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distribution system would need to be chosen which, above all, would encourage countries to impose the tax. If that system then produced the "pennies from heaven" for development cooperation which so many hope for, that could only be a welcome side-effect.

The primary impact of a Tobin tax has to be seen as the reduction of short-term international financial flows. That is the ultimate basis of the tax's redirective purpose and hence also the key argument for its implementation. However, the danger is that speculators could skip over the Tobin-tax hurdle which would then largely relinquish its redirective function. Though this hurdle-skipping could be guarded against by imposing a higher tax rate of several percent, that would lead to major allocative distortions. Furthermore, it would create such pronounced segmentation in the international capital market that the degree of monetary and fiscal

sovereignty individual countries gained ought to be regarded as a risk rather than an opportunity.⁶⁰

Although there is quite a good case overall for giving a moderate Tobin tax (or similarly structured instrument)⁶¹ a try, the actual likelihood of its being implemented on a worldwide basis is extremely small. Even if it were possible to overcome the political implementation problems, the Tobin tax could only possibly fulfil a fraction of the hopes that have been placed in it. All things considered, this is not a cure for all ills but a last-resort solution which, even in the mid-1970s, Tobin recommended "regretfully" in order, as he put it, "to throw some sand in the wheels of our excessively efficient international money markets".⁶²

⁶⁰ Cf. A. Schrader: Devisenumsatzsteuer..., op. cit., p. 23.

⁶¹ See footnote 9.

⁶² J. Tobin: A Proposal ..., op. cit., p. 154.

Matthias Sutter*

A Currency Board for European Monetary Union Outsiders

It is becoming clear that strict interpretation of the Maastricht criteria and adherence to the 1.1.1999 as the starting date for EMU will lead to a two-speed monetary union with insiders and outsiders. In this case, the author proposes the introduction of a currency board for outsiders in order to ensure a minimum of convergence before these countries join EMU as well as to confront the danger that outsiders may become faced with longer term obstacles to membership.

The implementation of the European Monetary Union (EMU) hangs in the balance. Given the fiscal problems which exist in several EU member states it is questionable whether there will be an EMU at all. Fiscal consolidation in France is of particular significance as an EMU without France appears politically unfeasible. Germany's insistence on a strict interpretation¹ of the convergence criteria laid down in the Maastricht Treaty on European Union (EUT) raises the question of when EMU will be possible.

On the one hand, watering down the convergence

criteria could lead to an unstable monetary union comprising economically heterogeneous EU states, a union which could bear the seeds of its own destruction at the very moment of its birth. However, dissolving the monetary union would involve enormous costs and would deal a severe blow to European integration. On the other hand, barring individual EU members from EMU or postponing the start of monetary union for an indefinite period harbours risks of political disintegration *per se* and

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¹ In the following this is taken to mean the application without exception of the limits of 3% of GDP to the budget deficit and of 60% of GDP to a country's national debt.

also fails to solve the problems of transition to EMU. If a two-speed monetary union with insiders and outsiders is created, there is a danger that those states which do not qualify for EMU from the start (the outsiders) will face considerable difficulties in joining at a later date.

In the following I propose the introduction of a currency board (CB) for outsiders, parallel to the introduction of EMU. This is to ensure a minimum of convergence – above all adherence to the deficit criterium – before outsiders join EMU, as well as to avoid the danger of outsiders being faced with longer term obstacles to membership.

This proposal implicitly incorporates the political desirability of achieving an EMU which includes as many states as possible as a preliminary step towards further-reaching political union, but also adherence to the aim of creating a stable EMU capable of operating successfully in the long-term. On the one hand, the introduction of a currency board is intended to provide a monetary bond between EMU and outsiders in order to ease membership at a later date. This should help keep further steps towards integration – involving the EU as a whole – open and viable. On the other hand, a CB should help substantiate a culture of (fiscal) stability.

Meeting the Convergence Criteria

The now familiar convergence criteria are laid down in Art. 109j (1) of the EUT as a prerequisite for entry to EMU. The (disputed) economic logic behind the convergence criteria relating to inflation rates and national budget discipline, which have been the subject of particularly intense public debate, can be explained as follows: in addition to preventing shifts in competitiveness caused by relative differences in inflation, bringing member states' inflation rates into line is considered to be an expression of converging economic policy preferences for price level stability as well as a convergence of the mechanisms behind this stability such as wage determination.² National budget discipline is intended to avoid the European Central Bank (ECB) being compelled by excessively

indebted individual EMU members to adopt an accommodating monetary policy with inflationary consequences, and to prevent other member states having to bail out heavily indebted states which have run into payment difficulties.³

In 1995, Luxembourg alone was able to satisfy all the convergence criteria, with all the other EU members failing to meet the fiscal criteria in particular. Even if the austerity programmes passed in several countries are successful, it is becoming clear that, if the convergence criteria are interpreted strictly and the 1.1.1999 starting date for EMU is adhered to, there is going to be a core monetary union which will have to include Germany and France. However, a core monetary union could impede and delay future entry for those member states covered by the special arrangement in Art. 109k EUT. This is because it is easier to satisfy the convergence criteria when within EMU than it is from outside:

□ Judging by the present degree of (non)-fulfilment of the convergence criteria, EU members will be excluded from participation in EMU primarily because of the state of their national budgets. Such exclusion could lead the financial markets to conclude that outsiders will be unable to consolidate their state budgets in the foreseeable future, thus resulting in increased risk premiums on national debt. This would further hamper not only convergence of long-term interest rates, but also the country's ability to satisfy the fiscal criteria.⁴

□ Satisfying the inflation criterium is also easier to achieve through EMU membership because within EMU there is a unified monetary policy for the entire monetary area, thus eliminating differences regarding inflationary preferences in economic policy which are a frequent source of international inflation rate differences. For those states which have still to reduce their inflation rates to the (relative) level demanded by the EUT there is the additional problem that, as a result of the necessary process of lowering inflation, real interest rates continue to rise until the credibility of the country's own monetary policy is reflected in a corresponding reduction of nominal interest rates. With rising real interest rates, the budgetary burden also increases as the country's accumulated debt is serviced.

² The EUT determines that an inflation rate alignment at any relative level is sufficient. An absolute upper limit would make more sense as far as ensuring price level stability is concerned.

³ Cf. M. Sutter: Public Indebtedness in a Monetary Union. Comments on the Necessity of its Disciplining and Sanctioning, in: CA-Quarterly 1/96, pp. 26-33. While Art. 104b EUT excludes any responsibility of the Community or the other member states for an individual member state's liabilities, this "no bail out" clause cannot be regarded as being very credible.

⁴ It is conceivable, though less probable, that the opposite effect could take place, i.e. that the financial markets in the excluded countries expect particular efforts to be undertaken towards the consolidation of their public sector budgets, and honour this with more favourable conditions for public debt.

□ Finally, it is to be expected that exclusion from EMU participation will be interpreted as a vote of no confidence in a country's economic policy in general and in the stability of its currency in particular, and that the financial markets could react with a wave of speculative attacks. Should subsequent devaluation pressure lead to actual devaluation, EMU's exchange rate criterion would be violated.⁵

Introduction of a Currency Board

The following supports the view that the introduction of a currency board in countries excluded from participation in the third stage of EMU would make it easier for these countries to satisfy the convergence criteria at a future date and so improve their chances of joining EMU later on. In contrast to the special arrangement included in the EUT, a solution of this kind promises both economic advantages, in that adjustment costs would be lower for the countries in question, as well as political advantages, in that the economic integration of the entire EU would be reinforced.

If at the start of 1998, on examination of the degree to which the convergence criteria have been satisfied, the starting date for EMU is fixed for 1999, and if at least Germany and France participate, then the remaining member states which are not yet included should be given the option of binding their monetary policy unilaterally to the core monetary union by introducing a currency board.⁶ The appropriate integration of this option into the EUT by law would be a task for the 1996 Maastricht II intergovernmental conference.

The decision to introduce a CB should be taken at the same time as determining the participants and the starting date of the third stage of EMU. This would improve planning certainty in the CB states and future EMU participants as well as increase the credibility of the monetary link created by the CB between the non-qualified states and EMU. However, it must be borne in mind that the introduction of a currency board is

intended to represent no more than a transitional solution for a period prior to eventual entry to EMU.⁷

Some countries may reject the introduction of a CB because they consider the related disadvantages to outweigh the advantages. Even if these countries remain linked to EMU within the framework of the European Monetary System (EMS) there is a danger of their being affected by the negative consequences of non-entry to EMU mentioned above. The essential difference between the EMS and a CB fixed exchange rate system is that discretionary monetary policy and central rate adjustments are, in principle, no longer possible within a CB system. However, as studies on the subject of an optimum currency area demonstrate, (adjustable) exchange rates between countries remain necessary if these countries are subject to asymmetrical shocks or have no other adjustment mechanisms at their disposal, such as factor mobility, price flexibility or a system of supranational income redistribution. Flexible exchange rates remain necessary for such states as long as they do not wish to "purchase" a fixed parity by means of real adjustments.

Characteristics of a Currency Board

Currency boards were first established in colonies in the second half of the 19th century.⁸ In the wake of newly-gained independence after World War II, most of the new states replaced these currency boards, which were regarded as instruments of colonisation, with independent central banks. This often led to public spending being financed by printing money or by central bank loans. While it was hoped that the introduction of an independent central bank would lead to increased growth, this was seldom the case, and inflation and mounting national debt resulted instead. Today, currency boards exist in Hong Kong and Singapore, Argentina, Estonia and Lithuania.

Currency boards are characterised by the fact that they exchange domestic currency for a specified foreign currency at any time and at a pre-determined and fixed rate of exchange. Thus it is a special kind of fixed exchange rate system,⁹ whereby parity and the

⁵ Cf. A. Radü: Fiskalpolitik in einer EG-Währungsunion. Eine Analyse der Interdependenzen, Kooperationsnotwendigkeiten und -möglichkeiten, Frankfurt 1994, p. 212.

⁶ D. Gros is also in favour of linking unilaterally to EMU the exchange rates of those countries which do not qualify for EMU membership from the start: D. Gros: Zur Sicherung der Währungsunion vor exzessiven Defiziten. Ein Reformvorschlag zum „Verfahren bei einem übermäßigen Defizit“, Geld und Währung Working Papers No. 43, Johann Wolfgang Goethe-Universität, Frankfurt am Main 1995. Here, however, the outsiders keep a central bank which is capable of conducting independent discretionary monetary policy. This is the crucial difference between Gros and the proposal advanced in this article.

⁷ So far, Art. 109k (2) EUT allows for a review of the degree to which the convergence criteria are satisfied in those member states covered by the special arrangement at least every two years or on application.

⁸ Cf. S. H. Hanke, L. Jonung and K. Schuler: Russian Currency and Finance. A Currency Board Approach to Reform, London 1993, p. 80 ff.

⁹ In accordance with considerations regarding optimum exchange rate regimes, such systems are ideal for small and diversified countries.

chosen reserve currency are usually established by constitutional law. The possibility of currency exchange is ensured by the fact that the CB holds foreign exchange reserves (usually in the form of yield-bringing securities) equal to at least the level of domestic currency in circulation.¹⁰

Usually, a CB holds reserve currency amounting to 105% to 110% of the volume of notes and coins in circulation in the non-banking sector, thus ensuring that the entire cash supply can be exchanged for reserve currency at all times. A less stringent and therefore not recommendable alternative is to cover not the entire initial cash supply with 100% reserve currency, but every banknote issued thereafter.¹¹ The reserves, as a rule, do not include bank deposits which must be cashed before they can be exchanged for foreign currency.¹²

A CB, then, like a central bank, has the task of issuing notes and coins corresponding to an equal influx of currency reserves. It does not, however, fulfil any other central bank functions. "A CB is thus a central bank which issues a currency whose exchange value it secures with the aid of a fixed exchange rate and a 100% redemption guarantee with a specified international currency and which, in so doing, has no freedom whatsoever as far as regulating these contractual components is concerned."¹³ The binding regulations involved are established by constitutional law and render discretionary monetary policy, such as can be pursued by an independent central bank, impossible.¹⁴ This rigid form of binding regulation can help a CB establish a high degree of credibility for its "own" monetary policy in a short space of time. This is why the introduction of a currency board is usually proposed for countries whose monetary policy inspires little confidence either at home or abroad – the binding regulations are used to import the credibility enjoyed by monetary policy in the chosen

reserve currency country.¹⁵ The credibility of a currency board is reinforced by its independent organisation and staff structure which ensures that the CB's monetary policy is free from governmental and other influences.

The reason for issuing a domestic currency at all, rather than using the anchor currency itself, is that by issuing its own currency a country retains its seigniorage which can be used to increase reserves by purchasing the anchor currency. Moreover, a country's own currency has symbolic value for the nation's identity.

In a currency board system the money supply – which is identical to the level of foreign reserves held by the currency board – varies directly with the balance on current account (proportionality) as long as the capital account is in balance. The CB cannot use discretionary measures to control the money supply. This is a frequent point of criticism.¹⁶

Limited Flexibility

Nevertheless, even a currency board system involves a certain amount of money supply flexibility. Firstly, the money supply can be increased by an influx of foreign capital, i.e. a capital account surplus. Secondly, (taking M1 as the volume in question) the money supply is not only dependent on notes and coins in circulation, which must be covered completely by CB reserves, but also on deposits held by non-banks with commercial banks. However, deposit money can also be created by the commercial banks within a currency board system. For this reason, a change in the balance of payments on current account need not necessarily be reflected in a proportional change in the money supply.¹⁷ For example, a contraction of cash reserves caused by a current account deficit can be offset by an increase in

¹⁰ In the case of a small country, this has little influence on the money supply in the reserve currency country. If, however, a (relatively) large country (like Italy, for example) were to introduce a CB, this could lead to noticeable and undesirable effects on the money supply in the reserve currency country. For this reason, a contract should be drawn up between EMU members and EU states wishing to introduce a CB ensuring tolerance of any consequences for monetary policy in the anchor currency countries.

¹¹ Cf. K. Osband and D. Villanueva: Independent Currency Authorities. in: IMF Staff Papers, Vol. 40 (1993), pp. 202-216, here p. 205.

¹² The Estonian CB, which also holds sufficient reserve currency to cover all bank deposits, is an exception.

¹³ W. Fuhrmann: Currency Board versus Zentralbank: Lösung für Übergangsperioden?, mimeo, Innsbruck 1995, p. 4.

¹⁴ This must be valid for the CB's "issue department" at least, which is strictly responsible for the exchange of domestic currency for the reserve currency. A (small) degree of scope could be granted to the CB's "banking department" which can use any (as a rule very modest) spare foreign reserves for purposes of discretionary monetary policy; cf. A. G. G. Bennett: The Operation of the Estonian Currency Board, in: IMF Staff Papers, Vol. 40 (1993), pp. 451-470, here p. 454.

¹⁵ Parallels can be drawn here regarding the way in which the other EMS participants gear their monetary policy to that of the German Bundesbank. In the EMS, too, the credibility of domestic monetary policy was and is reinforced by fixing the nominal exchange rate in relation to the DM. However, there is a significant difference between a CB system and the EMS in that national monetary policy within the EMS remains autonomous, a fact that has helped contribute to tensions in the EMS. In contrast, a CB is not subject to the problems of an "inconsistent quartet".

¹⁶ Of course new classicists will not subscribe to this criticism since they consider discretionary monetary policies to be ineffective.

the creation of deposit money from commercial banks' surplus reserves.¹⁸ Therefore, while a CB provides the monetary base, the commercial banks determine the money creation multiplier which can vary with changes in the relation between bank reserves and deposits and/or cash and deposits.¹⁹

Money supply flexibility is limited inasmuch as any aggregate money supply growth rate driven by the creation of money in the commercial bank sector which is greater than the growth rate of notes and coins in circulation cannot be maintained for any length of time because otherwise inflation rate differences and subsequent interest rate differences vis-à-vis the reserve currency country would develop which, if not quickly reduced, would force the abandonment of the fixed exchange rate. It is therefore important that the money creation multiplier be subject to small, short-term fluctuations only.²⁰

When considering further points of criticism²¹ against the introduction of a CB it is important to remember the (albeit limited) degree of money supply flexibility which exists even within a CB system.

It is argued that the rigidity of money supply fails to guarantee the necessary monetary conditions for economic growth and that a CB therefore impedes growth. It is also argued that in a growing economy – should this be the case despite the previous argument – with a constant balance of trade, the rigidity of money supply would lead to deflationary developments. Neither argument is entirely valid due to the ability of the commercial bank sector to create deposit currency. Appropriate domestic banking systems have been shown to be able to make a

considerable contribution to removing the inherent weaknesses of a CB system.²²

Nonetheless, flexible goods prices, wages and interest rates form a necessary part of a CB system, since monetary policy and exchange rate adjustments are not available as instruments to help cope with economic shocks. A CB system, however, supports a price and incomes policy which is geared to productivity increases, since domestic competitiveness would very soon be lost through the fixed exchange rate if it came to excessive wage demands or price rises. As long as there are few barriers to trade between the reserve currency country and the CB country, this effect is reinforced by the narrow goods arbitrage between the two countries. Monetary policy can assume no responsibility for employment policy. "An exchange rate link is ... incompatible with any form of wage fixing. Responsibility for employment policy is incumbent upon the bargaining partners."²³ These interrelations exercise a moderating effect on the rate of inflation and lead to converging inflation rates in the reserve currency country and the CB country.²⁴ From the national point of view, the goal of price stability can only be pursued indirectly by the appropriate choice of an anchor or reserve currency.

A more fundamental point of criticism is that the economic conditions required for the successful implementation of a CB system simply no longer exist.²⁵ Firstly, currency boards in the past were linked to the currency of a state with which the bulk of the CB country's foreign trade was conducted. If foreign trade is highly diversified, however, then the choice of anchor currency is much more difficult because of the possibility of recurring changes in relative prices. In the case in hand, as will be shown below, this particular objection is of no significance. Secondly, in the past, banks in the anchor currency country

¹⁷ Thus it was that during Ireland's currency board years of 1928-1979, the external claims of commercial banks provided a buffer which helped keep the domestic money supply relatively constant, independently of the balance on current account; cf. P. Honohan: *Currency Board or Central Bank? Lessons from the Irish Pound's Link with Sterling*, CEPR Discussion Paper No. 1040, London 1994, p.19. Given the strong international integration of the capital markets and the commercial banking business, this ought to be possible for a CB in the EU.

¹⁸ However, the buffer effect of commercial banking activities results in costs for the commercial banks of maintaining surplus reserves, which limits their ability to balance out the money supply; cf. M. Krüger: *Das Currency Board System*, in: *WISU*, Vol. 23 (1994), pp. 783-785, here p. 784. Nonetheless, in the case of a CB within the EU the creation of deposit money ought to provide a sufficient buffer against large fluctuations in money supply, since large-scale foreign trade shocks between EU members are unlikely given the strongly interwoven nature of international trade within the EU. Besides, in the case of countries that are integrated into the international financial markets, international capital movements take a more decisive influence on money supply than balances on current account.

¹⁹ Cf. C. M. Buch: *Das erste Jahr der Krone – Estlands Erfahrungen mit der Währungsreform*, in: *Weltwirtschaft* 1993, pp. 441-465, here p. 448.

²⁰ Cf. W. Fuhrmann and R. Richert: *Ein Währungssystem mit einem Currency Board*, in: *WISU*, Vol. 24 (1995), pp.1035-1039, here p. 1038; M. Willms: *Internationale Währungspolitik*, 2nd edition, Munich 1995, pp. 163 ff.

²¹ Cf. S. H. Hanke and K. Schuler: *Currency Boards for Eastern Europe*, The Heritage Lectures 355, Washington 1991, p.35 f.

²² Cf. A. Walters and S. H. Hanke: *Currency Boards*, in: *The New Palgrave Dictionary of Money and Finance*, London 1992, Vol. I, pp.558-561, here p.560f; A. J. Schwartz: *Currency Boards: Their Past, Present and Possible Future Role*, in: *Carnegie-Rochester Conference Series on Public Policy*, Vol. 39 (1993), pp.147-187, here p.170 ff.

²³ W. Fuhrmann and R. Richert, *op. cit.*, p. 1038.

²⁴ Cf. S. H. Hanke and K. Schuler: *Currency Boards for Eastern Europe*, *op. cit.*, p. 3.

²⁵ Cf. A. J. Schwartz, *op. cit.*, p. 183 f.

assumed in the extreme case the role of lender of last resort. Criticism regarding the absence of a lender of last resort is based on the consideration that, should a crisis in the commercial banking sector lead to a run on the banks, i.e. demand for cash grow very fast, then a currency board would be unable to stop this run because it does not guarantee the exchange of deposits for cash. However, this problem can be solved not only by having a lender of last resort, but also by means of an appropriate deposit security system, sufficient commercial bank cash reserves, and an inter-bank money market to balance out available liquidity.²⁶

As demonstrated above, a CB quickly creates a high degree of credibility in a country's own, bound, monetary policy and secures a fixed exchange rate with a chosen anchor currency. Since softening the effects of economic shocks by means of discretionary monetary policy is not possible, these shocks have to be offset by means of flexible goods and factor prices and by the (limited) degree of money supply flexibility which results from the ability of the commercial banks to create deposit money.

Exchange Rate Stability

Any country which decides to introduce a currency board is faced with the question of which anchor currency to select. This decision should always take the country's foreign trade structure into account. As far as efforts to bind non-EMU participants to EMU are concerned, there are two possibilities for stage 3a of EMU: the anchor or reserve currency selected can either be the currency of a single EMU participant or alternatively a basket of currencies from all the participating states. The choice of a single reserve currency may appear more appropriate as transaction costs would be lower. The basket solution, moreover, involves certain problems as far as the holding of foreign reserves and the ability to exchange domestic notes and coins for the reserve basket currency are concerned.²⁷ However, the choice of a basket currency as a reserve currency seems to have advantages for two reasons. Firstly, by choosing a basket currency as a reserve currency the effects on money supply involved in the introduction of a CB are spread evenly across several reserve currency countries which, as far as money value stability within

EMU is concerned, is preferable to the effects on money supply if a single currency is chosen. Secondly, a basket currency reflects foreign trade structures more accurately.

It would be judicious to determine parity by looking to the prevailing market rates for EMU participant currencies whose mutual conversion ratio will then be irrevocably fixed. If a CB country is not yet ready for entry to EMU while the qualified participants are undergoing the transition phase to stage 3b of EMU with its single currency, the "euro", I propose a simultaneous currency reform in the sense that the CB country's currency be revalued such that there is 1:1 parity with the new EMU currency. This would ensure that transition to EMU at a later date can proceed as smoothly as possible. Currency reform, too, should be regarded as an option, and might be implemented only in countries which are likely to achieve EMU entry in the near future. For these countries, the benefits of a speedy later entry to EMU are most likely to outweigh the pre-membership costs of currency reform.

The credibility of the anchor currency link is determined on the one hand by the chosen exchange rate. No great problems should arise here once the establishment of an exchange rate based on current market rates is proposed. Political and economic considerations, on the other hand, have a considerable role to play. The introduction of a currency board, the chosen anchor currency and the corresponding exchange rate should all be established by constitutional law in order to make the political costs of altering or removing the CB system as great as possible. This would be more likely to protect a CB from alteration or even abolition resulting from short-term political and economic calculations than the introduction of a CB by passing a simple law. The more difficult it is to alter a CB, and the stronger the independence of CB staff, the more trust the financial markets will have in its ability to function adequately. If the financial markets consider the CB to be credible, there will probably be no speculative attacks on the non-EMU currency. "Since speculators have no incentive to test the resolve of the monetary authorities, speculative attacks should be absent."²⁹ Thus the CB currency's parity with EMU, which is fixed by definition, is secured and the entry criterion of a stable exchange rate is fulfilled.

²⁶ Furthermore, due to the advanced level of integration among the financial markets and the high degree of institutional integration within EMU, establishing a currency board in a prospective EMU member country could lead the markets to regard the European Central Bank (ECB) as a lender of last resort.

²⁷ Cf. K. Osband and D. Villanueva, *op. cit.*, p. 204.

²⁸ B. Eichengreen: *International Monetary Arrangements for the 21st Century*, Washington 1994, p. 73.

Inflation and Interest Rates

The inflation rate in a CB country must be roughly equal to that in the reserve currency country as a CB system cannot otherwise be maintained in the longer term. If the CB abides by the binding regulations, and if the creation of deposit money can be influenced by means of variable minimum reserve requirements which correspond to the growth rate of notes and coins in circulation, then lasting convergence between the inflation rates in the CB country and EMU can be expected. In the case of approximately equal inflation rates, nominal interest rates are set without any premium for inflation differences. Moreover, if the CB enjoys such a high degree of credibility that the markets do not anticipate a possible devaluation, then they reduce their devaluation premiums which in turn leads to the interest rates between the two countries reaching roughly the same level (taking taxation differences into consideration).²⁹ A further convergence criterion for entry to EMU would thus be satisfied.

Public Spending

Considering the problems most EU states have in consolidating their budgets and satisfying the fiscal convergence criteria, it is interesting to note in this context that a CB can in fact help to achieve fiscal discipline in that once a CB is installed it is no longer possible for the State (and public sector companies and institutions) to run up debts by printing money or taking loans from the central bank, since for every domestic banknote issued an equivalent amount must be held in the anchor currency.

A CB helps tighten the state budget restriction by ruling out state debt with the central bank on the one hand and by precluding the reduction of real state debt through surprise inflation on the other. "It also precludes the surprise devaluation of existing fiscal claims on the government ... (and) precludes recourse to the inflation tax as a discretionary taxing instrument."³⁰

Deficit financing of state expenditures in a CB system is thus only possible from domestic savings and foreign loans. However, heavy borrowing in the domestic commercial bank sector leads to private

investment being crowded out completely. International creditworthiness, in turn, is crucially dependent upon the fiscal policy of the loan-seeking state. This means that while a CB system does not necessarily preclude a budget deficit, the chances of one developing are severely limited: "A balanced budget is not a necessary corollary of a currency board, but a government must realize that any borrowing it undertakes will crowd out borrowing by the private sector, except insofar as it obtains additional foreign finance."³¹ Recognition of this context means that a CB system also places severe limits on fiscal policy autonomy. Fixing the exchange rate thus results in this field of economic policy too becoming increasingly endogenous.

As well as having a disciplinary effect, the introduction of a CB also eases the strain on the national budget. Compared to a situation in which a central bank exercises independent monetary policy (as in the EMS), a fixed exchange rate resulting from the installation of a currency board leads to lower interest rates for public borrowing, since the risk of devaluation between EMU member currencies and the CB country's currency is ideally reduced to zero, and converging inflation rates mean that a further source of interest rate differences in relation to EMU currencies is eliminated. This results in interest savings vis-à-vis those countries which neither participate in EMU nor are bound to EMU via a CB.

Possible interest savings are particularly significant for countries with currently high levels of national

Table 1
Interest Burden in Selected EU
Member States for 1995

	Net borrowing in % of GDP ¹	Yield on 10-year state securities in %	Nominal savings in % of GDP given German yield	Inflation in %	Yield spread to Germany in real terms	Real savings in % of GDP given real German yield
Germany	49.0	6.19		1.5		
Belgium	128.4	6.62	0.55	1.8	0.13	0.17
Italy	109.2	10.50	4.71	5.0	0.81	0.88
Sweden ²	26.8	8.66	0.66	2.0	1.97	0.53
Spain	50.1	9.72	1.77	3.9	1.13	0.57

¹ The figures given are OECD estimates for 1995. Net borrowing is the relevant position for the interest burden if claims in the public sector are subject to the same rates of interest as liabilities.

² In 1994, gross borrowing in Sweden was 79.5% of GDP; Sweden has the largest gap between gross and net borrowing in the EU.

Sources: Net borrowing in % of GDP: OECD Economic Outlook No. 58, Paris, December 1995; Inflation rates: The Economist, 9.3.1996; author's own calculations.

²⁹ Cf. S. H. Hanke and K. Schuler: Financial Reform and Economic Development: The Currency Board System for Eastern Europe. in: P. J. Boettke (ed.): The Collapse of Development Planning, New York 1994, pp. 310-326, here p. 316.

³⁰ K. Osband and D. Villanueva, op. cit., p. 208.

³¹ A. G. G. Bennett, op. cit., p. 456.

debt. However, possible savings calculated in this context are to be treated with caution. Gros, for example, calculates annual savings of up to 4% of GDP.³² He draws attention to the fact that his calculations are merely intended to give an idea of the scale of budget relief effects, and that both the average structure of payment deadlines for the public debt and the yields on the public debt corresponding to these deadlines should be considered when making more precise calculations. Yet even if this methodical problem is ignored in the following calculation and March 1996 data are used instead of the corresponding April 1995 figures used by Gros, the results, although still positive and therefore beneficial, are considerably lower, as Table 1 testifies.

Possible annual savings for Belgium, for example, are just 0.17% and for Italy 0.88% of real GDP. Even though this sounds less spectacular than 4%, it can still make a contribution to fulfilling the deficit criterion.³³ However, the results implicitly assume that interest and inflation rates in EMU will be no higher than in Germany today. This assumption is only plausible if EMU really does encompass only convergent³⁴ economies which are committed to price stability, a necessary, though not sufficient, condition for which is the observance of the EUT's inflation and deficit criteria. As far as the countries covered by the special arrangement in Art. 109k EUT are concerned, observing these criteria is easier if a CB is introduced than if their monetary policy is not linked to EMU in such a stringent manner.

Entry to EMU

Introduction of a CB can, as demonstrated above, help satisfy the Maastricht convergence criteria more quickly and easily than would otherwise be the case. Moreover, only minimal institutional changes and economic adjustments are necessary when moving from a CB system to the monetary union because the decisive adjustments are made on introduction of the CB.

³² Cf. D. Gros, *op. cit.*

³³ However, Belgium and Italy will not become members of EMU as long as the debt level of 60% of GDP exists as a hard and fast condition for entry to EMU; cf. *Stabilitätspakt für Europa – Finanzpolitik in der dritten Stufe der WWU*, Press release of the Federal Finance Ministry, Bonn, 10th November 1995. In this case, the period of transition, which can, in principle, be shortened by means of a CB, would become a permanent condition for these two EU member states. For this reason I personally consider the debt criterion to be of lesser importance. Stabilising the level of national debt over a period of several years should be accepted as being sufficient for satisfying the debt criterion.

Thus, given the then existing exchange rate relationship vis-à-vis a single EMU currency or a basket of currencies participating in EMU, the domestic currency can be recognised in stage 3a as a further EMU-associated currency with irreversibly fixed exchange rates or can be substituted by EMU currency in stage 3b on a 1:1 basis. In the case of entry to EMU in stage 3b, the CB even has sufficient reserves at its disposal to be able to swap the entire supply of notes and coins in the non-commercial-banking sector for the "euro" currency. At the same time as moving into EMU, a previously non-participating country can take up its rightful seat at the common European Central Bank and so participate in shaping common monetary policy. As far as the ECB's monetary policy is concerned, entry would require no adjustments at all since the central bank in the reserve currency country determines the supply of reserves – even in the CB country – anyway.³⁵

Concluding Remarks

Compared to the special arrangement included in Art. 109k EUT of the Maastricht Treaty, the introduction of a currency board in those EU states which are unable to qualify for the third stage of EMU from the start offers the following advantages:

- ☐ Implementing binding regulations to link a currency board to EMU in terms of monetary policy makes it easier to satisfy the convergence criteria which must be fulfilled in order to achieve entry to EMU. "Those countries which introduce such a system ... simultaneously lay the foundation stone for the development of a long-term culture of stability."³⁶ If, on the other hand, the EUT special arrangement is applied, there is the danger that barriers to entry for non-EMU participating states could become tougher.
- ☐ Appropriate currency board design – in particular a simultaneous currency reform with the introduction of a single currency in EMU (stage 3b) – makes quick, smooth entry possible at a later date.
- ☐ Easing later entry to EMU also advances the process of political integration in Europe by promoting the economic integration on which it is based.

³⁴ "Convergent" here means not only the nominal EUT criteria, but also real criteria such as flexibility of labour supply, mobility of production factors or shock symmetry.

³⁵ Cf. S.H. Hanke and K. Schuler: *Currency Boards for Eastern Europe*, *op. cit.*, p. 7.

³⁶ M. Williams, *op. cit.*, p. 165.