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NOTES FOR A DISCUSSION ON THE EUROPEAN SINGLE CURRENCY

BY A. D. WILKIE, M.A., F.F.A., F.I.A.

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ABSTRACT

This paper forms notes for discussions about the European single currency at the Institute of Actuaries and the Faculty of Actuaries. The author assumes (and hopes) that the single currency will start on time in 1999, with most of the Member States of the European Union included. The key dates are 1 January 1999, when the exchange rates between currencies will become irrevocably locked and become conversion rates, and 2002, when euro notes and coins will be introduced, and the retail banking sector will convert to euros. The advantages of a single currency are potentially very great; the costs are also considerable. Governments of Member States will no longer be able to get a competitive advantage by devaluing their currency, or be able to choose an inflation rate that is different from that of the E.U. as a whole. The key document is the Maastricht Treaty, and the conversion criteria included therein are discussed. The author concludes that, if governments choose to interpret the criteria leniently, all countries, except possibly Greece, will be included in 1999, with Greece joining a year or two later. Some of the practical considerations for actuaries, including life insurance, general insurance, pensions, banking and investment are mentioned. The paper is not comprehensive, and is a personal contribution to stimulate discussion.

KEYWORDS

European Single Currency; Euro; European Union; European Monetary Institute; European Central Bank; Gold Standard

1. INTRODUCTION

1.1 These notes are intended to introduce discussions on the proposed European single currency at both the Institute of Actuaries and the Faculty of Actuaries. This is a rapidly changing topic, and it may well be that there will be significant developments before the respective meetings take place. In particular, there may have been a general election in the United Kingdom before the Faculty meeting takes place, or we may be in the middle of one. Supplementary notes may, therefore, be necessary.

1.2 I am very pleased to be able to introduce these discussions about the European single currency, the euro. I have been a supporter of European union since my days at university in the early 1950s, even before the original European Economic Community, the E.E.C., was established in 1956. One of my treasured memories of that time was meeting Robert Schumann in person on one occasion. These notes will therefore present a personal view that favours the European Union and the single currency. However, I hope that I represent the relevant facts correctly.

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1.3 My approach contrasts with the Euro-sceptic attitude of many of those in Britain. I have to wonder why so many British people are so reluctant to see the U.K. participate fully in the federal structure that has been created. I call it federal because it has been created by a treaty, or rather several treaties, between independent states, each of which has retained also its independence. The institutions of the Union have certain powers; the Member States have other powers. In this respect the E.U. is just like the United States of America, Canada, Australia or Switzerland, to name other federal states.

1.4 A single currency may be thought by some to be a natural concomitant of a federal state. We would think it very peculiar, and very inconvenient, if each of the 50 states of the U.S.A. had its own currency, or each of the cantons or half-cantons of Switzerland. Not all federations have the same split of authority between the states and the central government; in the U.S.A. insurance supervision is a matter for the individual states, whereas in the E.U. we have Directives relating to life and non-life insurance business that brings our supervision systems closer together. A single currency is therefore not a necessary feature, but is a highly desirable one.

1.5 There are political, economic and practical issues relating to the European single currency. In Britain the press has concentrated on the political issues. The Conservative party is deeply and openly divided, and the Labour party is also divided, but has kept it better concealed. Only the Liberal Democratic party is wholly in favour of the E.U. and the single currency. This contrasts with the position in many other Member States, where the main political parties are in favour of the single currency, though public opinion may be suspicious of it.

1.6 I shall not discuss the political issues. Instead I want to concentrate on the economic and practical issues, particularly those that may be of relevance to actuaries. Some actuaries may already have thought a lot about the practical issues. I know that insurance companies in some countries have set up teams to consider the practical aspects of the changeover, which will start at the beginning of 1999 and go on until the middle of 2002.

1.7 I write generally as if the introduction of the euro were a certainty. It is possible that it will be abandoned or postponed, but, in my view, much the most likely outcome is that it will go ahead on time, and that most of the 15 countries of the E.U. will be included. I explain why in these notes.

2. The Route to a Single Currency

2.1 It is fairly obvious what the situation will be like when we have a single currency within the E.U. There will be the euro, divided into 100 cents, and it will be the one currency throughout the Union. There will be euro notes and coins, valid everywhere throughout the Union, though they may show separate designs on them for different places. This should not be a problem; the U.K. pound coin has several different designs, both for the head side and the tail side,

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and many people do not even notice. The euro will be the continuation of the present ECU, which is not a currency in its own right, but is a basket of currencies. The present day value of the ECU is about 78 pence (U.K.) or $1.25, and has other values, as shown in Table 1.

Table 1. Approximate value of the ECU, *Financial Times*, 19 October 1996

	1 ECU = approximately
Austria	13.5 schillings
Belgium	40 francs
Denmark	7.4 kroner
Finland	5.8 markka
France	6.5 francs
Germany	1.9 marks
Greece	300 drachma
Ireland	78 pennies
Italy	1900 lire
Luxembourg	40 francs
Netherlands	2.15 guilders
Portugal	190 escudos
Spain	160 pesetas
Sweden	8.3 kronor
United Kingdom	78 pence
United States of America	1.25 dollars

2.2 While it is easy to imagine what it will be like when we have a single currency, there is the problem of getting there from here. I describe my understanding of the process. It may, however, work out differently.

2.3 The first important date is 1 January 1999. On that date the exchange rates between the different currencies presently used in the E.U. will be frozen, and become conversion rates into and out of the euro. The national currencies will continue for a while, but they will just be different denominations of the euro. I say conversion rates, because they will be fixed, just as there are fixed conversion rates between kilos and pounds, litres and gallons, metres and yards.

2.4 On 1 January 1999 the European Central Bank (ECB) will open for business. It will do all its accounting in euros. So will the national central banks of all the Member States, the Bank of England, Bank of France, Deutsche Bundesbank, etc. They, together with the ECB, will form the European System of Central Banks (ESCB). Ordinary banks will have euro accounts with the central banks, but ordinary customers will continue to have bank accounts denominated in the national currencies, pounds, marks, lire, or whatever. If we wished, we could also have euro accounts, and we could move money between our pound account and our euro account at the fixed conversion rates.

2.5 Some organisations have ECU accounts at present (the Groupe Consultatif is one), and can write cheques, make payments, borrow money, all denominated in ECUs. After 1 January 1999, it will be possible to do the same in euros.

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2.6 There will be no euro notes and coins until 2002. This means that, although the central banks will convert national currencies to euros and back at fixed conversion rates, there will still be a need, between 1999 and 2002, for *bureaux de change* for ordinary travellers to change notes from one currency to another, and I expect that there will be charges for doing this; but these will be a spread about a fixed central rate, rather than, as at present, a spread about a floating exchange rate.

2.7 The scheduled date for converting wholly to euros is 1 January 2002. I hope that it will not be on 1 January, but at a quiet weekend a little later, because the conversion will take a great deal of trouble, and the New Year holiday time is not the best day to get people to work overtime.

2.8 On the conversion date all bank accounts will be changed to euro accounts, and banks will start issuing euro notes and coins and will withdraw the present currency notes and coins.

2.9 At this time there will be a big conversion job. All slot machines, parking meters, vending machines, etc. will need to be altered to take euro coins or notes. All accounting will need to change over. Some cash machines in shops may need to be altered to take the new sizes of coins. In countries such as Italy and Spain machines may need to be replaced, to represent euros and cents rather than just numbers of lire and pesetas with no decimal point or decimal comma. In other countries this will not be a problem. In Britain and Ireland the euro will be the same sort of size as the pound or the punt, so the layout of amounts will look the same; but this may lead instead to confusion about which currency a price is stated in.

2.10 There will be a period of about six months during which both the old currency notes and the new euro notes and coins will be valid, and shops will be able to use either. However, the whole banking system will need to change on one date. The experience in Britain when we changed from pounds, shillings and pence to pounds and new pence, in 1971, was that the changeover was very quick. Most people were using the new currency within a week or two, and only a few determinedly old-fashioned shopkeepers went on using the old currency for the fully permitted six months.

3. Economic Considerations

3.1 The process of conversion to a single currency will involve costs: new notes and coins, new machinery to accept the new currency, changes to computer programmes to convert bank accounts, insurance policy records, and many other things. The changes will go on for a long time, since there will be contracts expressed in the old currency that will need converting to the new currency even after very many years.

3.2 What about the immediate advantages? It will be much easier for all those inside the E.U. to travel, and easier too for visitors, who will be able to use

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one currency throughout the Union, instead of 14 or 15 different ones. There will be less need for bureaux de change, and some foreign exchange dealers will be redundant. There will be no need for certain foreign currency options, such as those between pounds and marks.

3.3 A single currency should make trade within the Union considerably easier, and this is its main advantage. A manufacturer or supplier will be able to quote a price in euros, and will not have to worry about the calculation of a price in another currency, or, more important, any possible exchange risk if the exchange rate were to change between his making the contract and his supplying the goods. It will be easier to compare prices from different suppliers, and easier for manufacturers operating in several countries to know what their relative production costs are; all this should make a single market much more of a reality and lead to increased prosperity throughout the Union.

3.4 I have not seen quantified either the possible gains or the possible costs. I believe that the gains will be considerable, but I cannot prove it, and I do not know how they could be reliably estimated. On the other hand the costs are obvious, and could probably be quantified more easily.

3.5 There are other possible economic effects. When countries have different currencies, it is possible that one country may become less competitive than it was, for all sorts of reasons. With separate currencies, the government of the country can let its currency devalue, so that its wage rates and its prices are reduced in terms of other currencies. This makes its goods more competitive, and reduces the real incomes of its population, measured in foreign currency terms. This helps the country to accommodate to the adverse change.

3.6 In future such devaluations will not be possible, and countries will have to adopt other remedies. One way is to reduce prices and wages, or to restrain any increase in them, so that its goods remain competitive. However, this is likely to be unpopular with employees and with trade unions, and it may do no good to the profits of businesses. Another remedy is to accept less trade and higher unemployment; this too is likely to be unpopular. Another remedy is migration, from areas with relatively poor prospects to areas with relatively good ones. This is much easier in the U.S.A., where people mostly speak one language, local traditions are perhaps not so strong, and land for new development is plentiful and cheap. Migration is harder in Europe, with many languages, strong local traditions and, in many places, a shortage of land for development.

3.7 With separate currencies, the government of a country may solve certain problems by allowing or creating inflation. Keynesian economics was very successful in that it created an illusion of prosperity by allowing money supply to increase and wages to rise, so that people felt better off and spent more, and more goods were produced to meet the increased demand. The illusion was turned into reality. It was a good way of avoiding the depression of the 1930s, but it broke down when people saw through the money illusion, put prices up to match wage increases, demanded wage increases to match price increases, and looked through

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to measure 'in real terms'. Nowadays the emphasis is on sound money, low inflation and steady growth.

3.8 The intention with the euro is to produce these conditions, low inflation and steady growth. However, the single currency means that the government of any one Member State cannot adopt a different policy from that of the European Central Bank.

3.9 I can imagine circumstances in which it might be thought beneficial for a country where there is too great debt to have inflation, such as an agricultural country where farmers were in debt to a wealthy class of *rentiers,* and a good dose of inflation would change the balance of economic power. However, we are not in that position in Europe today.

3.10 Nevertheless, the possibility that certain countries or regions within the Union will become less economically competitive needs to be considered. Action to help such regions may be needed even more than it is at present.

3.11 A further problem of a single currency may come through the easy comparison of wages. At present it is more difficult to compare wage rates in different countries; costs of living and social conditions differ as well as salaries, taxes and social security contributions. With a single currency comparisons may become easier, and trade unions may start to try to negotiate uniform wage rates throughout the Union. This could cause problems, since poorer areas really need lower wages in order to remain competitive. There might be uniform wage rates for some jobs, where it could be argued that people doing the same job throughout the Union should get the same pay; but this could push up wage rates in the poorer regions for other jobs.

3.12 I mention these problems, not because I think that they should prevent a single currency being introduced, but because they need to be considered. There are those who argue that a single currency would be economically harmful, but without really explaining why. I think the disadvantages are as I have stated, but no more than that.

4. A DIVERSION: THE GOLD STANDARD

4.1 It is useful to remember that in 1914 there was only one currency in use throughout the whole world: gold. Some countries, the last being British India, had used silver (or gold and silver together in the *bimetallic system*) during the nineteenth century. It is informative to see how this system worked; I have found the details in Taussig (1911).

4.2 In Britain one fine ounce of gold was worth £3 17s $10\frac{1}{2}$d sterling (£3.89375), and one could go to the Bank of England and convert gold bullion into coins, or coins into gold bullion at this fixed conversion rate with no charges. The old word for the charge made to convert bullion into coins is seigniorage, and the central banks had stopped charging seigniorage.

4.3 One could also take bullion to France and convert it into francs at the rate of 3,447.74 francs per kilo of gold, or to Germany and convert it into marks at

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the rate of 2,790 marks per kilo, or to the U.S.A. and convert it into dollars at the rate of 23.22 grains of gold per dollar. The problem now is to find out the conversion rates between fine ounces, kilos and grains, but the result is:

£1 = 27.54 francs = 22.29 marks = $5.3085.

4.4 Because shipping gold bullion from London to Paris or New York cost something for carriage and insurance, most payments were not actually made by shipping bullion, but by banks netting off amounts due against one another. However, if there was a net flow of trade, bullion really was shipped between countries. Exchange rates did exist, but these moved around the central conversion rate only to the extent that netting did not take place, and the divergence from the conversion rate was no larger than the shipping and insurance costs.

4.5 For a period during the nineteenth century silver was used as well as gold, and banks converted silver to and from gold at a fixed conversion rate of 16 ounces of silver to one ounce of gold. I say 'ounce', but it could just as well have been kilos, since what mattered was the ratio. However, this did not reflect production costs, and as more and more silver was discovered, the price of silver fell, and countries concentrated almost wholly on gold.

4.6 During the nineteenth century prices generally fell gradually, and wages rose gradually. Enough new gold was discovered, in California, Australia and South Africa, to keep the world economy expanding, but without prices of goods rising.

4.7 During the First World War there was a great expansion of production of armaments and munitions, and many countries 'went off gold' and used only paper currency to finance their war expenditure. After the war there were extreme inflations in some countries, and falling prices in others. During the 1920s many countries went back onto gold, but the supply of gold was not enough to finance the new potential prosperity, and prices had to fall. However, they fell by so much that firms went out of business and there was the severe depression of the 1930s.

4.8 It will be important with a single currency not to make again the mistake of the 1930s, with too tight control of the money supply, just as it will be important not to make again the mistake of the 1970s, with too slack control of the money supply and too much inflation.

4.9 Thus, a single currency is not just a new idea, but also a return to an old one. It would, in my view, be a good idea to have a single world-wide currency, but that is not under consideration now.

5. THE MAASTRICHT TREATY

5.1 The master document that controls the single currency is the Treaty on European Union, signed in 1992 in Maastricht, and known, therefore, as the

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Maastricht Treaty. It is necessary to refer to the wording of the Treaty to see what is proposed, and how the single currency will come about. This Treaty is a little confusing at first sight, because it mostly consists of amendments to the earlier Treaties setting up the various European Communities, of which the relevant one is the Treaty establishing the European Economic Community, the Treaty of Rome of 1956. The numbered Articles relate to the Articles of this original treaty as now amended.

5.2 The amended Article 2 prescribes the Principles of the European Community:

> "The Community shall have as its task, by establishing a common market and an economic and monetary union, and by implementing the common policies or activities referred to in Articles 3 and 3a, to promote throughout the Community a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment, a high degree of convergence of economic performance, a high level of employment and of social protection, the raising of the standard of living and quality of life and social cohesion and solidarity among Member States."

5.3 Mathematicians will be aware of the difficulties of maximising several objectives simultaneously, but the set of conflicting objectives defined here all sound reasonable and desirable. Monetary union has a high place in the list, and growth is desirable, but it should be non-inflationary.

5.4 Paragraph 2 of Article 3a refers specifically to the single currency:

> "Concurrently with the foregoing, and as provided in the Treaty and in accordance with the timetables and procedures set out therein, these activities shall include the irrevocable fixing of exchange rates leading to the introduction of a single currency, the ECU, and the definition and conduct of a single monetary policy and exchange rate policy the primary objective of both of which shall be to maintain price stability and, without prejudice to this objective, to support the general economic policies in the Community, in accordance with the principle of an open market with free competition."

5.5 Article 4a states that a European System of Central Banks (ESCB) and a European Central Bank (ECB) shall be established, and a Protocol to the treaty sets out the Statute of the ESCB and the ECB.

5.6 We then jump to Article 102a. From there to Article 109m it forms a Title on *Economic and Monetary Policy*, subdivided into four Chapters on: *Economic Policy* (Articles 102a to 104c); *Monetary Policy* (Articles 105 to 109); *Institutional Provisions* (Articles 109a to 109d); and *Transitional Provisions* (Articles 109e to 109m).

5.7 The Chapter on Economic Policy contains much about general economic policy, and also three provisions that specifically affect monetary policy. Governments of Member States will not be able to borrow from the ECB or from national central banks, so they cannot increase the money supply (Article 104); neither the Community institutions nor the governments of other Member States shall be responsible for the debts of the government of any Member State (Article 104b); and (Article 104c, Paragraph 1):

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"Member States shall avoid excessive government deficits."

5.8 The rest of Article 104c and one of the Protocols attached to the treaty spell out the two criteria for budgetary discipline, which I discuss in Section 8.

5.9 The Chapter on Monetary Policy starts in Article 105 with the statement:

"The primary objective of the ESCB shall be to maintain price stability,"

and it goes on to explain what the ESCB and the ECB shall do. In particular (Article 105a(1)):

"The ECB shall have the exclusive right to authorize the issue of bank notes within the Community. The ECB and the national central banks may issue such notes. The bank notes issued by the ECB and the national central banks shall be the only such notes to have the status of legal tender within the Community."

5.10 Paragraph 2 allows Member States to issue coins, subject to the approval of the ECB.

5.11 An important part of Article 107 is that the ESCB and the ECB must be independent of the Community institutions and from the governments of Member States.

5.12 The rest of this Chapter deals with the functioning and powers of the ESCB and the ECB, as does the next Chapter on Institutional Provisions.

5.13 Important parts of the Treaty for consideration are the Transitional Provisions. The European Monetary Institute (EMI) has now been set up. In due course it will become the European Central Bank, at the latest on 1 July 1998. The functions of the EMI are set out in Article 109f, and are essentially to set up the single currency.

5.14 Article 109j sets out the procedures for deciding which Member States shall join the single currency, and the timetable. Eligible Member States must fulfil four criteria (really five), relating to price stability, excessive budget deficits (both the current deficit and the aggregate of government debt), exchange rate stability and interest rate convergence. I discuss these further in Section 8.

5.15 The Council of the E.U., acting by a qualified majority, shall decide which states meet the criteria, whether a majority of states do, and make recommendations to the Council formed of Heads of State or of Government. This Council shall decide whether and when the third stage will start; the third stage is when exchange rates become fixed and the euro is created. If the Heads of State and of Government do not decide by 1 January 1997, then the third stage will start on 1 January 1999, and I think we can assume that this will be the date.

5.16 The new euro will take the value that the present ECU has, that is about 0.80 U.K. pounds, 2 German marks, 6 French francs, 2,000 Italian lire, and so on, as in Table 1, unless exchange rates change a great deal in the next two years. From 1 January 1999 the exchange rates of the separate currencies will turn into fixed conversion rates, in much the same way as metres and yards or grammes and pounds weight are related by fixed conversion rates.

5.17 What happens next is not prescribed in the Treaty, but I am assuming

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that what is called the third stage will last for three years, until 1 January 2002, at which point euro notes and coins will be issued throughout the Union. National currencies, pounds, marks and francs, will remain for, perhaps, six months; I call this period the fourth stage, though this is not its official name. Then after this, in what I would call the fifth stage, there will be only one currency, the euro, used for all purposes.

5.18 Protocols state that certain Member States may be left out of the single currency. Denmark is allowed to stay out until it has had a favourable referendum; the U.K. is allowed to stay out until its Parliament has agreed; and Member States which do not meet the criteria of Article 109j may be kept out. These States will be described as 'Member States with a Derogation' and every two years, or at the request of the Member State, the position will be reconsidered, so that in due course one might expect all states to come in.

6. THE INSTITUTIONS: EMI, ECB, ESCB

6.1 So much for the Treaty. What about the institutions that are contemplated? The Protocol on the Statute of the European System of Central Banks and of the European Central Bank contains 53 Articles defining the tasks of these two institutions, and how they will be organised. A further Protocol on the Statute of the European Monetary Institute has 23 Articles, and does the same for that body.

6.2 The EMI is already functioning with its headquarters in Frankfurt am Main, and it has produced reports, referred to below. The ECB will take over from the EMI, probably on 1 July 1998. The ESCB will consist of the ECB and of the national banks of the Member States.

6.3 When the ECB is set up it will require capital. Article 28 of the Protocol states that the capital shall be ECU 5,000 million, subscribed by Member States proportionately according to a key which takes into account both population and gross domestic product. The central banks of the participating Member States will become the shareholders of the ECB.

6.4 The ECB will also require to have foreign currency reserves, and these will be provided by the national central banks, up to an amount of ECU 50,000 million, also in proportions according to the key. In exchange, the central banks will receive equivalent credits at the ECB.

7. PROGRESS SINCE THE TREATY

7.1 The Treaty only went a certain distance in describing the process whereby the single currency would be introduced, and much is left to the Commission and the EMI, with the Council making the ultimate decisions. The Commission issued a Green Paper in May 1995, *One Currency for Europe*, and asked for comment on it. The Groupe Consultatif, the liaison group of the actuarial associations of the E.U., made a submission, and I and others from the

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Groupe met officials of the Commission in March 1996. I discuss this submission in Section 9.

7.2 Before this, the Commission had set up an expert group on the changeover to the single currency, under the Chairmanship of Mr Cees Maas of the ING group in the Netherlands, which submitted an *Interim Report* in January 1995 and a *Progress Report* in May 1995, giving the views of experts from banks and other organisations, including a university professor from Germany, a journalist from France, and the Chairman of IBM Ireland. I do not know whether this group is still in existence, but its reports were presumably helpful to the Commission in making its recommendations.

7.3 The EMI has produced two reports, both in November 1995, one on *The Changeover to the Single Currency*, and the other on *Progress Towards Convergence*. These flesh out what will happen during stages three and four of the schedule, and discuss how far states have met the convergence criteria so far.

7.4 The Bank of England has also started a series of reports on the *Practical Issues Arising from the Introduction of the Euro*, to be published broadly quarterly, the first two issues of which have appeared. These discuss how the conversion to the euro would work within the U.K., both if the U.K. is included in the single currency or is not, i.e. is an 'in' or an 'out'. Issue 2 discusses money transfer systems within the central banking system, and also lists the many organisations that the Bank of England has consulted (not including either the Institute or the Faculty, but those consulted are mostly trade associations and suchlike).

7.5 All these reports are useful reading for those who are seriously interested in the practical details of conversion. The Bank of England report, Issue 2, gives a further list of other reports, which I have not had the opportunity to consult.

8. THE MAASTRICHT CONDITIONS

8.1 *The Convergence Criteria*

8.1.1 Article 109j of the Treaty describes the 'convergence criteria' and the process whereby the starting date for the single currency will be decided and which Member States will join it will also be decided. I find this Article, and the accompanying Protocol, rather obscure. I start by assuming that the convergence criteria are necessary and sufficient conditions for Member States to join, and then I shall explain why I do not think that they are actually necessary.

8.1.2 The Article starts by explaining that the Commission and the EMI shall prepare reports about a number of topics. It then goes on:

> "The reports shall also examine the achievement of a high degree of sustainable convergence by reference to the fulfilment by each Member State of the following criteria:
> —the achievement of a high degree of price stability; this will be apparent from a rate of inflation which is close to that of, at most, the three best performing Member States in terms of price stability;

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—the sustainability of the government financial position; this will be apparent from having achieved a government budgetary position without a deficit that is excessive as determined in accordance with Article 104c(6);
—the observance of the normal fluctuation margins provided for by the Exchange Rate Mechanism of the European Monetary System, for at least two years, without devaluing against the currency of any other Member State;
—the durability of convergence achieved by the Member State and of its participation in the Exchange Rate Mechanism of the European Monetary System being reflected in the long-term interest rate levels."

8.1.3 These criteria are developed further in the *Protocol on the Convergence Criteria.* Three of the criteria are temporary ones, and I discuss these first. One is permanent, that relating to the government financial position. I deal with it last.

8.2 *Inflation*

8.2.1 The Protocol defines further the criterion on price stability in Article 1:

"The criterion on price stability referred to in the first indent of Article 109j(1) of this Treaty shall mean that a Member State has a price performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than $1\frac{1}{2}$ percentage points that of, at most, the three best performing Member States in terms of price stability. Inflation shall be measured by means of the consumer price index on a comparable basis, taking into account differences in national definitions."

8.2.2 Table 2 shows the rates of inflation in the past three years, each ending in June. These are from OECD statistics, and I do not know whether they are the same indices as the E.U. might use.

Table 2. Inflation rate per cent for year ending in June

	1993-94	1994-95	1995-96
Austria	2.8	2.7	1.6
Belgium	2.7	1.3	1.9
Denmark	2.1	2.1	2.0
Finland	1.3	0.9	0.4
France	1.8	1.6	2.3
Germany	3.0	2.4	1.1
Greece	10.9	9.7	8.8
Ireland	2.7	2.7	1.3
Italy	3.8	5.6	3.9
Luxembourg	2.1	2.3	1.2
Netherlands	3.0	2.1	1.8
Portugal	5.6	3.8	3.6
Spain	4.7	5.1	3.7
Sweden	4.5	2.1	–0.1
United Kingdom	2.6	3.5	2.1
Third lowest	2.1	1.6	1.1

8.2.3 The Report of the EMI on *Progress towards Convergence,* dated November 1995, discusses several definitions of what might be meant by 'the three best performing Member States'. I choose the most lenient of these, which

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is just the third lowest rate, and I have shown this in the table. For the latest year it is Germany, at 1.1%. Adding 1.5% to this gives 2.6%. Four countries exceed this, but only Greece, at 8.8%, exceeds it by a great deal. The other three, Italy, Portugal and Spain, are within striking distance of the target.

8.3 *Interest Rates*

8.3.1 I next discuss interest rates. Article 4 of the Protocol states:

> "The criterion on the convergence of interest rates referred to in the fourth indent of Article 109j(1) of this Treaty shall mean that, observed over a period of one year before the examination, a Member State has had an average nominal long-term interest rate that does not exceed by more than 2 percentage points that of, at most, the three best performing Member States in terms of price stability. Interest rates shall be measured on the basis of long term government bonds or comparable securities, taking into account differences in national definitions."

8.3.2 I do not have available the average rates of interest over the last year, but only the current yields on government bonds, and that for only some countries; they are shown in Table 3. Rates for Finland, Luxembourg and Greece are missing, but the former two countries have, I believe, relatively low interest rates, and the latter has high rates, or at least had according to the EMI report on *Progress towards Convergence* of November 1995. Curiously, the Protocol does not talk about the three states with the lowest interest rates, but the three states with the lowest inflation rates. These were, in June: Sweden (–0.1%), Finland (0.4%) and Germany (1.1%). The interest rates of Sweden and Germany are 7.24% and 5.98% respectively. Austria has the third lowest interest rate, at 5.96%. If we were to use 5.98% as the reference value, and add 2%, then only Italy, among the countries in the table, fails, and that by only a moderate amount. Only Greece would clearly fail, unless conditions there have changed greatly.

Table 3. Government bond yields per cent, *Financial Times*, 19 October 1996, 10-year bonds

Austria	5.96
Belgium	6.09
Denmark	6.82
Finland	-
France	5.95
Germany	5.98
Greece	-
Ireland	6.94
Italy	8.21
Luxembourg	-
Netherlands	5.91
Portugal	7.66
Spain	7.77
Sweden	7.24
United Kingdom	7.58
ECU	6.32
Third lowest	5.96

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8.4 *Currency Fluctuations*

8.4.1 Article 3 of the Protocol defines the rules for currency fluctuations:

> "The criterion on participation in the Exchange Rate Mechanism of the European Monetary System referred to in the third indent of Article 109j(1) of this Treaty shall mean that a Member State has respected the normal fluctuation margins provided for by the Exchange Rate Mechanism of the European Monetary System without severe tensions for at least the last two years before the examination. In particular, the Member State shall not have devalued its currency's bilateral central rate against any other Member State's currency on its own initiative for the same period."

8.4.2 This seems to require that the state is in the ERM; but several states are not in the ERM, although Finland has recently joined it. It then depends on what the normal fluctuations are. At present they can be as high as 15% either side. The loosest interpretation I could put on this is that the exchange rate should not have fluctuated outside a range of plus or minus 15% from its final rate for all of the last two years before the final decision. I think that this is true at present for all countries except Finland, whose currency has appreciated by about 20%. The Italian lira has fluctuated considerably, but is now near the middle of its range.

8.4.3 These first three criteria all seem to me to relate to the same point: inflation. Recent inflation should be sufficiently low. Prospective inflation must be sufficiently low, and this is reflected in long-term interest rates. Also, currencies which, in the long run, change in response to changes in prices, but fluctuate in the short run for many other reasons, should also reflect the stability of prices. A country that meets one criterion is likely to meet them all.

8.4.4 However, it is relevant to ask what the economic point of these criteria is. It would be quite possible for a country to introduce a new currency and to expect a step change in the rate of inflation of the new currency. This is a frequent way in which a hyperinflation is ended, as in Germany in 1923. Provided that the change of currency and the expected change in inflation rate is made sufficiently explicit, I see little problem in including a Member State that has had a high rate of inflation, high interest rates, and a depreciating currency, because the new currency will bring new expectations.

8.4.5 It is provided in Article 6 of the Protocol that the Council of the E.U., acting unanimously, may change the terms of the protocol. So if the Member States wish to see the euro introduced, they can, if they all agree, change this set of criteria to ones that countries actually do meet.

8.5 *Government Budgetary Position*

8.5.1 I now come to the criterion about the government budgetary position. Article 2 of the Protocol refers back to Article 104c(6) of the Treaty, as does Article 109j, quoted above. Article 104c(1) states:

> "Member States shall avoid excessive government deficits."

8.5.2 This means at all times, not just in order to enter the single currency.

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The rest of Article 104c develops the idea, along with a further *Protocol on the Excessive Deficit Procedure*. There are two main points: the budget deficit should be less than 3% of gross domestic product, and the total government debt should not exceed 60% of gross domestic product. According to the EMI report on *Progress towards Convergence*, the figures were as shown in Table 4. However, these have changed considerably since then, and most countries seem near the 3% deficit limit, though I see no way in which the gross debt of some countries could be brought down to 60% in time. But there are many let-outs.

Table 4. Government deficit as per cent of GNP, 1995

	Net borrowing	Gross debt
Austria	5.5	68
Belgium	4.5	134
Denmark	2.0	74
Finland	5.4	63
France	5.0	52
Germany	2.9	59
Greece	9.3	114
Ireland	2.7	86
Italy	7.4	125
Luxembourg	(0.4)	6
Netherlands	3.1	78
Portugal	5.4	71
Spain	5.9	65
Sweden	7.0	81
United Kingdom	5.1	53

8.5.3 First, it is all right if the ratios are sufficiently diminishing and approaching the reference values at a suitable pace. What is 'sufficiently' and what is 'a suitable pace'? Secondly, investment expenditure can be taken into account for the government deficit, and, by extension, possibly also for the government debt; so the large holdings of some governments in nationalised industries could be treated as assets and a corresponding quantity of the debt cancelled out. Thirdly, Article 104c requires that the Commission shall prepare a report, and, if it considers that an excessive deficit exists, it shall address an opinion to the Council, but then, according to Article 104c(6):

> "The Council shall, acting by a qualified majority on a recommendation from the Commission, and having considered any observations which the Member State concerned may wish to make, decide after an overall assessment whether an excessive deficit exists."

8.5.4 It is this decision by the Council that is taken into account in the criteria, not the fact of an excessive deficit. Thus, I suggest that, if the governments of Member States wish the single currency to start, the Council will simply not make any decisions under Article 104c(6), and will ignore any excessive deficits. If the majority of the Council wishes to keep a particular

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Member State out, it can use this procedure to exclude it, but it is not obliged to do so.

8.5.5 It is worth considering, however, the economic significance of these criteria. I would agree that it is sensible for any government to have a tolerably balanced budget, and not too much debt; but does it matter to the operation of a single currency how much any Member State borrows? It has to borrow on the open market, and cannot finance a deficit by increasing the money supply. So far as I know, the federal government in the U.S.A. does not, and indeed could not, prevent state governments from borrowing as much as they chose, and the same applies in other federal states, such as Australia, Canada, Switzerland and, I believe, Germany. Article 104b explicitly states that neither the Community nor other Member States shall be responsible for the debts of any Member State, so I would ask: "what is there to worry about?".

8.6 *Procedures*

8.6.1 I said that I would start by assuming that the criteria were necessary and sufficient conditions. I have shown that they may be modified; but even if they were not modified, Article 109j is not absolutely explicit. Article 109j(3) states:

> "Taking due account of the reports referred to in paragraph 1 and the opinion of the European Parliament referred to in paragraph 2, the Council, meeting in the composition of Heads of State or of Government, shall, acting by a qualified majority, not later than 31 December 1996:
> —decide, on the basis of the recommendations of the Council referred to in paragraph 2, whether a majority of the Member States fulfil the necessary conditions for the adoption of a single currency;
> —decide whether it is appropriate for the Community to enter the third stage, and if so
> —set the date for the beginning of the third stage."

8.6.2 I do not think that any decision will be made before 31 December 1996, which is now not far away, but Article 109j(4) implies that it might be made later:

> "If by the end of 1997 the date for the beginning of the third stage has not been set, the third stage shall start on 1 January 1999. Before 1 July 1998, the Council, meeting ... [as before and taking account of reports as before] ... shall, acting by a qualified majority and on the basis of the recommendations of the Council referred to in paragraph 2, confirm which Member States fulfil the necessary conditions for the adoption of a single currency."

8.6.3 The requirement for a majority of Member States to fulfil the conditions seems to have disappeared. I have no doubt that the obvious intention of the Treaty was for the conditions to be necessary and sufficient, but there are enough loopholes in the wording for the politicians to make almost any decision they like, and still not break the terms of the Treaty, if they wish to be so 'sophisticated', to use that word in its old sense.

8.6.4 Separate Protocols to the Treaty allow Denmark to not enter the single

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currency until a referendum has been held, and for the U.K. not to enter until Parliament has decided to do so. I cannot speak about Denmark, but my 'best estimate' is that the Labour Party will win the next election in the U.K., due by May 1997 at the latest, and will decide that the U.K. should enter the single currency.

8.6.5 Thus, I would not be surprised to see the single currency start on 1 January 1999, for all countries except Greece to be included at the start, and for Greece to enter before 1 January 2002, when the final conversion will start to take place. It is possible that any of Spain, Portugal and Italy will be late entrants because they fail the criteria, and that the U.K. and Denmark will be late entrants because decisions are not taken until later; but the laggards will find that they cannot afford to be left out, that the effective choice is between entering the single currency and leaving the Union altogether, and that the latter is not a desirable option.

9. THE GROUPE CONSULTATIF SUBMISSION

9.1 In October 1995 the Groupe Consultatif, the liaison group of the actuarial associations in the E.U., made a submission to the European Commission about the single currency in response to the Commission Green Paper *One Currency for Europe*, and in April 1996 a few of us attended a meeting with officials of Directorate General XV, which is responsible for financial institutions, and of Directorate General II, which is responsible for the single currency, to discuss the submission.

9.2 The Groupe made two main actuarial points, as well as one that many others had made about the continuity of contracts. This means that a contract expressed in pounds, marks or francs will continue to be valid even if the payments are converted into euros, and the contract will not be made void. There might conceivably be a danger here for reinsurance contracts effected in the U.S.A. We must hope that American courts do not decide that a reinsurance contact is void because the original currency no longer exists.

9.3 The first main actuarial points related to interest rates. When the euro is introduced, interest rates will converge, and vary only according to the quality of the borrower. Probably interest rates everywhere will fall to the lower end of the range of current rates, but not necessarily to the lowest rate of any country; but for those countries that have high rates at present, such as Greece, Portugal or Spain (as they had then), the fall will be considerable. If insurance companies had written contracts guaranteeing a high rate of interest, unless they had their assets already invested at that rate and were very well matched, they could be in difficulties.

9.4 This is something that all actuaries may need to consider; what will the insurance market be like in a period of generally lower interest rates, say 5% to 6%, instead of the 8%, 10% or 12% we have seen in recent decades. Real returns

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may not fall, because inflation may be lower, but nominal rates must be expected to fall. What effect will this have on insurance companies, or on the actuarial advice given about pension schemes?

9.5 The second point in the Groupe submission was perhaps less important, that rounding rules need to be prescribed carefully, especially during the period when there are both euros and national currencies. The example was given of a sum of 100,000,000 Irish punts, converted into euros at a rate of 1.23456 euros per punt, giving 123,456,000 euros. If the conversion back were done by calculating the reciprocal rate of 1/1.23456 = 0.810005 to six decimal places, the conversion back would give 99,999,977.28 punts. It would be better to divide by 1.23456. For small amounts it does not matter, but there are opportunities for banks to make profits by doing such conversions repeatedly.

9.6 One other point has been raised with the Groupe that might affect insurance companies and other businesses. During the period from 1999 to 2002, will it be necessary to show prices in both the national currency and in euros on documents such as insurance premium notices? This can be described as 'dual pricing', and one can imagine that it would be great deal of trouble to do, fitting two amounts on each form or document instead of one. It does not seem to be required, and the reports from the Commission and from the EMI suggest that they want to keep things simple, but will customers, especially business customers, want to see dual prices? This seems to be a problem, at present, only for some companies in Germany, but the thought might spread.

9.7 The Groupe has the advantage of having direct access to the European Commission, and of being able to make representations on behalf of all the actuarial associations within the E.U., if they wish to put forward a collective view. The members of the Groupe and of its Financial Committee (of which I am Chairman) are very willing to take forward any concerns that might relate to actuaries throughout the E.U.

10. Technical Aspects of the Conversion

10.1 In this section I review some of the practical considerations that have come to my mind about the conversion to the euro, in relation to life insurance, general insurance, pensions, banking and investment. I make the assumption, purely as an example, that the date of conversion of bank accounts will be 1 February 2002. There are probably a great many other relevant considerations that I have not thought of; I hope these will be brought out during the discussions.

10.2 *Life Insurance*

10.2.1 Life insurance companies have a large computer job in making the conversion to the new currency. Every financial amount has to be converted, using the prescribed conversion rates and rounding rules. Sums assured may have been recorded in whole pounds, and may need to be recorded, in future, in euros

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and cents. This may affect computer storage space, and the way sums assured are printed. Premiums are likely to be already recorded in pounds and pennies, but many premiums have been chosen to be round amounts per month, and they will cease to be such convenient amounts.

10.2.2 During the decimal conversion in 1971 special arrangements were made for industrial assurance, because the small size of the premiums meant that the rounding produced proportionately large changes in the size of the premiums. I am not sure whether similar considerations apply on this occasion. The new cent will (almost certainly) be smaller than the new penny, so the adjustment required may be small enough for the standard rounding rules to apply; but the point needs to be considered.

10.2.3 Premiums due during January 2002 (to use my example date) will be billed or collected by direct debits in pounds. Premiums due during February 2002 will be billed or collected in euros. The conversion period will require care, and will need to be explained clearly to policyholders. Direct debits should flow through easily, but premiums that are normally paid by cheque will need special care. If the amount has been billed in pounds and is paid by cheque in pounds all will be well; the cheque will remain valid up to June 2002 (and possibly later). However, an amount billed in pounds may be paid by cheque in euros, perhaps correctly converted, perhaps inaccurately converted, perhaps not converted at all, with the pound amount being written on a euro cheque. Similarly, amounts billed in euros during February may be paid in pounds, possibly not converted. It will presumably be necessary for banks to supply distinct euro cheque books. All this requires care and extra work for a limited period.

10.2.4 For policies effected after the conversion date there are further points. The various limits of sums assured for underwriting, reassurance levels, free sums assured in group life, etc., will convert to more awkward amounts, and their values in euros will need to be considered. So also will flat policy fees, minimum premiums per month and policies that are typically denominated as so many pounds premium per month. None of this is complicated, but it will need consideration.

10.2.5 The most important point for life insurance is that already noted in Section 9, and made by the Groupe Consultatif; interest rates should generally reduce to lower levels than they have been (at least in recent years) in some countries. The problems are no different from what they would be if interest rates were to fall without any currency conversion, but the two events will be associated. Actuaries may need to consider whether the investments are adequately matched, whether bonus rates may have to fall, and whether premium bases and valuation bases may need to change.

10.2.6 The single currency will make it much easier for insurance companies to write business throughout the E.U. if they wish to do so. Policyholders who move to another Member State will be able to pay premiums in euros from their local bank accounts, and I suppose that direct debit arrangements for banks throughout the E.U. will be developed.

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10.2.7 It would also be interesting to hear from those who work in insurance companies what their companies have been doing about the possible conversion process. Have they thought about it? Are they looking at their computer systems, in addition to looking at computer systems to make sure that they can cope with the year 2000 following 1999?

10.3 *General Insurance*

10.3.1 Similar considerations apply to general insurance in respect of the collection of premiums before and after the conversion date. However, since most personal general insurance contracts are annual, the renewal premiums need to be calculated and billed just in euros, without contractual conversion. Sums insured will need conversion, but at renewal they could be rounded to convenient amounts, where they are not already index-linked.

10.3.2 Policyholder's excesses will need exact conversion for the contract that runs over the conversion date, but at the next renewal it will be possible to select another convenient round amount, not necessarily the previous value converted. Similar considerations will apply to reinsurance contracts, which all may need to be renegotiated to give convenient layers or excesses.

10.3.3 Of particular importance in the reinsurance field is the continuity of contracts. It would be quite unsatisfactory if a reinsurer were to argue that, since the original contract was in pounds which no longer existed, the policy failed. This depends inside the E.U. on suitable legislation, and may depend outside the E.U. on the good sense of courts in other countries.

10.4 *Pension Funds*

10.4.1 The records for pension fund members will need to be converted into euros, just as for life assurance. In the year of conversion items like the lower and upper earnings limits for National Insurance Contributions will also need exact conversion; but thereafter they may be rounded again to convenient amounts. Records of Guaranteed Minimum Pension will also need careful conversion; one consideration is whether the amount accrued is converted in total, or by calculating each element separately. Salaries (like sums assured) may move from exact pounds to an amount expressed in euros and cents.

10.4.2 The possible reduction in inflation rates and interest rates will be of importance for pension funds too. Actuaries will need to consider all their assumptions, for inflation (reduced?), salary increases (no change in real terms?), dividend increases (also no change in real terms?), and interest rates (reduced?).

10.4.3 It has been suggested to me that the divergences among social security schemes in different countries of the E.U. will make it difficult to implement a single currency. I see that there may be problems with pay-as-you-go social security schemes as populations age, and the workforce reduces proportionately; the remedy in some countries probably has to be an increase in the retirement age; but these problems exist anyway, and I do not see that they are altered by the introduction of a single currency. Article 104b of the Maastricht Treaty makes

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it quite clear that no Member State is responsible for the debts of any other Member State, and it may be necessary to rely heavily on this Article in any discussion about the coordination of social security schemes. However, this is not affected by the single currency.

10.5 *Banking*

10.5.1 The banking industry has perhaps the largest amount to do at the changeover date, and other businesses will be very dependent on how the banking changeover is managed. I am assuming that all bank accounts, at least in one country, will be changed over at one date, that after that all recording will be done in euros, and that banks will only issue euro notes and coins. However, banks will still accept pound notes and coins, and cheques written in pounds, at least until 30 June 2002. I suppose that they will still accept notes in other E.U. currencies too, converted as if they were still foreign currencies.

10.5.2 The Bank of England report (1995) discusses central bank and inter-bank clearing systems, and is necessarily written not knowing whether Britain will be an 'in' or an 'out'. It seems to me that the advantages of the single currency will not come about wholly until there is an adequate cheque clearing system throughout the E.U., so that cheques denominated in euros, written on any bank in the E.U., are equally acceptable, and can be cleared without special expense. The experience of the U.S.A., with its multitude of banks, may be helpful here; but it is notable that in the U.S.A. dollar travellers cheques are accepted as an alternative currency alongside dollar bills, whereas personal cheques appear less acceptable, at least at a retail level. Will the same happen in the E.U.?

10.6 *Investment*

10.6.1 Companies will have to present their accounts in future in euros, and some may choose to do this, either alone or in parallel with the local currency, before 2002. As I understand it, central banks will certainly work in euros. However, dividends will probably need to be paid in local currency until 2002.

10.6.2 Nominal values of shares will need to be converted. Some U.K. companies have shares with quite small denominations (e.g. 10p), and it will probably be best if these are converted to cents and decimals of a cent, rather than being too heavily rounded; the nominal value of the share has little effect except on the accounts of the company. The Stock Exchange will presumably convert to trading in euros when the banking system converts, and it will be necessary to take care only in share price comparisons and Capital Gains Tax calculations.

10.6.3 Since shares throughout the E.U. will all be traded in euros, there will be some pressure for stock markets throughout the E.U. to combine in some way, just as the provincial exchanges in Britain did some years ago. Will we see a single market, possibly E.U.-wide, possibly in London or Frankfurt or both connected by computer, for the 200 or 500 or so largest stocks in the E.U.,

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and separate national markets for smaller stocks? Will we see an approximation of company law, and of accounting and listing requirements, and (most important) of company taxation and of withholding taxes? Will we see a demand for E.U.-wide share price indices, particularly ones on which derivatives trading can be based? And what should the Institute and the Faculty, with their long involvement with share indices, do about it? These are still speculative questions, but they may have to be answered sometime.

10.6.4 LIFFE has already made provision for certain of its futures and options contracts, expressed in national currencies or in ECUs, which expire after 1 January 1999, to be settled in euros, if appropriate; so someone is taking it all seriously.

10.6.5 Fixed-interest stocks (bonds) will also need conversion. The same nominal interest rates will continue on bonds, but the nominal amounts held will become awkward numbers of euros and cents. Of greater effect is that the market in euro-denominated government bonds will become enormous. 'Risk-free' yields on bonds in euros will become the same, and any differences in yields between the bonds of different governments will represent different assessments of credit-worthiness, or different assessments as to whether the single currency system might break down. A single market in euro-denominated bonds must surely develop quite rapidly, and although holders will start out with their existing portfolios and some holders may retain a prejudice in favour of the bonds of their own government, I can see that large bond portfolios may quite rapidly become E.U.-wide. Will there also be a demand for EU-wide bond indices?

10.6.6 In the U.K. we have index-linked government (and other) stocks. These are based on the U.K. Retail Prices Index. Will E.U.-wide consumer price indices be developed, and will there be a suggestion that index-linked stocks should be based on these? I expect that a U.K. RPI will continue, and that there will be no need to change, but it is a point to be considered.

10.7 *Other Considerations*

10.7.1 I have only one point to mention here, but I should leave space so that other points can be raised in the discussion.

10.7.2 One point that has occurred to me: Switzerland is now surrounded by the E.U. When it is surrounded by a euro currency zone, will it feel any need to join the single currency? It is quite possible for a smaller country to use the currency of a larger one, or at least to have a one-for-one exchange rate: Luxembourg, in effect, uses Belgian francs, Ireland used to use U.K. pounds, Canada and the U.S.A. used to have dollars so close that their coins are still interchangeable (though not now everywhere accepted as equal). Will it be worth the Swiss following this example, in spite of the great strength of the Swiss franc and the Swiss banking industry?

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11. CONCLUSION

11.1 Points to consider in the discussion include:

—Is a single currency good or bad economically? I think that it will be very beneficial in the long run, but there are short-term costs.

—Is the single currency likely or unlikely to come about? I have assumed in these notes that it will, partly because I believe that it will, and partly because a discussion about the practical issues is unproductive unless one assumes that it will happen.

—What happens if the single currency is delayed? I do not think that it would make a great deal of difference in the long run if 1999 and 2002 were replaced by 2000 and 2003, because of technical difficulties in the changeover (not enough notes printed?), but there would be a great loss of confidence in the future of the E.U. if they were replaced by say 2009 and 2102, which would be equivalent to postponement *sine die.*

11.2 I have ignored the political and emotional considerations, some of which are based on fallacies, like the concern that the Queen's head will not appear on euro banknotes; her predecessors' heads did not appear on the notes of their day, and Scottish banknotes do not show the Queen's head now, so there is nothing sacrosanct in it. Unfortunately, the level of discussion in parts of the British press has been at this unhelpful level. I hope that the actuarial profession can avoid these trivialities.

11.3 Sadly, the Maastricht Treaty seems to mean the end of separate banknotes issued by Scottish banks, but there may be a provision somewhere which would allow them to continue.

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ABSTRACT OF THE DISCUSSION

HELD BY THE INSTITUTE OF ACTUARIES

Mr P. G. Kennedy, F.I.A. (opening the discussion)**:** The economic objective of a single currency is the elimination of barriers to a single market, but the resulting monetary discipline will inevitably cause hardship and unemployment for those regions whose economic conditions diverge, as already happens within existing countries, for example in the south of Italy. The balance of advantage will vary from country to country and from region to region. In the United Kingdom we need to be objective: a single currency will be less attractive to a redundant coal miner in Wales or a fisherman in Grimsby than it might be to an actuary in London. Fifty years ago the balance may well have been against monetary union, but today much of our food and manufactured goods is traded with the rest of Europe, transport is easier and cheaper, funds flow easily, and for service industries we now have the fax and the Internet. I agree with the author that the balance now favours a single currency.

However, I am concerned about the costs of conversion and disruption. It seems crazy to waste money on a currency that is almost the same as the pound. If the euro is already worth nearly 80 pence, it may well be approaching parity by the year 2002. Conversion would then be ridiculous. In ¶10.7.2 the author's suggestion of merely shadowing the euro is an excellent idea, not just for Switzerland, but also potentially for the U.K. and Ireland.

I also share the author's doubts about the relevance of some of the Maastricht convergence criteria. When the East German economy was absorbed at far too high an exchange rate, it collapsed. The Italians have now repeated this mistake in rejoining the European Monetary System at too high a rate. Table 4 shows that the limits of 3% on net borrowing and 60% on total debt are simply based on the German model. However, there is no reference in the Maastricht conditions, *per se*, to purchasing power parity, standard of living, economic activity, trade balance or unemployment. Of course other Member States can corset their economies to meet monetary convergence criteria for a short period, but at what cost? An opt-out offers no protection, as the Government is now finding out. Article 102a of the Maastricht Treaty requires all Member States to co-ordinate their economic policies, and Article 103 makes the economic policies of every Member State, even those with an opt-out, a matter of common interest. Germany has already warned that it will not tolerate devaluations against the euro by other Member States.

The irony is that I believe that, in order to make monetary union politically acceptable, both the Chancellor and the Shadow Chancellor are planning to let the pound drift gently down until it reaches parity with the euro. This aim is fraught with uncertainty. Its disclosure would send the pound into free-fall. Yet the Government cannot be seen to be controlling such a devaluation for fear of triggering legal action and retaliation from our partners. So it needs to be market led.

What are the odds of each country joining, and at what rate? Table 3 gives us one version of the market's view. The favourites are those countries whose bond yields are less than 6.1%: Austria; Belgium and Luxembourg; France; Germany; and the Netherlands. The Scandinavians will probably all decide together, perhaps, on the basis of referendum results. Italy, Spain and Portugal may not be accepted, although there is nothing to stop them from adopting the euro anyway, if they want to.

Now, the U.K. has 10-year bond yields 1.5% p.a. higher than this inner group and 1.25% p.a. higher than the ECU. This implies a 10-year forward rate for the euro of 90p. If the pound is fixed in early 1999, that devaluation of nearly 15% against the DM and 11-12% against the ECU currency basket will take just 2 years. Surely the Government will not accept the cost and disruption of converting at the ridiculous exchange rate of 90p, and it will wait for parity with the euro. My reading of these bond yields is that they reflect considerable market uncertainty, and that the implied 90p forward rate is just an average. There are undoubtedly some optimists who expect the pound to be fixed at roughly the current rate of 80p, but others are betting on a different scenario, which means a 20% devaluation first.

Mr H. A. R. Barnett, F.I.A.: My first reference comes from ¶1.3, where the author says, "independent states, each of which has retained its independence." This is true so far, but for how

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much longer? The author mentions other federal states. The conclusion is that, in the federation which must follow the single currency, the U.K. will be comparable with the state of Montana, Montreal, the Canton of the Vaud, or the Northern Territories of Australia.

It is true that a succession of Chancellors of the Exchequer have favoured a single currency. The exceptions are the present Prime Minister, who is sitting on the fence, and Norman Lamont, who was pushed off it. Could these preferences be because the job of Chancellor of the Exchequer would be made easier? If it comes to that, the British State would scarcely need a Chancellor of the Exchequer.

Similarly, there must be a risk that the European Bank — or some other central body — will dictate what bases for valuations of life assurance companies, friendly societies, pension funds, and even health insurance, should be used, or that pension funds will need to apply to a body in, perhaps, Frankfurt for tax exemption. Indeed, most of our work may need to be centralised near the European Bank. Is this a good thing? Would actuarial bodies in the separate federal states really be needed? I do not think that I have heard of actuarial associations in any of the American states or Canadian states. I fear that there would be a European Actuarial Association, with its headquarters in the largest of the states — which is Germany — relegating the present national bodies, including ourselves, to the status of provincial societies. I am not sure whether this is what we want to happen.

In ¶3.11 it is implied that, if wage rates are pushed up in the poorer regions, this could lead to unions in the wealthier regions pressing for the maintenance of differentials. Would it be a good thing to risk continental leap-frogging?

In ¶5.11 it is stated that "the European System of Central Banks and the European Central Bank must be independent of the Community institutions and from the governments of Member States". So, the economy of the European Union will be run by a completely unelected body; dissatisfaction with such a body could lead to anarchy or even to a dictatorship. No less a person than the Governor of the Bank of England stated (in the report of the Confederation of British Industries Conference, and reported in the *Daily Telegraph* of 13 November 1996), that: "A single currency could give rise to serious tensions and lead to persistently higher unemployment in some areas", and: "The risk was that some [countries] would end up with a policy that was too expansionary and some with a policy that was too inflationary", and also: "It would be better for everyone to drop the idea of monetary union altogether rather than risk the kind of economic dislocation...which a failed union would produce".

I am not sure to what extent the author agrees with everything he writes. I find it difficult to believe that he, whose roots are in Scotland, even though he was not born there, where many of the population are not even happy about the more limited union between Scotland and England, should be such an ardent advocate of the wider union now under discussion.

Mr D. C. Mason, F.F.A.: I have two linked concerns. The discussion paper before us concentrates on operational issues involved in implementing a single currency. I believe that this is the wrong emphasis; we still have strategic issues to address. I am also very concerned that our profession is not doing more to provide the technical analysis needed to support an informed debate at the strategic level.

I believe that the apparent increase in Euro-scepticism and the statement by the Labour Party that it, too, would go through the referendum process if it is in power when fundamental decisions have to be taken, are not primarily political stances, but a realisation that there are deep economic considerations here of which they, the politicians, do not yet have an adequate grasp.

Who else should be helping to provide this briefing but ourselves? We are the ones who profess to be the experts in long-term scenario planning. I say that it is an indictment on the profession that the author can say, in ¶3.4, that "I have not seen quantified either the possible gains or the possible costs. I believe that the gains will be considerable, but I cannot prove it, and I do not know how they could be reliably estimated. On the other hand the costs are obvious, and could probably be quantified more easily."

I believe that economic and monetary union will proceed, as intended, on 1 January 1999. I think that we are now too late to achieve a postponement of that overall decision, but we are not too late to provide informed input to the U.K. debate. I would urge Councils to commission the research that is required now, with the aim of having it available for debate at the meeting at the Faculty in March 1997.

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Monetary union will not be implemented successfully unless there is an appropriate regulatory structure to ensure that the system will work for the benefit of the economies which it is supposed to serve. That structure will not be in place for 1 January 1999. It is not possible to separate out the 'political' arguments from the economic and social ones. The political debate follows on from trying to manage the economic consequences of the decision to create EMU. I believe that the move to EMU creates a radically new environment in which the systemic trust which underlies all financial services activities, but particularly banking, must be re-established. Trust is an emotive word, but it is the correct one. A banking system can only work if depositors trust that it will do so. The paper makes it clear that the public, at this time, does not have that trust, it does not understand the controls, and correctly so. These controls may be called the political dimension 'issues of sovereignty', the name is not significant. Union cannot succeed in the long term without this trust. It is just as worrying that the paper points out, in ¶10.6.5, that a reason for different bond yields from countries participating in EMU could be because they reflect different probabilities of secession! If those who wish monetary union to succeed, such as the author, are postulating that at this time, what hope is there for long-term stability? We have seen in the U.K. the uncertainty created in the late 1970s by something as small as a potential Scottish devolution, or more recently the impact on Canada of the Quebec question. We do not know the dimensions of the problem if monetary union were to break up, particularly after July 2002, but we must try and put orders of magnitude on it. This is why I disagree with the author when he says, in ¶3.4, that 'the costs are obvious'. I cannot believe that he has included the consequences of a break-up of the Monetary Union in this statement.

Do we look for a solution in the United States of Europe? That is one name that has been given to a possible political framework to go with economic and monetary union. Such a United States could be a better solution than what the public perceives as the current position, where the bureaucrats of Brussels and the judges of the Strasbourg Court exercise authority over us without there being any valid mechanism for us to monitor their actions. However, a United States is not, in itself, a full solution, and would bring its own considerable downsides. We already have the position, in any one country, that it is less easy today than formerly for the central bank and the government of the day to control the money supply within that country. This is because of the continuing growth in derivative instruments. I understand that the amount in flow during the trading day can exceed several days' net trading value, and that the latter daily trading value can itself exceed the underlying capital of the financial system. Traditional forms of control of money supply have not addressed these modern forms of money, and, in particular, the systemic risk which would arise from the failure of a counterparty during the trading day. A significant amount of work in identifying these new systemic risks and in creating an appropriate set of control mechanisms is already being undertaken, but if EMU is to be implemented on the same time scale, it is my view that these two processes of developing appropriate regulatory frameworks must be taken forward in parallel. I believe that there would be an increased risk of failure of EMU if EMU proceeded before these new mechanisms were in place.

Mr C. D. Daykin, C.B., F.I.A.: I want to focus on the question of unfunded pension liabilities, which is not peripheral in many people's minds. The recent Social Security Select Committee Report explicitly brought out the question of unfunded pension liabilities as having a direct influence on the single currency issue. The report, which came out at the end of October 1996, referred to the studies that have been carried out by the OECD on the level of unfunded pension liabilities in the different European Union states. They quoted figures of 19% of GDP for the U.K., and compared that with the figures for the larger countries in the E.U.: 98% of GDP for France; 113% for Italy; 139% for Germany. The report went on to argue that our current national debt, being equivalent to about £5,000 per person, would be increased to some £30,000 per person if we had to shoulder the unfunded pension liabilities of the other countries.

One of the arguments that is adduced is that the definition of debt within the Maastricht criteria does not take account of unfunded pension liabilities, and maybe it should, because that would give a very different picture in terms of the debt position of the different countries. It is interesting that the Chancellor's response to this strongly emphasised that Article 104b of the Treaty makes it clear that

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no Member State is liable for the commitments of any other Member State, even under the single currency, and therefore there is no way in which we would be held liable for this under a single currency arrangement.

The position is clearly that other countries' social security schemes have higher benefits; there is a much heavier burden of unfunded liability than exists in the U.K., where we, traditionally, have had a funded system for much of our pension provision. However, the extension of that argument to say that it would actually result in an unreasonable burden on the economies of those countries who have this method of financing social security is a *non sequitur*. In fact, Germany and France have had successful economies over the past 50 years, notwithstanding the fact that they have not had large funded pension sectors. There are obviously other factors involved in determining whether a country is successful economically.

I was interested that the Social Security Committee, not withstanding their fairly strongly Euro-sceptic views, came out with some very strong 'pro-actuary' recommendations: firstly, that the Government should publish annually a comprehensive account, approved by the Government Actuary, of unfunded state pension liabilities and unfunded occupational liabilities; secondly, that the Council of Ministers should convene an expert working group, to include the Government Actuary, which would do the same thing on a European basis. I can see that there will be some practical difficulties in coming to comparable figures.

It is ironic that, a few years ago, the Euro-sceptics were arguing that the reason that the U.K. could not join a single currency was that its economy was not strong enough; it would be driven to higher unemployment or to low real wages by the effect of a single currency. Now they seem to be arguing that we will be so strong compared to the others that we will end up shouldering all their debts.

Mr A. J. Wise, F.I.A.: With regard to the Maastricht convergence criteria, I observe that the annual budget deficit is not supposed to exceed 3% of the state's GDP. On the face of it, I think that pensions do not come into this calculation, because National Insurance and taxation ought to be covering that. As I understand it, the Members of the Social Security Select Committee, whose report was referred to by Mr Daykin, are worried about the future strains on this position and about a gap opening up between the income and the outgoing in future years. So their recommendation, which involves the Government Actuary doing further calculations, seems to be one of asking for an actuarial type of valuation, on a long-term basis, of state and public sector pensions. So, if there is an increasing bias in costs, then these would be reflected in some actuarial method which would produce higher current costs than the actual pay-as-you-go amount of contribution to pensions. So, then the committee seemed to argue that the shortfall on the actuarial assessment would be included in the annual budget deficit, which is to be counted against the 3% of GDP criterion. Countries such as France and Germany, which are struggling to pass this test, would fail.

Considering the second convergence test, that is that the total government debt should not exceed 60% of the state's GDP, the Select Committee has pointed out that the definition of government debt excludes the capital value of unfunded pension promises. It points to the imbalance between the U.K. funding of pensions and that of the rest of the E.U. Its recommendation is to include these capitalised liabilities with government debt for assessing the 60% GDP test. The effect of adopting this proposal would be to cause the re-stated debt figures of all E.U. states, except the U.K., to be vastly in excess of the 60% test. Then they would all fail, and only the U.K. would be eligible for EMU.

To paraphrase the basic message of the Select Committee, one might say that national pensions should be assessed actuarially as if one were looking at a very large pension scheme with little or no assets. We could surely support that proposal in so far as it provides better information and understanding. However, the proposal to use such assessments for the Maastricht Treaty convergence criteria seems to be more applicable to future scenarios in which pension obligations are monetised and turned into government debt. In such a scenario, I would expect other aspects of state finance also to be capitalised, such as infrastructure assets. It does not seem right to pick on pensions alone for capitalisation.

The Select Committee raised concern about whether the U.K., having made much better advanced funding provision for retirement pensions than most other states, will be disadvantaged by joining the

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EMU. The issues seem already to have been reasonably well covered, with the general conclusion that, because of our sounder long-term pension finances and other employment factors, the U.K. should remain reasonably well placed to attract new industrial investment and to prosper either within or without the EMU. For instance, if other states borrow to finance pension costs, they will push up European interest rates, including those in the U.K., even if we retain a floating pound. I am inclined to the view that the U.K. should still have attractions for inward investment, and that the economy should grow reasonably well either way. It seems to follow that one potential disadvantage of the U.K. joining the EMU lies in the possibility that we will draw too much new investment away from other E.U. areas. This could lead to high levels of unemployment elsewhere in Europe, which Brussels would be able to tackle through the structural fund system. In the end, the U.K. could indeed end up indirectly subsidising other states because of our almost unique pensions system.

The subsidies would not be direct — that is prohibited by the Maastricht Treaty. They would be indirect and of the kind that I understand operate on a relatively large scale in and between the United States of America. The cost of any such future cross-subsidies in this rosy scenario of future U.K. success would be ameliorated if the pound were then allowed to float upwards relative to the euro.

Mr K. E. Ayers, F.I.A.: The author tells us, in ¶1.3, that his approach contrasts with the Euro-sceptic attitude of many of those in Britain. He goes on to say that he has to wonder why so many British people are reluctant to see the U.K. participate fully in the federal structure that has been created. He also tells us, in ¶1.2, that he favours European Union and the single currency. He emphasises the point yet again in ¶1.4, where he tells us that a single currency is a highly desirable feature. I have no wish to turn this discussion into a pro-European versus anti-European argument, but I think that there is another point of view.

In Section 3, so far from setting out an argument in support of his stated belief, the author identifies a significant number of valid disadvantages of a single currency. The fundamental difference between the countries of Europe and the U.S.A. is that the countries of Europe have been separate economies and currency units for a very long time. As a result, national governments, if they are allowed to continue to exist, will be less able to accept the hardships that the author mentions — and many that he does not — and will be unable to alleviate them without acute discomfort for their own populations. The problem is exacerbated by the apparent determination of all countries to qualify at the outset.

If a single currency is to be sustained, it requires genuine economic convergence, the timing of which will vary from country to country. The fudges that we have been seeing recently will enable some countries to qualify for membership without this genuine economic convergence, and the pain will be even more acute once the short-term palliatives have become ineffective or expired. Then there is the practicability of sanctions for countries which cheat in one way or another. To achieve the right currency levels for all participating countries at the same time would be impossible.

Those who really want the single currency to succeed should find ways of insisting on genuine economic convergence before countries are admitted, and if this means, as it will, that not all can join at the same time, then so be it. It is largely because I am concerned about the viability of the whole enterprise on economic grounds that I oppose the U.K. entry.

On the subject of pension funds, well covered by the last two speakers, while it may be true that the U.K. will not be responsible for the pension debts of any other Member State, the very size of such debts, if they are to be monetised, which seems to be the fear, will inevitably influence the interest rates at which money can be borrowed. In an area covered by a single currency, the presence of such debts will increase interest rates community-wide, which will inevitably have detrimental economic effects in the U.K.

In the section on investment the author fails to mention the likely asset allocation changes for pension funds and insurance companies that would result from the introduction of a single currency. At a stroke, all equity and bond investments in the common currency area would become domestic currency investments, with a resulting loss of diversification benefits. In order to reduce portfolio volatility to its previous level, it would be necessary to increase non-common currency allocations significantly — a move that would not be without cost.

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Mr P. M. Booth, F.I.A.: The advantages of a single currency have been quantified by the European Commission and by independent economists, and seem to have been well publicised. They would appear to amount to 1% to 3% of GDP, and mainly relate to transactions costs.

However, the author neither considers the risk, nor the magnitude of the risks, of a single currency in sufficient detail. The literature on optimal currency areas does not give definitive answers as to whether or not an area is suitable for a single currency, but it gives useful guidance, and I think that it should have been referred to.

Basically, the more economically diverse an area is, the more likely it is that there will be, from time to time, economic shocks which require a change in relative price and wage levels to move economies back into equilibrium. Such shocks could include: a change in the price of oil, affecting mainly the U.K.; a change in the relative price of agricultural products, which could arise from the unwinding of the CAP, affecting mainly the South of Europe; or, most importantly, a change in capital flows, which could affect any country at any time. All these shocks require an adjustment in the terms of trade. We must ask the question: are these shocks likely to occur regularly? If the answer is 'yes', are product and labour markets sufficiently flexible, within the E.U., for such shocks to be accommodated?

The problem is well illustrated by the experience of the U.K. between 1988 and 1992. The capital inflow into the U.K. in 1988 pushed up the exchange rate. The then Chancellor of the Exchequer was shadowing the DM, and printed money to pull the exchange rates back down. The result was that, instead of external adjustment arising as a result of a currency revaluation, it occurred as a result of the price level rising. The opposite happened from 1990 to 1992. Capital fled to Germany, partly to finance reunification. An exchange rate fall should have generated the required terms of trade adjustment. Instead, there was a massive monetary tightening, disinflation, recession and unemployment.

I believe that it is difficult to argue that the economies of the countries of the E.U. are sufficiently similar, or capital flows sufficiently settled, that there will not be frequent economic shocks with a requirement for adjustment. I believe that it is impossible to argue that the E.U., unlike the U.S.A., has labour and product markets which are sufficiently flexible to facilitate movements back to equilibrium without currency movements. In these circumstances a single currency could be most damaging.

I now consider whether or not the euro will be an inflationary currency. The analogy that the author makes with the gold standard is very misleading. The critical thing about the gold standard was that all currencies had an anchor — gold — which guaranteed their value. The euro will have no anchor. Also, the gold standard was a multi-currency world which allowed adjustments or exit *in extremis*. The euro will be a single currency with no exit or adjustment possibilities. Then, as the author has said, governments can only gain from inflation when people do not expect it. Then governments can float debt at lower interest rates and devalue it. With the euro, we have an explosive combination. We would have, I submit, inadequate market and constitutional constraints on any European Central Bank. On top of that, we have a diverse currency area, part of which could be in recession at any time with possible political pressure for reflation. We have a Continent with a serious, if not chronic, debt problem, and an investment market which could follow the author's lead in not expecting inflation. In these circumstances, the politicians in Europe will have much to gain by encouraging the Central Bank to create inflation. The temptations may be too great and the constraints too weak. It is the temptation to reflate to devalue debt that is, incidentally, one reason why pension liabilities are an important issue.

An area to which actuaries can make a contribution is in the debate on problems surrounding the convergence conditions. Should actuaries not be able to pass an informed judgement on issues such as: is a one-off tax by the Italian Government, with an equal and opposite tax credit cashable in 1999, a sound reduction in government liabilities; does the French Government, making a one-off raid on a pension fund, contribute to a reduction in the sustainable deficit; and, perhaps most importantly for actuaries, is it reasonable to ignore pension liabilities when calculating government debt?

The author and Mr Daykin have asked why debt and pension liabilities matter. The answer, apart from the temptation to create inflation, is that capital movements often require terms of trade

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adjustments to facilitate the corresponding changes in trade flows. Such terms of trade adjustments, with a single currency, would cause the economic dislocation about which so many of us are worried. It was this type of problem which led a member of the Board of the Bundesbank to indicate how EMU could blow the E.U. and the single market apart, or that there would have to be complete political union to enforce the economies and countries of Europe to come together, possibly against their will. That would not be in the interest of any of the countries of Europe.

Mr F. Imam-Sadeque, F.I.A.: In ¶¶8.5.5 and 8.6.4 the author says that he does not see anything preventing countries which do not meet the criteria from joining EMU in the first round. The author has already referred to the recent reports by the European Commission and the EMI. The Commission took a similar view to the author, in that it basically said that all countries were making enough progress to meet all the criteria, except for the U.K., Greece and Italy. Even then the Commission said that Italy was making enough progress to make it into the first round, potentially. However, the EMI stated the opposite opinion. It said that none of the large countries were making sufficient progress.

I trust the EMI more than I do the Commission, because it is their job to ensure that the future ECB has the credibility that it needs within bond markets and within financial markets in general. The EMI stated that one of the reasons that it is very important that countries at least make an effort to meet the criteria in a genuine way, is that, if it is done in a false way, then subsequently the euro will be seen as a soft currency. The EMI, which becomes the ECB, would be forced to increase interest rates to a higher level than otherwise would have been the case, because the euro would be seen as a soft currency and euro denominated debt issued by the E.U. states may be seen as soft currency debt.

Mr Booth has mentioned optimum currency areas. I now add a comment on labour mobility, which is much lower in the E.C. than in the U.S.A., simply because of language and cultural barriers within the E.C. In the U.S.A. labour mobility is one of the major shock absorbers for problems in any state; that is that labour is able to move very freely from one area to another.

Another factor is that fiscal transfers within the U.S.A. account for something like 40% of GDP. They involve transfers from one state to another, from economically strong areas to depressed areas. Within the E.U. we have transfers at a much lower level. I believe that it is something of the order of 1% to 5% of the E.U.'s GDP. We already have rich countries complaining about the subsidies that they pay to poor countries. I think that, if we saw fiscal transfers within the E.U. going to U.S. levels, then there would be even more vociferous complaints from Euro-sceptics. To suggest that we can go to the U.S. model forgets all the culture, the history and the previous divisions that there have been within the E.U.

It has already been stated that the paper was not meant to be on the political aspects; but I do not think that one can discuss EMU without looking at the political dimensions. In ¶8.6.4 it states that the Labour Party is likely to form the next Government. I agree, but I cannot agree with the author's assumption that a Labour Government is highly likely to take us into the EMU. We have seen that the Labour Party is as divided potentially on this subject as the Conservative Party is — it is just that it is able to hide its divisions better. It also would need to have a referendum.

Many people within the E.U. are sceptical of EMU. Even the German public, given the history that it has had of hyperinflation, is sceptical, and is wedded to the DM and the Bundesbank. If it really believes that it is giving up the Bundesbank for an Italian-type Central Bank, then it will have nothing to do with it. It believes that the future ECB is going to be as hard on inflation as the Bundesbank. Once it realises that it is really going to be a watered down version somewhere in between the Bundesbank, the Central Bank of Italy and the Central Bank of France, we may see many problems come the German Federal elections in 1998.

Mr J. P. Ryan, F.I.A.: I am strongly pro-European, but I think that the implementation of the common currency is likely to be a disaster in social and democratic terms. The real reason for this is that we are actually putting the cart before the horse; we are not creating the democratic mechanisms that are necessary to have in place to deal with the inevitable economic dislocations that a number of previous speakers have alluded to.

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It is worth thinking through one or two illustrated examples. Reference has been made to East and West Germany re-unification issues, which occurred at the wrong exchange rate. The effect has decimated and destroyed most of East German industry at the expense of avoiding West German inflation. With a more democratic process in place, surely the East Germans would have voted for a much greater degree of inflation in exchange for the more gradual change in their industrial process. This, I am sure, would have added to the economic welfare of mankind by allowing a more gradual transition, rather than the rigidities imposed by not having the democratic institutions in place first. We have seen a similar situation in France when M. Chirac tried to make France satisfy the Maastricht Treaty criteria. There were riots on the streets because, politically, it has become unacceptable.

Consequently, apart from the economic issues and the economic losses that other people have alluded to earlier, we are also likely to see social unrest and other serious problems unless we get the democratic systems in place. There are going to be trade-offs, one counting against another: the Greek under-developed areas against the developed German economies; the need for lower wage rates in one part of the E.U. against higher ones in other areas. Unless we have the mechanisms to resolve these issues, we are going to spend many years arguing about them.

If we go in with a large number of states having a common currency, we are going to spend the next 20-30 years arguing and creating mechanisms to provide the flexibility which we have at the moment. If we did it the other way round, it would be much easier.

The example of the U.S.A. has been mentioned. It is important to realise that it has taken 200 years to get that country to its current position, and that it has a democratic system at the federal level. Each individual state is allowed to vote for the Senate and the House of Representatives, and it is the politicians that have control and not the bureaucrats. This is a fundamental difference between the U.S.A. and Europe. We do not have those safety valves, and if we do not create them then we are going to spend much time fighting and arguing when we could be working more profitably towards a greater extent of European unity.

In Section 9 the author refers to the Groupe Consultatif. That body is a very good example of an extremely undemocratic organisation. It does not talk to its members. It does not communicate. It has a very important role to play in bringing the unification of the profession. We would all benefit if it became more democratic and communicated more with the membership as a whole rather than the clique that makes up its membership. I am Senior Vice-President of the Institute; I have been on the Council for the best part of 10 years; I can only recollect having the right to say one thing in all that time on the Groupe Consultatif, and that was whether we published the Guidance Notes in the Year Book, which we decided not to do! Actuaries can show an example, within our own profession, by making our own institutions much more democratic. This would be in our interests, and would be in the European interest as a whole.

The other tragedy of the common currency controversy is that we are not focusing on the other main issues. If we want to harmonise trade more, particularly in the insurance industry, which, as a profession, we probably know most about, harmonising the legal systems and the tax system is much more important than having a common currency. If we go through the paper, which clearly lays out the technicalities of converting to a common currency, there are no issues that prevent insurance companies writing business throughout the E.U. In the general insurance field, the lack of common policy conditions, common legal conditions and systems of compensating victims are much more serious impediments. If we concentrate on harmonising legal and tax issues, we would create something which would be of value. What should we, as a profession, do about this? There is a great opportunity for us to take something of a leadership role in this area. First of all, we could set an example with the Groupe Consultatif.

In his Presidential Address, the President pointed out the public interest and emphasised that we should concentrate on it. We can legitimately point out that the public interest would be much better served in harmonising legal, tax and other regulatory issues rather than whether we can save when exchanging our money for our holidays. Exchange costs do not make that big a difference. We can tie this into the public interest argument, and we can take it forward using our connections with the insurance sector, and, through these, to British industry as a whole.

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Dr D. Gilling-Smith (a visitor)**:** I want to address three of the propositions which are commonly used to base the case for a common currency:

(1) that the anchoring of sterling to the euro and ultimate replacement by the euro would lower the risk of future inflation;
(2) that the idea is that it will lower the cost of cross-border transactions; and
(3) that the direction of European monetary policy by an independent ECB will produce benefits.

The author refers, with apparent approval, to the gold standard as a good precedent for anchoring sterling. I disagree. Churchill, in *The Gathering Storm*, admits that the biggest mistake that he ever made was his decision (on bad advice) as Chancellor of the Exchequer, in 1925, to put the U.K. back on the gold standard. He said that it weakened us financially, to the point where we could no longer support the armed forces needed to maintain our position as a world power. He also blamed the resulting financial misery for pushing so many European countries into dictatorships of left or right. It took a mutiny in the Royal Navy in 1931 over pay cuts to get us to come to our senses and get off the gold standard.

Those of you with longer historical memories will remember the parallel disaster that destroyed Sir Walter Scott and many British companies and people in the great crash of 1825. Britain had abandoned the gold standard in 1797 to mobilise the productive capacity needed to beat Napoleon. On the bad advice of Ricardo, we went back onto gold in 1821. It was a disaster. Having learnt nothing from history, we made the mistake of locking ourselves into the fixed parities of the Bretton Woods Agreement at the end of the Second World War. Instead of the U.K. being able to mobilise its productive capacity, we were locked into a straitjacket of stop/go, with unnecessary constraints always based on the ups and downs of our dollar reserves. Worse still, we lost our dominant position in the Middle East. In 1956 we had beaten the Egyptians, but the government of the day caved in because of the run on the pound. With a floating exchange rate we could have exploited our military position. Chancellor of the Exchequer, Nigel Lawson's attempt to track the DM and our disastrous entry into ERM is such recent history that no comment is necessary.

Why is it that successive governments in the U.K. and elsewhere fail to grasp the point that the only sensible backing for a nation's currency is its productive capacity and ability to deliver needed goods and services to match its money supply?

Considering transaction costs savings; this idea is largely driven by popular folk-lore based on personal experiences of changing holiday money. Potential savings are illusory. Take somebody who has a sterling account with a British clearing bank in Brussels. He then tries to ship money to the U.K. branch of the same bank. There is a minimum charge of £25. This is just sterling to sterling; and is likely to be the pattern of charges for moving euros from country A to country B, but, no doubt, with much higher bank charges.

If the euro was practical, then the sensible way to test it would be to start printing banknotes and minting coins and let the people try it out.

Over the years I have always kept a stock of American Express, Swiss franc and U.S. dollar travellers' cheques, which I know I can exchange anywhere. In fact, multi-national companies could get the same results as from the single currency by just keeping their reserves in Swiss francs and trading between each other on a Swiss franc basis.

If we look at the control of monetary policy — if 15 or 20 finance ministers each attempts to guide his own country's monetary policy, there is a probability that 60% or 70% would get it persistently wrong; but some will get it more right than wrong. Put them together in a quango, where their national needs and thought habits are different, then there is a certainty that they will make a far bigger mess together than any of them could make on his or her own.

This leads to the curious argument that the ECB should cease to be accountable to any democratically elected government, but be left to rely on divine providence. This argument has a very interesting parentage. A German political philosopher of the 1920s wrote an interesting treatise to the effect that democracy was a failure and that democratically elected governments made such a mess of monetary policy, as they made a mess of everything else, that it was better to trust the job to experts who knew what they were doing. The author was little known at the time. He was in jail. His treatise

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subsequently became a best seller under the name of *Mein Kampf*, and his name, Adolf Hitler, is one that few of us can forget. I think that the economic case for a common European currency is unproven, to put it mildly. The economic case against is very strong indeed, as well as the political case against.

Mr T. G. Arthur, F.I.A.: I am not really a Euro-sceptic, rather I am a monetary sceptic. I do not believe in nationalised currencies, never mind an imposed internationalised one. I approach this problem from a somewhat different angle, with particular reference to banking. I conclude that it is highly likely that the euro proposals, as they are presently constituted, will not go ahead. This view is supported partly by history and partly by analysis of money and banking.

A unique feature of banking, ever since it stopped being a straightforward safe deposit for its clients, is that it issues its own money substitutes. The real money is 'external' money or 'redemption' money, which the depositors can redeem on demand. One of the major skills in banking is deciding how much money substitute it is safe to print in respect of each unit held in reserve of real money, bearing in mind that all the money substitute could be claimed for redemption at any time. Historically the redemption money was often gold, and today it is Bank of England notes. The substitutes were, and broadly speaking still are, loans in one form or another, which then get spent and returned to a bank as somebody else's deposit.

The first point that I make is that today's redemption money is intrinsically worthless. It has to be supported by legal tender laws. I am not allowed to refuse a £5 note in payment of a transaction. Government control over monetary policy is exercised basically through the Central Bank's absolute monopoly over redemption money. The situation *is* as it is today — with fiat, or paper, currency and intrinsically worthless redemption money under a Central Bank monopoly, as opposed to a former system, such as the gold standard, but not necessarily so — precisely because gold limited governments' freedom of manoeuvre; and here I disagree with Dr Gilling-Smith's description of the gold standard's difficulties. The problems which the author has listed in the paper are basically some of the very reasons why gold discipline was too much for governments to live with. Indeed, the history of the gold standard is littered with broken promises after the government took the monopoly of note issue. This occurred around 1700 in England, and in 1844 in Scotland. That explains why, in the Industrial Revolution, there were fewer problems in Scotland than in England. One of the reasons for these was because of the Bank of England's monopoly of note issue in England.

I do not know of any historical case where two or more sovereign nation states have merged their fiat currencies without merging their governments. The U.S.A., of course, did not do it, because the dollar was the common currency from the outset. However, even then they did not have a fiat currency. I think that if the euro is going to work, then it would probably have to be imposed overnight without any parallel period at all. Why do I say that? Basically, because it seems to me that the politicians, although not all the Central Banks, have forgotten, if they ever knew, that the function of money as a unit of account, like yards, metres, decimal coinage, and so on, is the least important of the three functions of money. A unit of account is not necessarily a currency at all. Plenty of people used to use the guinea as a unit of account when the currency was a pound. I do not think that anybody would mind if the euro was a universal unit of account as long as it is not a universal currency. There are two other functions of currencies. One is as a medium of exchange; the other is as a store of value. It is these features which mean that it is no more desirable to have a world monopoly in currency production than it is in car production. The same criteria apply.

Taking the store of value function first, we have had some discussion about this and about the problems of long-term contracts with specific interest rates built in. Amending those contracts will create enormous numbers of winners and losers. In contrast to that, the medium of exchange function requires that you have to do it overnight. Fiat paper currencies serve as media only because they are imposed through legal tender laws. Who is going to use the euro in the transition period while his or her own familiar currency retains legal tender status and the euro does not have that status? Who is going to be responsible for providing sufficient notes to satisfy a run for redemption on the mark, the pound or any other currency? Who is actually going to provide those notes? Who is going to guarantee that the fixed exchange rates will definitely not change between 1999 and

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2002? My understanding is that, if those rates were subject to intense speculation, no government, certainly not the ECB, where the amounts subscribed as shares and reserves are very small, has offered that guarantee — and quite rightly too, given the amounts that they lost trying to defend ERM parities.

It is for these reasons that I think that the concept will actually break down before 2002.

Mr P. H. Grace, F.F.A.: Mr Ryan has commented on the Groupe Consultatif and on its method of operation. I am a member of the Groupe Consultatif's Insurance Committee, and was involved with working on the draft submission to which the author draws attention in the paper. The Groupe Consultatif was said by an earlier speaker to be an undemocratic body because it did not consult its members. The Groupe's members are the actuarial bodies within the E.U., and it undoubtedly went to these bodies before it made its submission on the single currency. Whether associations chose to reply was their affair.

I now comment on some of the implications for life assurance and for EMU. The author draws attention, in ¶¶9.3 and 9.4, to some of the problems with interest rates, etc. I propose to comment on the implications for U.K. policyholders flowing through from the possible realignment of interest rates if, and when, the single currency is established. If the U.K. adopts the single currency, it seems reasonable to assume that we will have more stable and lower inflation rates, and that, in turn, interest rates will be lower. I accept that, because of the demographic problems and the position of unfunded pension schemes, in the longer term interest rates may go up, although they will be lower initially.

This has implications for with-profits contracts, in particular with traditional with-profits contracts, and possibly some unitised with-profits contracts. Traditional contracts incorporate a guaranteed rate of return in the underlying premium rates. This guaranteed rate would have been set by offices a number of years previously, with a comfortable margin relative to the expected long-term investment returns of sterling. The margin will be partially eroded if the U.K. adopts the euro — it could even disappear if offices were particularly optimistic in their assumptions. In order to meet the statutory reserving requirements, a reduction in interest rates is likely to lead to reductions in equity backing ratios — that is, the proportion of with-profits liabilities covered by equities and property. That, in turn, could lead to lower payouts on the policies. If the equity backing ratios have been reduced, these payments could be lower in real terms, not just notional terms.

To the extent that many policies have been effected with the intention of repaying mortgages, the risk of there being insufficient funds on maturity to achieve this objective would be increased. It is a problem that has already been mentioned in the press because of falling interest rates, but it could get worse if we adopt the euro. It is an issue which the actuarial profession should have views on; it is a matter of public interest, and we should be prepared to make the public aware of the problems.

Mr P. J. Turvey, F.I.A.: The decision on the European single currency is a political decision that needs to be informed by an understanding of the economic issues. My concern is that we do not yet have enough information to make an intelligent decision.

One issue that I want to raise is that entry into the single currency is irrevocable. There are no contingency plans to cover a country which decides that it is unwilling or unable to continue in membership. I am surprised to find that many people do not realise this. Whilst we could (just about) leave the E.U. if we really had to, we could not leave the euro. The reason is that, once we are in the single currency system, all contracts will be expressed in euros. If a country leaves the system it would be necessary to know which contracts continued in euros and which would switch to the new national currency, for example 'new sterling'. If there was advanced planning and contingency plans, and small print in every contract to cover that contingency, it might just be possible for one country to leave. Without advanced planning it would be impossible. One country's attempt at withdrawal would lead to chaos and to the collapse of the whole system, because what would take its place? What happens if, in some country, introduction of the single currency leads to widespread unemployment and recession, and the government decides that it simply cannot continue? Could the system survive the departure of a major member in such chaotic circumstances?

The success of the system also requires that the ECB is run by wise central bankers who control

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the money supply and eliminate the risk of inflation. However, what happens if the ECB turns out to have feet of clay and makes mistakes? What happens if, for some great economic imperative, comparable to the integration of East and West Germany — such as the integration of Eastern Europe into the E.U. — the ECB decided to depart temporarily from sound monetary practice?

Now, let us suppose that we did join and then were forced to withdraw. Look at the effect on our life insurance companies. We would have a large block of assets denominated, immediately before exit, in euros, and liabilities similarly denominated in euros. We leave, and some of those liabilities might turn into 'new sterling', and some might remain in euros. The bulk of our assets might become 'new sterling' rather than euro. We could have a huge currency mis-match, and we could easily find ourselves technically insolvent.

If the issue of unfunded state pensions is not important, why are we bothering to consider national debt as a criterion of monetary convergence?

On the question of free trade, this, as other speakers have pointed out, is not a matter of how easily you can exchange money and the costs of doing so; it is not even a matter of laws, although those are important. The factors that are holding back free trade include language, culture, the cost of getting across to Germany or France or wherever, and the difficulty of speaking to the people there in a language that they understand, and persuading them that they want to do business with you. A single currency is not going to help any of that.

My analysis is that, in the long run, the ECB may be more competent than past British Chancellors of the Exchequer. If something went wrong, the consequences for the U.K. could be considerably more serious than those resulting from mistakes made by a British Government. We could not escape from the single currency system once we were in. We would have no power over the decisions of the ECB. On the other hand, if we retained control of our own affairs, at least we have an opportunity every five years to get rid of the people who are making a mess of it.

Mr J. M. McLeod, F.I.A.: The author, in ¶1.5, identifies three levels at which the single currency can be discussed, namely: the political, the economic and the practical, in descending order of importance. In ¶11.2 he identifies a fourth level, the emotional. I believe that he omits two others mentioned by Mr Ryan: the social and the fiscal, giving a six-level hierarchy of political, social, fiscal, economic, practical and emotional considerations. I believe that an Institute meeting is not the place to comment on the political and the social aspects, but that it is an error to ignore the fiscal implications of a common currency in this discussion. Just as the paper argues that the economic advantages of a single currency — lower transaction costs, etc. — are higher up the ladder than the practical every day considerations, so the fiscal implications of a single currency outweigh any economic considerations.

What are these fiscal considerations? The question to be answered is that, after the single currency, will all Europe enjoy the same direct tax laws, just as VAT is operated on a European basis now? The author does not ask this question, but he does answer it, albeit indirectly, in that, in ¶3.11, he envisages pan-European trade union negotiations on wage rates. Such pan-European negotiations could not possibly happen except in the context of a pan-European tax system. I can only assume that that is what the author believes will happen. Certainly that is what I believe will happen, and the safeguards in the Maastricht Treaty do not reassure me. Such a fiscal union and the disadvantages to the U.K. that it would bring about would, to my mind, dwarf the lower level economic advantage of smoother trade and no exchange rate costs.

I come now to a point not mentioned so far, either in the paper or in the discussion, namely the vast liabilities of U.K. pension funds that are funded. The contributions to such pension schemes currently escape tax at source. The Inland Revenue waives its right to levy such tax at the outset, preferring to levy it at the time of payment. This is largely an administrative arrangement, which, in the words of many official submissions by members of this profession to the Revenue, is what is termed 'fiscally neutral'.

However, the effect of this arrangement is that such tax monies waived in the past are not regarded as a national asset for Maastricht Treaty convergence purposes. On the contrary, given that some of that waived tax is invested in gilt-edged stock, the Revenue's generosity and U.K. citizens' prudence

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in funding occupational pensions will actually add to the national debt, requiring belt tightening elsewhere. This is clearly wrong.

I have long argued that such waiving of tax on pension fund contributions should be replaced by a system whereby the tax is not waived, but given up to the Revenue in exchange for some form of tax exemption certificate, redeemable when the pension benefits are eventually paid, thereby, in effect, bringing pension funds into line with PEP arrangements, to which, of course, they are fiscally equivalent. This will ensure that the U.K. will not be penalised for its prudence in funding its pension liabilities.

Mr P. G. Scott. F.I.A.: For some visionaries in Europe the single currency is a cure for war. The European dream was built out of the Second World War as a way to try to ensure that we would never have that horror in the Continent of Europe again. That depth of political drive means that it is an extremely serious subject indeed whether it should progress or not. That is why there are such strong views among politicians. I believe that those views are not as diverse as they may appear. The Bundesbank, as an example, has had a consistent view about monetary union for at least five years, to my knowledge, and it is, "Yes, we fully support it, but...". The U.K. Conservative government has, certainly, at some times in the past, had a strategy which says, "No, we do not think it is going to happen, but...". Those are very similar negotiating strategies. The key is in 'but'. The 'but' is all about the significant economic and social issues which the single currency would raise.

Without doubt we would need a significant degree of convergence, way above what is currently sketched out within the Maastricht Treaty criteria. Whether that degree of convergence is desirable or achievable is one of the key issues that Europe is going to need to decide over the coming years if the timetable is to be maintained. How many countries can converge to that degree? Should it be a subset of the current countries within Europe or should we be talking about a broader Europe?

When we look at the overall impact of why we are trying to do it, one of the key reasons has been said to be the reduction in the transaction costs of inter-European trade. With the world of electronic banking, the world of the Internet, how important is that going to be? Surely we could actually have far more efficient currency markets than we do today, thus reducing the transaction costs without the upheaval of the single currency.

What will the necessary degree of convergence of our economic structures do for the competitiveness of Europe relative to the major economic blocks of the world? Any of us who are close to the day-to-day impacts of European legislation are not optimistic that this can improve our competitive position on the world stage.

So far as the insurance industry is concerned, I do not think that the single currency matters too much. The industry and the actuarial profession should be able to manage the change of currency that would occur and the impact of the various exchange rate risks which might change with guaranteed contracts. I believe that it is well within our skills to manage this. The key issues are much greater for the economy at large. We need to try to raise the debate above the political level to understand the risk and reward to the social and economic fabrics in Europe. We need to understand the risks of going into a single currency, and finding that two or three years later it blows apart. The economic and social impact of that would be significant.

Mr P. J. Nowell, F.I.A. (closing the discussion)**:** Overall, this is extremely useful as a reference document. It gives some of the practicalities and how it is thought that a single currency will be implemented.

One of the interesting things about the implementation of EMU is the three-year transition period, and one speaker mentioned this aspect. Three years seems an extraordinarily long time to have the uncertainty, and it also seems to be a complication. In my view the concept of 'Big Bang' would be much safer, in which case maybe 1999 is too early and 2002 is too late. There has been much hysteria about this issue. The NAPF, I understand, were misconstrued as being concerned that it would cost £3m for the pension industry to write to everybody to tell them about conversion of their pensions. That does not seem to be an unreasonable amount. The author writes about the validity or otherwise of cheques throughout Europe. If you do not know the bank you do not accept the cheque. By 2002

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it is much more likely that debit cards and credit cards will have superseded cheques almost entirely. Thus it is probably less of a problem than it might seem. One of the points which has been brought out here is that, if EMU happens, it will be something of a compromise, and therefore interest rates will be probably lower than they have been historically here, but rather higher than they have been in the old Germany.

One point that has been brought out in the discussion is that there will be more non-E.U. investment, both by this country and possibly by Europe as a whole, in order to diversify their portfolios. To the extent that we invest more in Europe, we will find there will be more inward investment from the rest of Europe. The interesting thing which is not obvious, is whether there will be more or less inward investment from outside Europe into Europe if it had a common currency. I suspect that there will be.

I agree with the opener that the outer rim of Europe, or any bloc like that, will do less well than the centre, but the rim tends to get subsidised. However, unlike the opener, I see no reason at all why parity is needed.

Mr Barnett was concerned about loss of country identity and democracy and the risks of returning to the 1930s. The counter argument is that the ECB is not the great non-democratic institution. All that it does is stabilise the currencies. It is the politicians and others who are responsible for the economic policy. All that the bank has to do is to stabilise the currency within that policy.

Mr Daykin was one of the few who professed himself in favour of EMU. He discussed the pension liabilities. He expanded quite well the reason why our economic situation is much more like Germany and the rest than would first appear, just because of the effect of the funded pension schemes.

Mr Wise raised an interesting idea regarding how actuaries could come up with a more sensible approach to government funding rates and how they are measured. Perhaps one could validate the 3%/60% as being the right sort of ambition, or rather whatever the equivalent is, including pension funding. As was said, we could widen this to a much wider role for actuaries in central banks.

Mr Ayers was concerned about countries fudging issues to join rather than having genuine convergence. He made the point about investment in Europe, and said that there would be less in the U.K. and less overall in Europe, and that there would be more investment overseas. To some extent one has to ask whether that is a good or a bad thing. In many ways taking stakes in other economies and getting them to invest in yours is probably a good cohesive approach.

Mr Booth told us that the benefits of actually joining were estimated to be between 1% and 3% of GDP, and that the paper does not really take on board the true risks of a single currency. He was concerned about not having the release mechanism of a devaluation or revaluation in the economic tool kit in the event of a shock. However, in the past the U.K. has adjusted its exchange rate to ludicrous levels compared with our partners. In dollar terms it reached nearly 2.4 dollars to the pound, and then fell down to nearly one. That had dire consequences, and has been blamed for destroying large parts of British industry. In some ways, having a stabilising influence by having a bigger bloc might be a good thing.

Mr Imam-Sadeque was concerned that the fudges that were happening would not lead to a genuinely stable situation. He was also concerned with a lack of labour mobility leading to problems. To some extent there is the counter-argument which says that you can have relatively different economic policies because people stay put.

Dr Gilling-Smith gave us a history of the dangers of a fixed exchange rate. To some extent he missed the point, because the euro will be floating against other currencies. The pricing of the euro will depend on the success of Europe as a whole. Some of the decline and fall of the British Empire that he described was during a period when Europeans were doing rather better.

Mr Arthur suggested that EMU would probably not go ahead. He made a very valid point, which I agree with absolutely — if it is going to work it should be implemented as quickly as possible, so that there is not a period of uncertainty when politicians will waiver.

Mr Grace brought us closer to home and talked about the dangers of lower interest rates and the effect on long-term contracts, particularly ones which include some quite severe guarantees of interest rates or assumed interest rates. Companies which, in the recent past, have been giving those guarantees have not been looking long enough into the future. My own office has been very concerned to make

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sure that, if we have a long-term contract, we do not give guarantees, for the reason that it seems that inflation is likely to be kept well under control for long periods. We should think further about what will happen to our insurance contracts, and make sure that we can deal with them.

Mr Turvey looked at the opposite side of the coin, and considered what would happen if we left the EMU. It would cause far more contractual problems than converting into a global currency or a European-wide currency. That is something that we need to consider. I am sure that the intention will be that if we join EMU we will join for ever, but, nevertheless, 'what if' is often worth considering.

Professor A. D. Wilkie, F.F.A., F.I.A. (replying): Mr Barnett made me think of the fact that I do come from Scotland and that we have been through this before, in 1707, when there was discussion in the Scottish Parliament about whether to join England and go through with the Treaty of Union. There was discussion whether there should be a federal structure or an incorporating union. We now have an incorporating union rather than three separate parliaments. The pound Scots was converted to sterling at £12 Scots to £1 sterling at the time. It would have been somewhat odd if Scotland had retained its separate currency, quite apart from its separate bank notes, which is a different matter altogether.

Mr Arthur made a point about the process between 1999 and 2002. As I understand it, what will happen is that the ECB and the European System of Central Banks, which includes the Bank of England, will keep all their accounts in euros so that you may put your money with the bank of your choice. That bank then deposits it with the Bank of England. In the course of that process it is transmuted into euros, simply by a multiplication or division transaction. Your bank can then go back to the Bank of England and ask to have the same money out in DMs or in any other participating currency, because the currencies will simply be denominations of the euro. There was never a floating exchange rate between guineas and pounds, for example. A guinea was just 21 shillings.

I agree with Mr Nowell that it might be better if the whole process was a quicker one than from 1999 to 2002. Part of the problem is the physical one of changing machines, getting the notes printed, etc.

Mr Turvey asked how a country might get out. I would have thought that it might be difficult for a country to get out of the euro without also leaving the E.U. In the case of Ireland splitting from the U.K., there were various reasons why it did this, and one would not want a civil war to happen for a country to get out of the E.U. Ireland used the same currency as the U.K. for a while. It then changed, so that the currencies, which were originally indistinguishable, became separate currencies, even though they had the same nominal value. From about 1936 all life policies written in Ireland had to be classified either as Irish sterling or Irish pounds. There was a process that was gone through to separate contracts into different currencies. If a country needed to do it, it could all be done quite tidily.

Mr McLeod mentioned that the tax systems would have to converge. They have not in Switzerland. There are 26 different income tax systems in the cantons in Switzerland. There is also quite a small federal income tax. The Federal Government also collects customs duties. The cantons are independent states — remarkably independent. Some have pay-as-you-earn tax systems and some year-in-arrears systems.

Dr Gilling-Smith talked about the gold standard. We could have a further discussion about the history of that. I think that it is correct that Britain stayed on gold from the 1820s until the 1920s. I do not doubt that the 1926 return to the gold standard at the wrong exchange rate was a mistake. However, the prosperity of the 19th century was quite successful.

I now quote from the Social Security Report about unfunded pensions:

> "The authors have calculated the net present value of public pension schemes in the G7 countries. That is, the net present value of employee and employer contributions less pensions paid until 2070 plus existing assets over a range of assumptions about productivity growth, discount rates, etc.
>
> Taking the authors' middle assumptions in each case, the net present value of public pension schemes in this country is 19% of GDP. In our largest European partners, on the same assumptions the comparative figures therefore for net present value of the assets are 90% of GDP for France; 113% of GDP for Italy and 139% of GDP for Germany".

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Either they have the signs wrong, or they have the conclusions wrong. What they say is actuarial nonsense.

The President (Mr D. G. R. Ferguson, F.I.A.): It is only seven weeks since I gave my Presidential Address. The second paragraph of that address says:

> "It behoves the Faculty and Institute to make statements and to comment on all matters of interest to the wider public which lie within the purview of the profession, especially whenever actuaries are the recognised authority on the subject".

I went on to say that is not an easy task; firstly, because, as a profession, we are reluctant publicists; but, moreover, it is hard, and sometimes impossible, to reach a consensus on complex issues.

I do not think that we have reached a consensus in this discussion. Perhaps I should not be too surprised at that. However, I am not giving up the quest, and we shall certainly pick up Mr Mason's suggestion that further research needs to be done. If we cannot arrive at a point where we can make a consensus statement on behalf of the profession in this country, we will take up Mr Ryan's suggestion and do it on behalf of European actuaries through the Groupe Consultatif.

There is no doubt, as many speakers have said, that actuaries have an enormous amount to contribute to this debate. Mr Gordon Bayley had some wise words for me this evening. One of the things that he said was that the hardest thing about being President is the work that you have to do in preparing your Presidential Address. One piece of research that I did not use in the Address was a contribution from the Address, just over a century ago, of A. J. Finlaison. In 1894 he said that the most important financial event in the previous two years was the stoppage of free coinage of silver in British India, with a view to the substitution of gold as the medium to be used for the satisfaction of every public or private debt in that country. He went on to say that: "apart from the general interest which the important financial experiment of the government of India will have for the members of this Institute, it is worth noting that the proposal had come from Col. J. T. Smith, F.I.A., Master of the Mints of Madras and Calcutta". Is the decision on whether to enter the EMU also going to be made on the advice of an actuary?

Finlaison said that gold was more valuable than silver because of the far greater outlay required to produce a quantity of gold than to produce an equivalent amount of silver. Members, he thought, would be interested to know whether an increase in silver production has led to a decline in interest rates. Adam Smith, in the *Wealth of Nations*, certainly thought that would happen after a sudden acquisition of money or precious metals by foreign conquest. Finlaison then went on to say that one of the fortunate things was that the concentration of great riches had passed from the hands of a small number of individuals to the great institutions, such as the British insurance companies.

If John Finlaison believed that India coming off the silver standard was the most significant financial event a century ago, history may well show the decision taken by this country as to whether or not to join the EMU could be the most significant economic event during my Presidency.

The changes which will result will affect the institutions that we, as actuaries, serve, as Mr Grace mentioned. They are going to affect our economy whichever way the decision goes. They will affect interest rates, although one thing that I was surprised about in the paper was Table 3, which showed the ten-year bond rates. The remarkable thing about that table was the convergence which exists between interest rates in countries with such widely differing economies, a position which would not have happened a few years ago.

Although the majority of speakers have spoken out against the euro, there have been a number of people on the top table who have spoken in favour. I wonder whether that is going to be the same position in relation to the government. We cannot predict the future, and I am not yet in a position to tell you what I think that this profession's consensus contribution to the debate should be. I am quite sure that we should evolve one. There is no doubt, as a result of the excellent discussion that we have had here, that we have made a very good start in that direction.

We could not have had that debate without the author having prepared these 'Notes for Discussion'.

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He has given us an extremely interesting and rewarding sessional meeting, and I ask members and guests to thank the author.

WRITTEN CONTRIBUTIONS

Mr P. M. Booth, F.I.A.: Whilst part of an actuary's work involves managing problems of long-term financial uncertainty, including problems caused by inflation, most actuaries would agree that, where possible, the Government should seek to reduce uncertainty. Most actuaries would further agree that such uncertainty would be reduced if the price level were stable.

Actuaries have often shown an interest in the economic causes and consequences of inflation. However, knowledge about issues such as the economic causes of inflation can only help us predict inflation in the short or medium term. Actuaries could usefully take more interest in the institutional arrangements which can be developed, which can give rise to a stable price level in the long term. This may be an area where the actuarial profession could contribute to the debate surrounding the single currency, whether or not the U.K. participates.

There are various institutional arrangements by which the supply of money can be controlled. It should be understood that these are not mutually exclusive. In most markets competition is the most effective way to ensure that a sound product is delivered. This can also be true of currencies. There is no reason why, for example, the euro could not be accepted as a single denomination, but allowing competition between private banks in the provision of money. Such a 'free banking' approach has worked successfully in the past in ensuring a stable price level. The two basic constraints on a private bank, which prevents it from issuing too much currency, are concern over losing seigniorage and concern over solvency. A private issue of money would normally be more acceptable if its value is linked to a 'real' product or a commodity. Examples could include gold or a claim on a commodity basket.

It is my belief that the above kind of system is most likely to lead to a stable price level. The nationalisation of money has been even less successful than other nationalisations. I would, therefore, reject arguments against monetary union which rely on keeping political control of the currency within the U.K. However, this does not mean that domestic political control should be replaced by European political control. Given that free banking is not on the political agenda, what alternative mechanisms could be used to ensure long-term price level stability? Firstly, even with a central bank which was ultimately under political control, a gold or commodity standard money could be developed. The central bank would control the monetary base in such a way that the value of money, relative to a basket of commodities or relative to gold, would be constant. As with the gold standard, the central bank would be obliged to buy back central bank money and, in return, give claims to a basket of goods or to gold. Secondly, a completely independent central bank (under the New Zealand model), which has legal obligations (re-inforced by a system of fines and incentives) to keep inflation between prescribed levels, can be an effective method of keeping inflation low and of reducing inflationary expectations.

The author suggests that the ESCB will have, as a primary objective, keeping price stability. Intentions and objectives have not normally proven effective as a mechanism for preventing those central banks which are ultimately politically controlled from creating inflation. With legal tender laws, governments cannot lose seigniorage, and there is, therefore, an asymmetric bias which gives a central bank the incentive to create inflation to reduce the real value of debt. This incentive may be quite strong in the case of the E.U. with a single currency, because of the level of debt and because, in such a diverse currency area, it is likely that there may be a country in recession at any given time, pushing for a reflation.

There are further problems which may make the inflation dangers of a politically controlled euro (even if it was only partially politically controlled) greater than those of a politically controlled sterling. Before 1979, when inflation was high, there existed exchange controls in the U.K. Those controls have been removed, and, under E.U. law, cannot be reimposed easily. Although all international currencies do not have equal status in the U.K., there is a degree of competition between

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alternative nationalised currencies. If inflation returned to 1970s levels, people could easily stop using sterling; the central bank would lose seigniorage. There is, therefore, some incentive to keep inflation low.

It is proposed by the author that the E.U. should be an exchange control area with a single currency. Thus, we have the possibility that a single currency could be issued by a central bank with good intentions (but over which there is political control), in an economy with high debt levels, within an exchange control area, and would be issued to investors who do not expect inflation (and who are, therefore, willing to lend at low interest rates). It would appear that this situation is similar to that which existed in post-war Britain. It is not a situation which should give actuaries confidence that there can be long-term price stability.

Even if free banking is not on the political agenda, there are institutional arrangements which could help give more confidence that price stability could be achieved. The euro could be tied to a commodity standard; making it the world's most reliable money! A New Zealand style central bank constitution could be developed. Thirdly, the E.U. could stop lobbying for a *single* currency. If the euro is one of many currencies circulating within the E.U. exchange control area, this provides an incentive for the euro to be a low inflation currency. If countries within the E.U. gave the euro, as well as their domestic currency, legal tender status, we could be close to the Bank of England's former hard ECU plan. The E.U. would have a strong incentive to create an inflation free euro, so that its use was preferred to national currencies and seigniorage benefits were increased.

Mr S. J. Green, F.I.A.: I wish to take issue with what I understood Mr Daykin to have said about the European unfunded pension liabilities and, particularly, those of Germany. This is a problem which has concerned our profession for at least forty years. In March 1963, C. M. O'Brien, who went on to become one of Mr Daykin's predecessors as President of the Institute, in a written submission on A.R.N. Ratcliff's paper 'Pension Schemes in the E.E.C. and U.K.' (*J.I.A.* **89**, 157-225), wrote:

> "Having regard to the current cost of these schemes on the Continent it is, to say the least, surprising that no one appears to have made any estimates of future costs. One suspects that, as in this country, political decisions have been made without any comprehension of what will ultimately be involved. The implications of a real cost of up to, perhaps, twice the present level seem likely to be very considerable not only in the economic field but also in their repercussions on the social and political scene. There would seem to be a major task for actuaries in Europe, as in this country, to 'make the voice of the future heard'."

The following year, A.R.N. Ratcliff, himself another of Mr Daykin's predecessors as President, wrote a note 'The Financial Outlook for the German State Pension Scheme' (*J.I.A.* **90**, 351-360), in which he said:

> "When the framework of the present German state pension scheme was proposed in 1956 the cost assumptions were seriously questioned by actuaries... [Subsequently] a Government paper... [was] published setting out the position of the scheme as at 1 January 1959 with revised estimates of the possible future development. ... the facts revealed by this publication show that the fears expressed by the German Actuarial Association in 1956 were fully justified, the future estimates are still not carried forward further than 1986, and German actuaries are convinced that thereafter the financial burden will deteriorate further. In order to emphasize the serious long-term implications, the April 1964 Volume of the Journal of the German Actuarial Association is devoted to a series of papers analysing the situation from all angles. This effort by German actuaries to 'make the voice of the future heard' has been widely publicized in Germany..."

At a break-out meeting on the French repartition system at the 1972 Oslo Congress, a number of French actuaries, courageously, drew attention to the demographic factors which would, in time, destroy that system; courageously — because, at that time, most were, ultimately, dependant on the French state for their employment.

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Ten years later attention was drawn in the Institute's debate on the Scott Report to that Committee's finding that the French and German state pension arrangements were already 'fraying at the edges'.

Despite this history of actuarial anxiety, Mr Daykin implies that these unfunded pension liabilities, when looked at in the light of the total economy, are not so serious as some of us would believe. He has indicated that they can be covered by adjustments to the benefits and to the pension ages. He is, probably, influenced by the success with which the U.K. has coped, in no small measure due to the skill of the Government Actuary himself, with the substantial deficit to which the unreconstructed State Earnings Related Pension Scheme was leading.

I think that he is too sanguine. It is always difficult to agree an economic scenario, but I do not think that any would dispute certain facts. The economies of France, Germany and most of our European partners have, for some time, been squeezed in order to meet the Maastricht convergence criteria and are running well below capacity. In May 1996 the International Monetary Fund published their calculations showing that both the French and German Governments would have to increase their taxes by 3.4% of GDP in order to meet their pension commitments (as compared to a figure of 0.1% for the U.K.). With the current low levels of output and employment, is there any realistic chance of France, Germany or Italy increasing their rates of taxation to meet their pension commitments in the next five or six years? Ironically, in each of those countries a lowering of taxation rather than an increase is currently desirable to stimulate growth and reduce unemployment. Any increase in taxation could only serve to reduce economic activity and increase unemployment still further.

Although, to a modest extent, this has already been tried in Germany, the alternatives suggested by Mr Daykin, which worked in the U.K., of increasing pension ages and reducing the benefits payable under the unfunded state pension arrangements, are also unrealistic. Firstly, because, unlike in the U.K., the state pension provision in France, Germany and Italy represents a very much higher proportion of the ultimate benefits receivable by the population, and the adjustments would have to be much more drastic than anything previously attempted elsewhere. Secondly, because, as those who watch television will have seen, trade union power and the ability to cause severe public disruption and civil unrest is so much greater in those countries. It is worth noting that, at the time of writing, the French lorry drivers have succeeded in bringing the economy of France almost to a standstill, in their demand for their pension age to be reduced from sixty to fifty-five.

A possible alternative might arise from the Continentals embracing Thatcherism more seriously. Privatisation on a larger scale would, undoubtedly, provide them, in the short term, with funds to reduce their budget deficits and to make provision for some of their unfunded pension liabilities, particularly if this was coupled, at the same time, with the privatisation of future pension arrangements. However, although all the Continental countries are proceeding with privatisations, it is unlikely that the pace will be sufficient to make a serious contribution to their pension deficits.

Indeed, politicians in these countries do not yet appear to appreciate that unfunded pension promises pose any problem. For example, in order to reduce their budget deficit towards the 3% convergence criterion, the French Government has recently bought the pension debt of France Telecom, and increased its unfunded pension promises by a further 0.5% of GDP. This solution is equally unrealistic so long as the E.U. and its member governments are devoted to state corporatism.

Historically, when all other solutions fail to work, there is always one to which politicians turn. If promises cannot be met they can be devalued. Whatever its constitution, the ECB must always act in the best interests of the majority. Inflation will serve the interests of Belgium, France, Germany, Italy and Spain. It will both help to stimulate their economies and to debase their unfunded pension promises. Those who argue that to sanction inflation would conflict with Article 105 and that an independent ECB would never condone inflation, might reflect on the stance taken by the 'independent' Bundesbank a few years ago, when the politicians, against that bank's advice, forced them to offer one D-Mark for each Ostmark, thereby ruining the economy of East Germany.

The U.K. does not need inflation either to stimulate its economy or to devalue its unfunded pension promises. Indeed, a further bout of inflation would do untold damage to the economy. Whatever the long-term advantages of joining the single currency, no such move should be undertaken until the Continentals have, satisfactorily, addressed their unfunded pension promises.

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Mr D. C. Mason, F.F.A.: I should like to touch on the likelihood of serious social unrest arising from EMU, and of itself causing the E.U. to break up. The author says, in ¶3.12, "I mention these problems, not because I think they should prevent a single currency being introduced, but because they need to be considered... . I think the disadvantages are as I have stated, but no more than that". These 'disadvantages' have been set out in the previous paragraphs of Section 3. They are the economic consequences of EMU with an expectation of certain areas in the E.U. suffering economic decline with falling living standards in real terms, a continual high level of unemployment and the prospect of mass migration with the unrest both to the people who have to move and to those on whom they wish to descend. The author is far too sanguine that these features can be readily handled, and that they are worth coping with. Again, we are lacking the quantitative analysis which should be supporting our debate.

Yes, such disruption can be avoided. The author talks about a need for greater regional aid. Alternatively, the local government will buy itself out by granting a substantial increase in unemployment and other social benefits. Whichever mechanism is used, these imbalances will have to be paid for if those who have created the E.U. wish it to survive. I think that it is too simple a view to say that the country concerned will have to resolve such a situation within its own budget. It appears to me, from first principles, that endorsing EMU will demand a commitment to a significant redistribution of the wealth contained within the contributing countries. What concerns me is that we have no scenario planning to demonstrate the scale of this phenomenon. My concern may be misplaced, but I cannot, at this time, go along with the author's optimism, and we, as a profession, should be doing better in providing understanding.

I am a member of the International Committee of the Pensions Board. The author touches, in ¶10.4.3, on unfunded state pension arrangements, and the potential instability which they might cause. My view is that it is changes in the expected levels of such benefits that could cause instability rather than the amounts themselves. The current promises can be brought into negotiations. Danger only arises, as with other social benefits, when promises are increased to buy off the consequences of an economic decline as a result of the E.U.

Monetary union has never been tackled on this scale before. The author says that it would be like any other federal arrangement. I disagree. All the unions quoted came from entities which were already using a single currency; primarily all had a single language; more importantly, although some power is devolved or left with the states, primarily power is in the centre. As I have said, it is this lack of an appropriate political infrastructure which makes me very concerned about EMU proceeding as intended at this time. We do the debate a disservice to suggest this is anything other than the most significant undertaking that the U.K. has contemplated since the Second World War. We need fuller research.

The author's written contribution appears after the discussion on this paper held by the Faculty of Actuaries on 17 March 1997.

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