraints imposed by the convergence criteria featured heavily in the US arguments as to why the single currency was not a viable endeavour.

The December 1995 summit of the European Council, which set the date for the launch of the euro, represents a turning point in US opinion on EMU and the single currency. From then on, the discussion moved away from debating the prospects of EMU actually being achieved towards an acceptance of EMU as an emerging reality according to the prescribed timetable. This awareness is also mirrored in the shift away from the use of the back-ward looking traditional OCA theory towards a more broadly based examination of the future effects of European monetary union on trade and integration.

Although, the conventional OCA paradigm as a vehicle for analysis of the European monetary integration process was being challenged to an increasing extent, the OCA approach maintained its grip over US views on the euro throughout the 1990s. We suggest that the use of the OCA paradigm was the main source of the US pessimism US towards the single currency in the 1990s. The OCA approach was biased towards the conclusion that Europe was far from being an optimum currency area. The OCA paradigm inspired a static view, overlooking the time-consuming nature of the process of monetary unification. The OCA view ignored the fact that the Europe was facing a choice between permanently fixed exchange rates and semi-permanent fixed rates. The OCA approach led to the view that the single currency was a political construct with little or no economic foundation. In short, by adopting the OCA-theory as their main engine of analysis, US academic economists became biased against the euro.

Actually, it is somewhat surprising that US economists, living in a large monetary union and enjoying the benefits from monetary integration, were (and still remain) critical towards the euro. US economists took (and still take) the existence of a single dollar currency for their country to be such a self-evident phenomenon –that, as far as we have seen, not one US economist, inspired by the OCA approach, has so far proposed a break-up of the United States monetary union into smaller regional currency areas in line with the OCA approach. Perhaps we should take this as a positive sign for the future of the euro: once established, it eventually will turn into the normal state of monetary affairs?

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Table 1.	Major steps towards the euro, 1989 - 2002
Date	**Event**
February 1986	The Single European Act is signed
April 1989	The Delors Committee publishes report which calls for the establishment of a single European currency through a three stage process.
June 1989	The Madrid Summit of the European Council agrees that Stage 1 of EMU will start on July 1st 1990 and calls for an intergovernmental conference to work on subsequent stages. Stage 1 includes the completion of the internal market and the removal of all obstacles to financial integration.
October 1990	The Rome Summit of the European Council agrees that Stage 2 of EMU will begin on 1st January 1994.
December 1990	The Dublin Summit of the European Council marks the beginning of the intergovernmental conferences on EMU and political union.
February 1992	Signing of the Maastricht Treaty.
June 1992	A referendum in Denmark rejects the Maastricht Treaty.
September 1992	Britain and Italy are forced to abandon the Exchange Rate Mechanism (ERM).
July 1993	Member States agree to widen the narrow band in the ERM from 2.25% to 15%.
January 1994	Stage 2 starts. The European Monetary Institute comes into operation and begins the move from the co-ordination of national monetary policies to the transition to a common monetary policy. Economic convergence is strengthened through adherence to the “convergence criteria” as set out in the Treaty of Maastricht.
May 1995	The European Commission adopts a Green Paper “On the Practical Arrangements for the introduction of the Single Currency”.
December 1995	The Madrid summit of the European Council reaffirms January 1st 1999 as the date for the irrevocable locking of exchange rate, thus for the introduction of the euro. The euro is officially adopted as the name for the new single currency.
May 1998	Special meeting of the European Council decides that 11 Member States satisfy the conditions for adoption of the single currency.
June 1998	The ECB and the Eurosystem are set up.
January 1999	Stage 3 begins. The exchange rates of the participating nations are irrevocably fixed and the euro begins to trade on financial markets.
January 2001	Greece becomes the 12th Member State to adopt the euro.
January 2002	Euro notes and coins enter into circulation in all participating Member States.

Table 2.	The crisis in the European Monetary System, 1991-1993
Date	**Event**
November 14th 1991	The Bank of Finland, which had maintained an ECU peg, is forced to devalue the markka by 12% due to the collapse of its Soviet trade and a domestic banking crisis.
June 2nd 1992	The Maastricht Treaty is rejected in Denmark
August 26th 1992	The pound sterling falls to it Exchange Rate Mechanism lower limit.
September 8th 1992	The Finnish markka's ECU link severed.
September 13th 1992	The Italian lira devalued by 7% against other ERM currencies.
September 16th 1992	British membership of ERM suspended. Italy suspends foreign exchange market interventions and allows the lira to float. The Spanish peseta is devalued by 5%.
September 20th 1992	The Maastricht Treaty is narrowly accepted in France.
November 19th 1992	Sweden abandons its ECU peg.
December 10th 1992	Norway abandons its unilateral ECU peg.
January 30th 1993	The Irish punt is devalued by 10% within the ERM.
May 14th 1993	The Spanish peseta is devalued by 8%. The Portuguese is devalued by 6.5%.
July 30th 1993	European governments opt for a widening of the narrow band from 2.25% to 15% thus acknowledging the unfeasibility of the narrow band.

Source: Eichengreen (1994, p. 96-101)

Table 3. **A simple guide to Federal Reserve economists on EMU.**			
1989-1996		**1996-2002**	
Topics:	**Author:**	**Topics:**	**Author:**
1992 and the move towards monetary union	Hoskins (1989) Graboyles (1990) Hunter (1991) Boucher (1991) Hildebrandt (1991) Glick (1991) Walsh (1992) Chriszt (1991)	Architecture of the ESCB	Little (1998) Bertaut and Iyigum (1999) Goodfriend (1999) Wrase (1999) Wynne (1999a/b) Bertaut (2002) Meade and Sheets (2002)
EMU: Will it fly? (Likelihood of a single currency)	Schinasi (1989) Chriszt (1992) Craig (1994) Leahy (1994) Johnson (1994) Edision and Cole (1994) Pollard (1995) Estrella and Mishkin (1995) Aglietta and Uctum (1996)	Costs and benefits of EMU	Spiegel (1997) Jordon (1997) Eudey (1998) Klein (1998) Carlino (1998) Whitt (1997) Stevens (1999)
		Impact of the euro on the dollar	Gould and Signalla (1997) McDonogh (1997) Volcker (1997) Marion (1998) Summers (1997) Zaretsky (1998) Guynn (1998) Meyer (1999) Gramlich and Wood (2000) and Wynne (2002) Pollard (2001)

Table 4. A simple guide to US academic economists on EMU.			
1989-1996		**1996-2002**	
Topics:	**Author:**	**Topics:**	**Author:**
The Maastricht Treaty (including EMS and ESCB)	Giovanni, Cooper and Hall (1990) Dornbusch (1990, 1993) Meltzer (1990) Arndt and Willet (1991) Froot and Rogoff (1991) Frankel (1992, 1993) Branson (1993) Folkerts-Landau and Graber (1992) Letiche (1992) Kenen (1992, 1995) Bayoumi and Eichengreen (1993) Eichengreen and Wyplosz (1993) Eichengreen and Frieden (1994) Eichengreen (1992b, 1993, 1994/b) Wachtel (1996)	Leadership and political issues in the European Union	Feldstein (1997a/b, 1998, 1999, 2000a/b and 2001) Feldstein and Feldstein (1998) Eichengreen (1996a/b) Eichengreen and Ghironi (1996) Eichengreen and Von Hagen (1996) Bayoumi et al (1997) Makin (1997) Obstfeld (1997, 1998) Kenen (1997, 1998a/b) Frieden (1998) Krugman (1998a) Calomiris (1998) Posen (1999) Willet (1999 and 2000) Schwartz (2001)
Optimum currency area theory	Sala i-Martin and Sachs (1991) Eichengreen (1990a, 1991, 1992b) Bayoumi and Masson (1991) Inman and Rubinfeld (1992) Bayoumi and Eichengreen (1993) Frankel and Rose (1996)	EU as a non-optimal currency area	Eichengreen (1996a/b) Frankel and Rose (1996. 1997, 2000) Bayoumi et al (1997) Bayoumi and Eichengreen (1997) Kenen (1998a) Tobin (1998) Eichengreen and Wyplosz (1998) Eichengreen and Frieden (1998) Frieden (1998)
Fiscal federalism and lessons from the US	Wildasin (1990) Eichengreen (1990b, 1992a 1994a) Inman and Rubinfeld (1992) Eichengreen and Von Hagen (1996) Frankel (1993) McKinnon (1994) Hutchinson and Kletzer (1995) Krugman (1993)	The euro and the dollar	Eichengreen (et al 1998, 2000a) Eichengreen and Ghironi (1996) Bergsten (1997a/b, 1999) Prati and Schinasi (1997) Masson and Turtelboom (1997) Mussa (1997, 2000) Obstfeld (1999) Feldstein (2000a) Scott (1998) Krugman (1998a/b, 1999a/b and 2000)

			Devereux and Engel (1999) Devereux et al. (1999) Frankel (2000a/b) Selgin (2000) Cohen (2000) Dornbusch (2001c) Kenen (2002)
The political economy of EMU	Feldstein (1992a and 1992b) Schwartz (1993) Gabel (1994) Cohen (1994) Eichengreen and Frieden (1994) McKinnon (1995) Dornbusch (1996a/b)		

Figure 1.

Frequency of publications on EMU and the single currency, 1989-2002

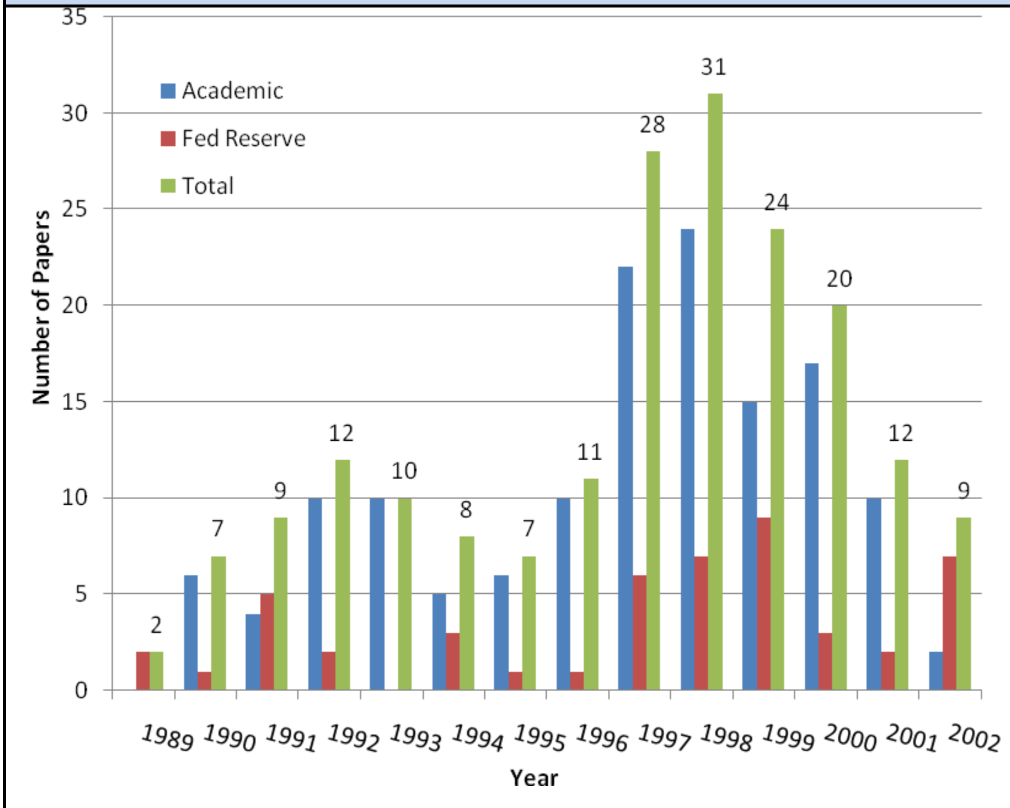
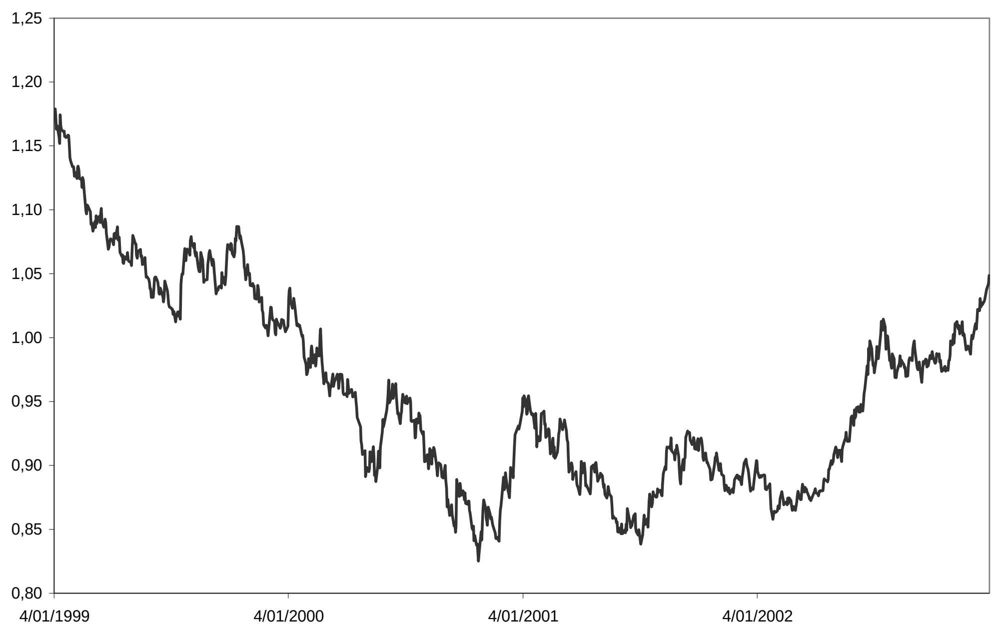


Figure 2. The euro-dollar exchange rate, 1999-2002.



Source: Allied Irish Bank