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Monetary Control in Open Economies: National versus Global Monetarism

by Gerhard Maier, Hamburg*

For about a decade the central banks of the leading Western industrial nations have set annual money supply targets.¹ Despite the common monetarist tone of their strategies, each central bank uses its own definition of the money supply relating solely to its national territory (national monetarism), thereby laying itself open to criticism from those who, like Professor Ronald McKinnon, hold that nationally oriented money supply control has had its day and instead advocate management of the world money supply (global monetarism).² The following article tests the arguments of the proponents of an international quantity theory and examines whether domestically oriented money supply management is really out of tune with the times.

The controversy about national versus global monetarism is being fuelled primarily by the growing interdependence of national economies, which inevitably entails an increase in international financial transactions and hence an internationalisation of the financial markets and the banking sector.³ Many observers conclude from this that there must be a very close link between the world money supply and world inflation.

This view would be immediately comprehensible if there were a system of immutably fixed exchange rates, because then it would be neither practicable nor logical to control a money supply aggregate defined in strictly national terms, not only because of the obligation to intervene in the foreign exchange markets, which represents an important and involuntary source of money creation,⁴ but also because of the exchange rate and conversion guarantees provided by the central banks, which ties the currencies concerned so closely together that they can be regarded as almost perfect substitutes. However, it is pointless today to talk of immutably fixed exchange rates; on the contrary, the collapse of the Bretton Woods system in 1973 and its replacement by a system of more or less flexible exchange rates gave rise to the expectation that monetary policy would henceforth be free from external influences.

That view does not sound implausible. In a system of flexible exchange rates, sales and purchases of foreign exchange by the central banks are no longer necessary, so that the money supply is determined entirely by domestic factors. This freedom from external

constraints diminishes only if the central banks intervene in spite of flexible exchange rates, in other words if there is "managed" or "dirty" floating.⁵

However, the critics of national management of the money supply are not basically concerned whether floating is "clean" or "dirty"; they consider the autonomy of the central bank in an open economy to be endangered even if exchange rates are completely flexible. They blame this on three factors:

□ international currency substitution;

¹ Cf. Gerhard Maier: Varianten der Geldmengensteuerung international, in: *Die Bank*, No. 6, June 1984, pp. 268-273.

² Cf. Ronald I. McKinnon: An International Standard for Monetary Stabilization, Institute for International Economics, Policy Analysis in International Economics 8, Cambridge, Mass., London, March 1984; Ronald I. McKinnon: Currency Substitution and Instability in the World Dollar Standard, in: *The American Economic Review*, Vol. 72, No. 3, 1982, pp. 320-333; see also R. M. Pecchioli: The Internationalisation of Banking. The Policy Issues. Trends in Banking Structure and Regulation in OECD Countries, Organisation for Economic Co-operation and Development, Paris 1983; William H. Day, H. Robert Heller: The World Money Supply: Concept and Measurement, in: *Weltwirtschaftliches Archiv*, Vol. 113, No. 4, 1977, pp. 693-718.

³ See, for example, Bank for International Settlements: Fifty-fourth Annual Report, 1st April 1983 to 31st March 1984, Basle, 18th June 1984, pp. 88 ff.; Rudiger Dornbusch: Flexible Exchange Rates and Interdependence, in: *International Monetary Fund, Staff Papers*, Vol. 30, No. 1, 1983, pp. 3-30; Michael Mussa: Macroeconomic Interdependence and the Exchange Rate Regime, in: Rudiger Dornbusch, Jacob A. Frenkel (eds.): *International Economic Policy, Theory and Evidence*, Baltimore, London 1979, pp. 160-208; R. M. Pecchioli, op. cit.

⁴ With regard to the monetary role of exchange market intervention, see for example Hans-Joachim Jarchow: Devisenmarktinterventionen und Liquiditätswirkungen, in: *Außenwirtschaft*, Vol. 39, No. 4, pp. 299-321; Gerhard Maier: Sollen die Notenbanken am Devisenmarkt intervenieren? in: *Die Bank*, No. 8, August 1983, pp. 360-366.

⁵ Cf. Leroy O. Loney: More Flexible Exchange Rates: Have They Insulated National Monetary Policies? in: *Federal Reserve Bank of Dallas, Voice*, February 1981, p. 7. For a comparison of the various ways of influencing the foreign exchange market, see Beate Rezat: Die kurz- und langfristige währungspolitische Effizienz von Regeln für Devisenmarktinterventionen, Berlin 1984.

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- the existence of the Euro-currency markets;
- the financial investments and reserves of multinational enterprises and certain central banks (multiple reserve currency system).

The World Money Supply Hypothesis

The first assumption that there is a close substitution relationship between the media of exchange of the major industrialised countries, in other words the currency substitution hypothesis, is a cornerstone in McKinnon's world money supply theory. His concept is oriented towards a "weighted world average money growth", in which the weights are based on countries' gross national product for 1970 (see Table 1).⁶ The central idea in McKinnon's theory can be illustrated in the following equation:

$$d\%M1^W = .45d\%M1^{US} + .35d\%M1^G + .20d\%M1^J.$$

If control of the world money supply is confined to the currencies of the USA, Japan and the Federal Republic of Germany, as McKinnon suggests, then $d\%$

expresses the growth rate, $M1^W$ represents the world money supply, $M1^{US}$, $M1^G$ and $M1^J$ the M1 aggregates (cash in circulation and sight deposits) in the USA, the Federal Republic of Germany and Japan and .45 the (fictitious) relative weight of the USA, measured in terms of the relative size of the US gross national product. According to McKinnon, the rate of growth in the world money supply is therefore the sum of the growth rates of the money supply in selected countries, weighted according to their GNP.

Reference to a world money supply makes sense only if the world aggregate as well as national money supplies actually finances economic activity in individual nations. However, with regard to his collection of money supply aggregates McKinnon acknowledges that "which of these convertible currencies are the strongest substitutes for one another, and which should enter with

⁶ Cf. Ronald I. McKinnon: Currency Substitution etc., op. cit., p. 321; Ronald I. McKinnon: A Program for International Monetary Stability, Center for Economic Policy Research, Discussion Paper No. 3, pp. 9 ff.; Ronald I. McKinnon: An International Standard etc., op. cit., p. 89.

Table 1
Rates of Growth in the World Money Supply, according to McKinnon:
Ten Industrialised Countries
(percentage changes in year-end figures)

	USA	Canada	Japan	United Kingdom	Federal Republic of Germany	France	Italy	Netherlands	Belgium	Switzerland	Weighted world average
GNP weights (1970)	(.5174)	(.0432)	(.1042)	(.0648)	(.0989)	(.0804)	(.0491)	(.0167)	(.0137)	(.0115)	
1960	0.6	4.0	36.6	0.4	7.2	14.1	13.6	6.7	1.9	5.0	7.03
1961	3.3	12.7	18.4	2.0	14.5	15.5	16.0	7.7	7.7	15.3	8.18
1962	2.5	4.3	16.6	-5.0	6.8	18.1	17.6	7.5	7.2	11.3	6.23
1963	3.2	7.3	34.6	14.5	7.2	14.5	13.6	9.3	9.6	7.3	9.43
1964	4.7	9.4	13.0	3.2	8.5	8.3	7.5	8.0	6.6	6.5	6.57
1965	4.8	14.3	18.2	3.9	7.7	9.4	16.4	10.0	7.1	3.8	7.88
1966	2.4	7.3	13.9	0.0	1.9	7.8	13.3	6.8	6.6	3.8	4.72
1967	7.5	4.0	14.1	7.6	10.0	4.8	15.7	6.2	3.2	6.7	8.38
1968	8.1	0.6	13.3	3.9	7.6	8.0	11.9	11.4	7.2	11.9	8.26
1969	3.3	-4.2	20.6	0.0	5.3	-2.5	15.9	8.1	-6.0	11.0	4.96
1970	4.3	1.8	16.8	9.3	8.6	11.4	27.4	11.8	7.0	11.0	8.19
1971	6.5	13.1	29.7	15.2	12.8	11.8	19.0	15.0	11.1	18.4	11.77
1972	9.1	12.2	24.7	14.0	14.1	14.9	17.3	17.6	15.2	5.7	12.73
1973	5.7	8.8	16.8	5.1	1.7	9.8	24.3	0.0	7.5	0.0	7.65
1974	3.0	1.5	11.5	10.8	10.7	15.2	9.4	12.2	6.2	-3.3	6.51
1975	5.5	19.0	11.1	11.0	14.3	12.6	13.4	19.7	15.7	4.4	9.22
1976	5.9	1.5	12.5	11.3	3.3	7.5	18.8	8.2	7.0	10.5	7.35
1977	8.2	10.4	8.2	21.5	12.0	9.3	21.4	13.2	8.3	0.6	10.27
1978	8.2	7.0	13.4	16.4	14.2	11.1	26.6	4.1	5.9	19.7	10.98
1979	8.0	1.4	3.0	9.1	3.2	11.9	23.7	2.8	2.5	-1.3	7.60
1980	5.3	10.1	-2.0	3.9	4.0	6.4	12.9	6.0	0.2	-0.5	4.86
1981	4.1	-2.8	10.0	12.0	-1.6	15.9	4.5	-2.4	2.2	12.7	5.30

Data: M1 (non-interest-bearing), International Monetary Fund: International Financial Statistics, Yearbook 1981/82.

Source: Ronald I. McKinnon: A Program for International Monetary Stability, Center for Economic Policy Research, Discussion Paper No. 3, January 1983, p. 10.

the heaviest weights in any index of world money, is not addressed ... no econometric attempt is made to distinguish the international moneyness of, say, the Italian lira from that of the German mark".⁷ It is therefore necessary to test the validity of the suspicion expressed by McKinnon and many others that international currency substitution (CS) is now occurring.⁸

Currency Substitution

The observation that many companies and households hold their cash balances not only in domestic currency but also in foreign currencies is often advanced as an indication of the existence of currency substitution. The adherents to the CS hypothesis therefore also regard money as an internationally mobile factor. For example, Niehans surmises that if the liquid funds of firms, banks and households are diversified among several currencies, then the liquidity of a single economy, such as that of Switzerland, depends not only on the supply of its own currency but also the world supply of other means of payment such as dollars, marks and pounds sterling.⁹

If the CS school is right, there is a danger that domestic currency will be used abroad and foreign currency at home. If that is the case, domestic money will be withdrawn from the domestic economy and can therefore no longer have any behavioural significance there, while domestic economic activity will be partly financed by foreign money. Furthermore, a change in the monetary policy of a particular country will induce an adjustment in the currency structure of international cash balances, which will at least partly offset the change in policy. Hence, in extreme cases, an expansionary monetary policy in a particular country merely inflates the world money supply without generating any specific monetary stimulus in the country concerned.

⁷ Ronald I. McKinnon: *Currency Substitution etc.*, op. cit., p. 321.

⁸ Literature on the CS hypothesis has snowballed in recent years. To name only a selection, see Bank of England: *External Flows and Broad Money*, in: *Quarterly Bulletin*, Vol. 23, No. 4, December 1983, pp. 525-529; Peter Böhm: *Zur Theorie der Währungssubstitution. Eine mikro- und makroökonomische Modellanalyse unter besonderer Berücksichtigung der stabilisierungspolitischen Implikationen*, Diessenhofen 1984; Bruce Brittain: *International Currency Substitution and the Apparent Instability of Velocity in Some Western European Economies and in the United States*, in: *Journal of Money, Credit and Banking*, Vol. 13, No. 2, May 1981, pp. 135-155; Ronald I. McKinnon, Kong-Yam Tan: *Currency Substitution and Instability in the World Dollar Standard: Reply*, in: *The American Economic Review*, Vol. 73, No. 3, June 1983, pp. 474-476; Franco Spinielli: *Currency Substitution, Flexible Exchange Rates, and the Case for International Monetary Cooperation, Discussion of a Recent Proposal*, in: *IMF Staff Papers*, Vol. 30, No. 4, December 1983, pp. 755-783.

⁹ Cf. Jürg Niehans: *Stabilisierung in einer offenen Volkswirtschaft*, in: Hans K. Schneider et al. (eds.): *Stabilisierungspolitik in der Marktwirtschaft*, Berlin 1976, pp. 651-671.

It is particularly noteworthy that McKinnon and many others see CS as a phenomenon of flexible exchange rates. They argue that since exchange risks are now high, economic agents who wish to avoid risks no longer concentrate their cash balances in a single currency but spread them over several.¹⁰ As a corollary, the money supply has been internationalised not despite, but because of, the flexibility of exchange rates.

These hypotheses appear fairly plausible at first sight, but upon closer inspection they can be seen to have serious deficiencies. The crux of the matter is the assumed currency indifference. In contrast to the world described by the CS school, firms and individuals do in reality have marked currency preferences, because the high exchange rate risk has precisely the opposite effect to that described by the CS school. Considerable information and transaction costs arise if liquid balances are *not* held in the currency in which payments are due. Hence, economic entities that shun risks and are under no cost illusion prefer to hold their cash balances in precisely the currency in which they have payment commitments; as a rule, they therefore have a marked preference for domestic currency.¹¹

On the other hand, holding balances in foreign currency is efficient if payments must be made in these currencies. In many cases, the international composition of cash balances can be explained simply by the fact that payment commitments are incurred simultaneously in several currencies. This is true in the case of multinational enterprises, for example. By definition, the multis produce in several countries, so that they incur liabilities such as wages, the cost of inputs, taxes, etc., which can be met only in the relevant national currency. If such an enterprise concentrated its cash balances in a single currency it would have to bear substantial costs whenever currency was converted to make payments. Precisely because national currencies are not substitutes for one another, it makes sense for the structure of cash balances to be diversified internationally to match transactions in the various production locations.

This situation receives scant attention in CS literature, because most authors do not differentiate sufficiently, if at all, between the function of money as a medium of

¹⁰ Cf. Arthur B. Laffer, Marc A. Miles: *International Economics in an Integrated World*, Glenville 1982, p. 368; Ronald I. McKinnon: *A Program etc.*, op. cit., p. 6; Ronald I. McKinnon, Kong-Yam Tan, op. cit.; Jürg Niehans, op. cit.

¹¹ Cf. James Tobin: *The State of Exchange Rate Theory. Some Skeptical Observations*, in: Richard Cooper et al. (eds.): *The International Monetary System and Flexible Exchange Rates*, Cambridge, Mass., 1982, pp. 118 ff.

exchange and its function as a store of value. In fact, a multitude of media can serve as a store of value, such as bonds, shares, gold, etc., but money is the only one that can be used directly for payment purposes. As a medium of exchange, it serves to reduce information and transaction costs that would arise in a pure exchange economy.¹² For that reason, only those media that are associated with particularly low information and transaction costs are acceptable as money. Foreign currencies fail to meet this criterion when it comes to financing domestic transactions. Unlike domestic currency, they give rise to additional costs and from the point of view of risk are no different from other assets whose value in domestic currency is also uncertain, such as shares, gold, etc. There is therefore no currency substitution that could render national monetary policy ineffectual.¹³

Nor does the fact that the US dollar is normally used as the means of payment (and accounting unit) for international transactions in oil and other raw materials jeopardise monetary control in other countries.¹⁴ As the raw materials are always ultimately sold for domestic payments media, the dollar merely finances trade between nations, but not domestic economic activity in countries other than the USA (and possibly Israel, whose domestic currency, the shekel, is being increasingly displaced by the dollar owing to rampant inflation). Other currencies are not even used as international payments media.¹⁵

The lessons are of particular interest if one examines the monetary significance of the Euro-currency markets, which are sometimes counted as part of the world money supply.

The Euro-currency Markets

The Euro-currency markets should not be visualised as a closed system. Instead, there are various sub-markets, such as the Euro-dollar market, the Euro-DM market, the Euro-franc market, which must be differentiated strictly for purposes of analysis.¹⁶ The demarcation lines between the various currencies are

mainly a consequence of the exchange risk, which induces the banks to grant loans exclusively in the currency in which they are refinanced.

The assessment of the monetary significance of the Euro-currency market depends primarily on whether Euro-currency deposits are actually money, as is often assumed. Doubts arise in this respect if one bears in mind that Euro-currency balances cannot be used directly for domestic payments but must first be converted into payments media, in other words into dollar balances at banks in the USA or DM sight balances with banks in Germany.¹⁷ Hence, there would be absolutely no justification for including Euro-currency deposits in the M1 money supply.

Another question, however, is whether Euro-currency deposits should be regarded as quasi-money, which is normally included in M2 alongside M1 and comprises deposits that cannot be used directly for payments purposes but can be converted into payments media at relatively little cost and usually serve as transactions balances. The answer hinges upon deposit holders' perception of the function of Euro-currency deposits, in other words the purpose for which they ultimately hold them. It must therefore be clarified whether Euro-currency deposits serve predominantly as transaction balances or are regarded mainly as financial investments.

The very short periods of notice on many Euro-currency deposits would seem to suggest that the transaction motive is predominant. However, the period of notice shows only the minimum term of the deposits, not the maximum term, since the deposit can be rolled over repeatedly. Factors militating against the transaction motive include the costs that arise if Euro-currency deposits are transferred to the domestic banking market and the fact that as a rule notice cannot be given before the due date.¹⁸ More important, however, is the attractive rate of interest that can be obtained on the Euro-currency market. As Euro-

¹² Cf. Karl Brunner, Allan H. Meltzer: *The Uses of Money: Money in the Theory of an Exchange Economy*, in: *The American Economic Review*, Vol. 61, No. 5, December 1971, pp. 784-805.

¹³ Cf. Gerhard Maier: *Die inlandswirksame Geldmenge in einer interdependenten Welt. Eine Untersuchung zur Abgrenzung der Geldmenge in einer offenen Volkswirtschaft – durchgeführt am Beispiel der Bundesrepublik Deutschland*, mimeo, 1985, pp. 99 ff.

¹⁴ With regard to the international function of the US dollar see Peter B. Kenen: *The Role of the Dollar as an International Currency*, Group of Thirty, Occasional Papers No. 13, New York 1983.

¹⁵ On the problems of international money, see for example Gerhard Maier: *Geld aus der Retorte*, in: *Wirtschaftswoche*, No. 44, 28th October 1983, pp. 138-145.

¹⁶ The Euro-DM market has only recently become the subject of explicit attention. See Deutsche Bundesbank: *Der Euro-DM-Markt*, in: *Monatsberichte*, Vol. 35, No. 1, January 1983, pp. 13-20; Wolfgang Gerhardt: *Der Euro-DM-Markt. Marktteilnehmer, Zinsbildung und geldpolitische Bedeutung*, Hamburg 1984; Gerhard Maier: *Bundesbankpolitik und Euro-DM-Markt*, in: *Hamburger Jahrbuch für Wirtschafts- und Gesellschaftspolitik*, Vol. 29, Tübingen 1984, pp. 173-189; Hermann Remseger: *Geldpolitik und Bankenwettbewerb*, in: *Die Bank*, No. 12, December 1984, p. 567 f.

¹⁷ Cf. Deutsche Bundesbank, op. cit., p. 30; Wolfgang Gerhardt, op. cit., pp. 297 ff.; Helmut Mayer: *Multiplier Effects and Credit Creation in the Euro-dollar Market*, in: *Banca Nazionale del Lavoro*, Quarterly Review, Vol. 24, 1971, pp. 233-262.

¹⁸ See Frohmund Grünärl: *Der Euro-Dollarmarkt. Die Bestimmungsfaktoren des Wachstums des Euro-Dollarmarktes (EDM): Geldschöpfung oder Kreditvermittlung*, in: *Wirtschaftswissenschaftliches Studium*, Vol. 12, No. 1, January 1983, p. 4.

currency accounts offer a relatively high and safe return, there is much to be said for concluding that they ultimately serve as financial investments, more akin functionally to the capital market than to money.

However, if Euro-currency deposits are finally used to make payments, the account-holding bank must instruct a bank in the country concerned to make sight deposits available. The same applies if a Euro-bank grants a loan, as lending in the Euro-currency market is effected solely by transferring domestic means of exchange, in other words sight deposits at a domestic bank, to the borrower.¹⁹ It should be borne in mind here that as a rule the Euro-bank is the subsidiary or branch of a domestic bank, and hence virtually a detached loans department.²⁰ It is therefore economically, if not always legally, identical with the parent bank, so that sight balances held by the domestic parent bank are credited to the borrower. If other circumstances remain unchanged, the domestic money supply will therefore increase precisely as though the domestic parent bank had itself granted the loan. This does not mean, however, that the Euro-currency market has any special ability to create money; indeed, money creation via the Euro-market is subject to the same restrictions as money creation by any other means.

As a rule, every lending bank, including a banking group with Euro-market subsidiaries, must therefore accept a reduction in balances at the central bank, because ultimately the loan transits through domestic accounts, so that additional minimum reserves must be held in, say, Germany or the USA; there may also be outflows of cash or transfers to other banks which can only be effected via accounts at the central bank. It is true that, credit standing permitting, an individual bank

can acquire central-bank money on the money market at any time, but the market only serves to redistribute the central-bank money that is already available; it is in no way able to place additional money in circulation. As the central bank has a monopoly over the supply of central-bank money, the commercial banks have to dance to the central bank's tune, whether the loans are granted by domestic banks or by Euro-banks.

Multiple Reserve Currency System

The central banks are nevertheless confronted with foreign trade problems in reaching their monetary policy decisions, owing to the competition among investments in financial assets, especially bonds and high interest bearing bank deposits denominated in US dollars, Swiss francs, D-marks or yen.²¹ Experience has shown that abrupt changes in the preferences of internationally operating investors and central banks that spread their foreign exchange reserves over several currencies (especially the central banks of the OPEC countries) are reflected in sharp fluctuations in exchange rates and interest rates. This can cause changes in the domestic demand for money, which in turn may trigger expansionary or restrictive forces.

This danger was probably the reason why both the Deutsche Bundesbank and the Swiss National Bank overshot their money supply targets over a long period in the seventies.²² The crucial problem with such money supply control oriented towards foreign trade is that it is virtually impossible to separate external and domestic stimuli with any degree of precision, so that the central bank is in danger of wrongly dosing its expansion of the money supply, thereby fuelling inflation or causing deflation.²³

In fact, it would appear that both the Deutsche Bundesbank and the Swiss National Bank rather overdid things.²⁴ If the expansion in the money supply had been geared strictly to the growth in production potential, the acceleration in inflation at the end of the seventies would have been avoided and the restrictive policy of the early eighties would have been unnecessary. Viewed in these terms, McKinnon and his supporters are wrong. Given the lack of international currency substitution and the non-existence of a world money supply, the central banks should pay less rather than more heed to foreign trade.

¹⁹ Cf. Heinrich Matthes: Geldpolitik und Außenwirtschaft, in: Gottfried Bombach et al. (eds.): *Zur Theorie und Politik internationaler Wirtschaftsbeziehungen*, Tübingen 1981, p. 405. See also Gunter Dufey, Ian H. Giddy: *The International Money Market*, Englewood Cliffs 1978, p. 126.

²⁰ Cf. Heinrich Matthes: Die Banken und der Ausgleich der Zahlungsbilanz, in: *Die Bank*, No. 1, January 1979, p. 12.

²¹ See for example Manfred Neumann: Theoretische Aspekte der DM als internationale Anlage- und Reservewährung, in: Georg Bruns, Karl Häuser (eds.): *Die Deutsche Mark als internationale Anlage- und Reservewährung – Folgen für den Kapitalmarkt*, Frankfurt 1981, pp. 7-23.

²² See for example Fritz Leutwiler: The Swiss Franc as a Subsidiary Reserve Currency: Problems and Prospects, in: *Außenwirtschaft*, Vol. 35, No. 1, March 1980, pp. 335-339. With regard to the foreign trade orientation of Bundesbank policy, see for example Dieter Duwendag: Anmerkungen zur geldpolitischen Strategie der Deutschen Bundesbank, in: Werner Ehrlicher, Diethard B. Simmert (eds.): *Geld- und Währungspolitik in der Bundesrepublik Deutschland*, supplement to *Kredit und Kapital*, No. 7, Berlin 1982, pp. 111-129; Hans-Hermann Francke: Geldmengenpolitik bei außenwirtschaftlicher Instabilität, in: Werner Ehrlicher, Rudolf Richter (eds.): *Probleme der Währungspolitik*, Berlin 1981, pp. 217-238.

²³ Cf. Wolfgang Schröder: Das Multireservewährungssystem: Veränderte Rahmenbedingungen für die Politik der Deutschen Bundesbank, in: Werner Ehrlicher, Diethard B. Simmert (eds.), op. cit., pp. 431-448.

²⁴ A highly critical article on this subject is Reinhard Pohl: Muß der deutsche Zins im Schlepptau Amerikas bleiben?, in: *DIW, Wochenbericht* 13/84, Berlin, 29th March 1984, pp. 149-156.

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