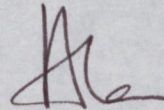August 11, 1988

Mr. Paul Gray
10 Downing Street

Dear Paul,

        I think you (and the Treasury!) should be aware of Roland
Vaubel's comment on the EMS. It is attached.

                                        Yours sincerely,

                                        Alan Walters

Attachment

1. ah
2. cu Tsy
3 PG or.

10 DOWNING STREET

LONDON SW1A 2AA

From the Private Secretary   15 August 1988

I am writing, in Paul Gray's absence
on leave, to acknowledge your letter and
enclosure of 11 August.

I shall ensure that he sees this on
his return.

(P.A. BEARPARK)

Sir Alan Walters

Alan Walters
with kind regards
Roland Vaubel

Roland Vaubel

Comment on "The European Monetary System: A Regional
Bretton Woods or an Institutional Innovation?"
by Manfred Wegner

Manfred Wegner's description and appraisal of the European
Monetary System (EMS) shows only one side of the coin: its
success in reducing exchange rate fluctuations among the member
currencies participating in the exchange rate mechanism (ERM).
What is the other side of the coin? Let us compare the years
before and after the establishment of the EMS.

1. Nominal and real exchange rate variations vis-à-vis (eight)
    other major OECD currencies have on average increased
    more for the ERM currencies than for the other OECD
    currencies or the other European OECD currencies (Ungerer
    et al., 1986, Tables 22 and 25).

2. Nominal effective exchange rate variations have on average
    decreased less for the ERM currencies than for the other
    European OECD currencies (Ungerer et al., 1986, Table 28).[1]

3. The average annual rate of depreciation vis-à-vis the DMark
    has on average decreased less for the ERM currencies than
    for other major European OECD currencies (calculated from
    Lehment, 1987, Table 2 a).

4. Expected exchange rate changes as proxied by the standard
    deviation of long or short term interest rates have increased
    among the ERM currencies; they have grown a little less,
    but since 1979 have been larger, than among the other major
    OECD countries (Ungerer et al., 1986, Tables 43 and 44;
    Harbrecht, Schmid, 1987, Figures 12 and 15).

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[1] This cannot be explained by the fact noted by Wegner (p. 14)
    that "a number of European countries such as Austria and
    Switzerland are quasi-members of the EMS, and others such
    as the United Kingdom have tacitly accepted exchange rate
    targeting in recent years".

5. <u>The weighted average of the inflation rates decreased much</u>
<u>more slowly, and in 1986 was still a little higher, in the</u>
<u>ERM countries than in the rest of the OECD</u> (Scheide, Sinn,
1987, Table 1; de Grauwe, 1987, Table 1; 1985, Figure 4;
Collins, 1987, Table 2; Harbrecht, Schmid, 1987, Figure 3).
It also decreased more slowly in the EMS than in the other
<u>European</u> OECD countries although it is still lower in the
former than in the latter group (Scheide, Sinn, 1987,
Table 1; de Grauwe, 1987, Table 1).

6. <u>If the seven years before and after the establishment of</u>
<u>the EMS are compared, the standard deviation of inflation</u>
<u>rates shows an increase among the ERM currencies but a</u>
<u>decrease among the other major OECD currencies</u> (Collins,
1987, Table 2). <u>Over the whole life of the EMS</u>, the dispersion
of inflation rates has also been much larger among the ERM
currencies than among the major OECD currencies (Collins,
1987, Table 2; Harbrecht, Schmid, 1987, Figure 5; de Grauwe,
1985, Figure 3). For the more recent past, this is not true
any longer (Collins; Harbrecht, Schmid,ibid.) but there remain
the fact that <u>inflation convergence took longer in the EMS</u>
<u>than in the rest of the OECD</u>.

7. <u>From December 1978 to December 1985, bid-ask spreads vis-à-</u>
<u>vis the DMark increased for the average of ERM currencies.</u>
<u>and they increased more for the ERM currencies than for</u>
<u>an average of other major European OECD currencies</u> (Le
1987, Tables 4a and 4b).

8. <u>Since the establishment of the EMS, all old member</u>
<u>EEC</u>[1] have experienced larger growth rates in the
<u>with non-ERM countries than with other ERM coun</u>
Grauwe, 1985, Table 2).

---

1) As de Grauwe points out, this is not tru
Ireland which joined the EC customs uni
and may still have been benefitting f
trade creation.

9. Real growth of investment and GDP was much slower in the ERM
    countries than in the other OECD countries; compared with
    1973-78, it declined more in the ERM-countries than in the
    other major OECD countries; in the other European OECD
    countries, investment has even increased (de Grauwe, 1987,
    Table 1).[1]

To sum up: the exchange rate mechanism of the EMS does not seem
to have contributed to reducing nominal effective exchange rate
variations, inflation and inflation differences of the member
currencies, or to increasing intra-ERM trade, investment and
growth in the member countries.

The EMS exchange rate arrangement is a cartel of national
money producers with a price leader. Cartels are inherently
unstable; ceteris paribus, they raise price (here: the price
of holding money) and reduce the output (here: real money
balances). The EMS money supply cartel is neither a necessary
nor an efficient step on the way to a common European currency.

Whether such a single European currency should be "the
final objective of the Community", as Wegner (p. 29) suggests,
is an open question to which politicians and economists cannot
know the answer. It depends on the trade-off between price
level stability and transaction costs. As I have argued else-
where (Vaubel 1987), only individual money users possess the
knowledge and incentive required to make that choice. The optimal
way of finding out whether currency union is efficient and,
if so, of bringing it about is unrestricted currency competition
or "choice in currency" (Hayek 1976). The European Currency
Unit (ECU) can be instrumental in this process, especially if
its weights are permitted to respond to revealed currency
preferences (Vaubel 1987).

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1) "The disinflationary stance and the high real interest rates
    of the 1980s" emphasized by Wegner (p. 26) do not explain
    this difference, since disinflation was faster in the other
    OECD countries.

- 4 -

References:

Collins, Susan M. (1987),"PPP and the Peso Problem: Exchange
    Rates in the EMS", Workshop on the International Monetary
    System, the European Monetary System, the ECU and Plans
    for World Monetary Reform, European University Institute,
    Florence, April 1987 (forthcoming: E.M. Claassen, Ed.).

Grauwe, Paul de (1985), "Memorandum", in: Memoranda on the
    European Monetary System, House of Commons, Treasury and
    Civil Service Committee, The Financial and Economic
    Consequences of UK Membership of the European Communities,
    London, pp. 5-11.

Grauwe, Paul de (1987), Fiscal Policies in the EMS: A Strategic
    Analysis, Workshop on the International Monetary System,
    the European Monetary System, the ECU and Plans for World
    Monetary Reform, European University Institute, Florence,
    April 1987 (forthcoming: E.M. Claassen, Ed.).

Harbrecht, Wolfgang, Jürgen Schmid (1987), "Die Monetären
    Konvergenzwirkungen des EWS", in: H.-E. Scharrer,
    W. Wessels (Ed.), Stabilität durch das EWS? Bonn 1987,
    pp. 213-253.

Hayek, Friedrich A. von (1976), Choice in Currency. A Way to
    Stop Inflation, Institute of Economic Affairs, London,
    Occasional Papers, 48.

Lehment, Harmen (1987), "Neue Gemeinschaftspolitiken: Währungs-
    politische Zusammenarbeit", in: H. Dicke et al., EG-Politik
    auf dem Prüfstand. Wirkungen auf Wachstum und Struktur-
    wandel in der Bundesrepublik, Tübingen, pp. 152-167.

Scheide, Joachim, Stefan Sinn (1987), Internationale Koordination
    der Wirtschaftspolitik: Pro und Contra, Kieler Diskussions-
    beiträge, 135.

Ungerer, Horst, Owen Evans, Thomas Mayer, Philip Young (1986),
    The European Monetary System: Recent Developments, Inter-
    national Monetary Fund, Occasional Papers, 48.

Vaubel, Roland (1987), Currency Unification, Currency Competition,
    and the Private ECU: Second Thoughts, Workshop on the
    International Monetary System, the European Monetary System,
    the ECU and Plans for World Monetary Reform, European
    University Institute, Florence, April 1987 (forthcoming:
    E.M. Claassen, Ed.).

Wegner, Manfred (1987), "The European Monetary System: A Regional
    Bretton Woods or an Institutional Innovation?", in this
    volume.

Table 22. Variability of Bilateral Nominal Exchange Rates Against Non-ERM Currencies, 1974–1985[1]

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	Average 1974–78	Average 1979–85
Belgium	36.6	40.8	29.4	31.1	45.7	33.8	43.9	53.1	57.1	52.3	36.1	57.0	*36.7*	*47.6*
Denmark	32.6	33.6	25.5	30.6	39.0	30.3	38.8	53.7	45.9	47.3	34.0	55.9	*32.3*	*43.7*
France	34.1	34.5	47.8	27.0	45.9	35.6	44.4	60.7	57.6	65.1	39.7	61.8	*37.8*	*52.1*
Germany, Fed. Rep. of	34.3	35.1	30.0	32.6	46.4	39.3	45.9	48.1	33.1	38.6	36.3	53.5	*35.7*	*42.1*
Ireland	18.1	47.5	61.4	25.7	32.3	29.1	43.4	57.7	36.8	63.9	39.2	65.4	*37.0*	*47.9*
Italy	24.8	28.7	70.4	26.3	39.9	32.0	53.9	65.0	39.9	55.6	39.2	50.0	*38.0*	*47.9*
Netherlands	35.4	38.9	35.4	28.8	45.7	32.5	40.6	57.6	33.1	45.8	42.2	66.5	*36.8*	*45.5*
Average ERM[2]	**30.8**	**37.0**	**42.8**	**28.9**	**42.1**	**33.2**	**44.4**	**56.6**	**43.4**	**52.6**	**38.1**	**58.6**	*36.3*	*46.7*
Austria	44.0	38.0	33.4	35.3	46.9	49.9	45.5	51.5	35.3	43.1	40.7	62.5	*39.5*	*46.5*
Canada	12.9	16.7	17.0	34.1	36.1	18.3	18.3	17.0	24.6	7.3	23.5	26.8	*23.4*	*19.4*
Japan	33.3	22.1	22.1	59.5	96.7	68.3	64.7	48.5	54.5	18.4	33.6	84.8	*46.7*	*53.3*
Norway	30.5	40.2	30.7	34.4	42.4	29.9	30.0	42.9	61.1	22.7	42.3	51.7	*35.6*	*40.1*
Sweden	33.4	37.3	25.8	64.2	38.7	30.6	28.2	65.5	79.7	24.4	30.3	48.8	*39.9*	*43.9*
Switzerland	63.1	28.1	18.7	57.4	72.8	38.1	43.0	62.1	46.4	29.1	44.2	72.4	*48.0*	*47.9*
United Kingdom	25.7	56.4	82.5	34.4	48.8	54.0	34.4	79.9	43.7	26.4	51.1	75.7	*49.6*	*52.2*
United States	24.3	24.7	22.2	41.3	58.2	37.2	38.2	40.5	43.5	14.8	35.2	59.5	*34.2*	*38.4*
Average non-ERM[2]	**33.4**	**32.9**	**31.5**	**45.1**	**55.1**	**40.8**	**37.8**	**51.0**	**48.6**	**23.3**	**37.6**	**60.3**	*39.6*	*42.8*
Average European non-ERM[2]	**39.3**	**40.0**	**38.2**	**45.1**	**49.9**	**40.5**	**36.2**	**60.4**	**53.2**	**29.2**	**41.7**	**62.2**	*42.5*	*46.2*

Sources: International Monetary Fund, *International Financial Statistics*, various issues; and Fund staff calculations.
[1] Weighted average (MERM weights) of variability of bilateral nominal exchange rates against non-ERM currencies, with variability measured by coefficient of variation (multiplied by 1,000) of average <u>monthly</u> bilateral exchange rates.
[2] Unweighted average.

Table 25. Variability of Bilateral Real Exchange Rates Against Non-ERM Currencies, 1974–85[1]

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	Average 1974–78	Average 1979–85
Belgium	42.8	35.7	31.0	27.9	40.8	36.6	50.6	56.4	50.5	44.6	36.0	55.9	*35.6*	*47.2*
Denmark	38.7	41.5	38.7	28.9	38.3	35.2	40.9	50.0	41.9	44.2	32.7	54.4	*37.2*	*42.7*
France	34.7	31.1	38.5	27.2	44.8	41.3	41.7	52.6	51.7	51.0	36.2	64.2	*35.3*	*48.4*
Germany, Fed. Rep. of	29.1	43.4	24.3	27.8	38.7	35.8	58.9	50.1	33.8	42.2	40.5	49.9	*32.7*	*44.5*
Ireland	25.3	49.3	36.7	25.6	29.6	29.6	44.5	52.4	37.1	52.6	38.7	65.8	*33.3*	*45.8*
Italy	26.4	23.9	49.2	26.4	36.0	48.6	38.1	51.1	34.6	36.5	34.1	50.4	*32.4*	*41.9*
Netherlands	30.6	36.6	38.4	25.4	39.8	35.1	48.9	61.4	34.6	48.3	44.9	63.1	*34.2*	*48.0*
Average ERM[2]	**32.5**	**37.3**	**36.7**	**27.0**	**38.3**	**37.5**	**46.2**	**53.4**	**40.6**	**45.6**	**37.6**	**57.7**	*34.4*	*45.5*
Austria	34.9	42.5	30.4	29.6	36.4	22.8	18.3	22.1	25.3	8.4	25.1	26.4	*21.8*	*21.2*
Canada	14.0	14.8	17.2	26.5	36.4	22.8	18.3	22.1	25.3	8.4	25.1	26.4	*21.8*	*21.2*
Japan	30.6	21.4	28.1	52.6	84.9	84.6	57.0	59.7	59.6	21.9	37.6	82.0	*43.5*	*57.5*
Norway	23.2	36.5	28.5	30.3	39.3	35.9	29.8	43.2	53.1	20.4	40.7	54.2	*31.6*	*39.6*
Sweden	28.6	32.7	28.8	48.0	32.1	33.2	29.8	66.8	73.7	18.7	29.1	49.6	*34.0*	*43.0*
Switzerland	53.6	36.4	14.8	50.1	61.1	33.8	52.8	62.7	42.8	33.2	48.2	67.2	*43.2*	*48.7*
United Kingdom	30.0	30.4	62.6	33.3	43.0	77.2	36.8	69.8	42.6	25.5	47.6	81.9	*39.9*	*54.5*
United States	24.9	21.1	23.6	35.9	51.8	46.5	36.7	47.1	44.7	16.6	37.6	58.6	*31.4*	*41.1*
Average non-ERM[2]	**30.0**	**29.5**	**29.2**	**38.3**	**48.5**	**47.2**	**39.7**	**53.3**	**47.3**	**23.9**	**38.6**	**59.9**	*35.1*	*44.3*
Average European non-ERM[2]	**34.1**	**35.7**	**33.0**	**38.3**	**42.9**	**44.7**	**41.1**	**59.5**	**49.8**	**28.8**	**41.7**	**62.5**	*36.8*	*46.9*

Sources: International Monetary Fund, *International Financial Statistics*, various issues; and Fund staff calculations.
[1] Weighted average (MERM weights) of variability of bilateral real exchange rates (nominal exchange rates adjusted for relative consumer price movements—wholesale prices for Ireland) against non-ERM currencies, with variability measured by the coefficient of variation (multiplied by 1,000) of average <u>monthly</u> bilateral exchange rates.
[2] Unweighted average.

Source: Ungerer et al. (1986)

Table 28. Variability of Nominal Effective Exchange Rates, 1974–85[1]

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	Average 1974–78	Average 1979–85
Belgium	18.6	23.2	27.6	9.4	15.4	9.3	14.5	14.5	35.9	20.2	8.3	18.6	*18.8*	*17.3*
Denmark	21.0	18.5	24.8	18.0	14.4	17.3	20.1	24.4	19.5	27.6	14.0	32.1	*19.3*	*22.1*
France	26.3	21.9	40.3	5.4	17.0	14.9	18.3	31.5	40.8	40.4	17.4	34.6	*22.2*	*28.3*
Germany, Fed. Rep. of	25.7	23.6	36.5	20.2	20.4	23.0	23.9	22.4	15.9	15.2	18.6	30.2	*25.3*	*21.3*
Ireland	10.8	39.6	63.1	16.3	19.9	12.4	22.9	23.3	10.7	39.4	17.0	33.4	*29.9*	*22.7*
Italy	31.6	5.4	63.4	14.7	20.2	8.6	28.9	39.5	15.7	28.9	17.7	15.7	*27.1*	*22.1*
Netherlands	15.9	19.5	33.5	8.1	16.8	11.0	13.1	26.0	14.7	14.6	16.9	33.2	*18.8*	*18.5*
Average ERM[2]	**21.4**	**21.7**	**41.3**	**13.1**	**17.7**	**13.8**	**20.2**	**25.9**	**21.9**	**26.6**	**15.7**	**28.3**	*23.1*	*21.8*
Austria	31.4	21.4	31.8	17.2	14.2	32.9	22.4	23.9	10.0	20.5	20.6	35.6	*23.2*	*23.7*
Canada	6.8	15.1	16.2	33.2	39.5	14.3	7.2	17.3	19.8	11.1	14.6	33.3	*22.2*	*16.8*
Japan	31.5	10.0	21.7	53.6	85.5	71.0	70.3	21.4	35.1	24.2	11.4	56.4	*40.4*	*41.4*
Norway	15.3	25.6	26.6	21.5	23.1	8.8	7.4	10.3	44.1	8.6	25.8	17.6	*22.4*	*17.5*
Sweden	24.4	22.8	21.2	60.7	1.9	14.6	4.3	49.6	67.1	4.3	5.3	11.8	*26.2*	*22.4*
Switzerland	54.7	13.0	24.8	54.0	59.4	18.4	18.5	55.9	24.1	6.9	25.8	48.3	*41.2*	*28.3*
United Kingdom	12.2	41.8	71.6	12.7	26.2	40.2	30.1	58.3	20.0	23.5	33.2	51.0	*32.9*	*36.6*
United States	18.7	29.9	7.5	14.3	35.7	10.3	23.6	48.8	44.3	30.4	43.6	61.1	*21.2*	*37.4*
Average non-ERM[2]	**24.4**	**22.5**	**27.7**	**33.4**	**35.7**	**26.3**	**23.0**	**35.7**	**33.1**	**16.2**	**22.5**	**39.4**	*28.7*	*28.0*
Average European non-ERM[2]	**27.6**	**24.9**	**35.2**	**33.2**	**25.0**	**23.0**	**16.5**	**39.6**	**33.1**	**12.7**	**22.1**	**32.9**	*29.2*	*25.7*

Sources: International Monetary Fund, *International Financial Statistics*, various issues; and Fund staff calculations.
[1] Based on the IMF's multilateral exchange rate model (MERM) and monthly data. Variability is measured by the coefficient of variation (multiplied by 1,000) of average monthly effective exchange rates.
[2] Unweighted average.

Source: Ungerer et al. (1986)

Tabelle 2a: Durchschnittliche jährliche Änderung des DM-Außenwerts gegenüber anderen europäischen Währungen in v.H.

	März 1973 – März 1979		März 1979 – März 1986	
I. Belgischer Franc	2.0		3.7	
Dänische Krone	4.1	2.3[a]	4.0	2.8[a]
Holländischer Gulden	.8		.7	
		6.0[a]		3.6[a]
II. Französischer Franc	6.1		4.2	
Irisches Pfund	10.0	9.7[a]	3.3	4.5[a]
Italienische Lira	12.9		5.9	
III. Norwegische Krone	4.6		2.3	
Schwedische Krone	6.5	7.0[a]	4.5	2.9[a]
Pfund Sterling	10.0		2.0	

[a] ungewichteter Durchschnitt

Quelle: Deutsche Bundesbank, Monatsberichte, verschiedene Ausgaben. (Lehment)

Table 44. Long-Term Interest Rates, 1974–85[1]

(Monthly averages in percent)

	1974	1975	1976	1977	1978	Average 1974–78	1979	1980	1981	1982	1983	1984	Average 1979–84	1985
Belgium	8.7	8.5	9.1	8.8	8.4	*8.7*	9.5	12.0	13.7	13.6	11.9	12.0	*12.1*	10.6
Denmark	14.5	13.1	13.2	13.4	14.5	*13.7*	15.8	17.7	18.9	20.4	14.5	13.9	*16.9*	...
France	10.5	9.5	9.2	9.6	9.0	*9.6*	9.5	13.0	15.7	15.6	13.6	12.4	*13.3*	...
Germany, Fed. Rep. of	10.4	8.5	7.8	6.2	5.8	*7.7*	7.4	8.5	10.4	9.0	7.9	7.8	*8.5*	6.9
Ireland	16.9	14.6	15.5	11.3	12.8	*14.2*	15.1	15.3	17.3	17.1	13.9	14.6	*15.6*	12.6
Italy	9.9	11.5	13.1	14.6	13.7	*12.6*	14.0	16.1	20.6	20.9	18.0	14.9	*17.4*	...
Netherlands	9.8	8.8	8.9	8.1	7.7	*8.7*	8.8	10.2	11.6	10.1	8.6	8.3	*9.6*	7.3
Arithmetic average ERM	11.5	10.6	11.0	10.3	10.3	*10.7*	11.4	13.3	15.5	15.2	12.6	12.0	*3.2*	...
Standard deviation	2.8	2.3	2.7	2.8	3.1	2.5	3.2	3.1	3.5	4.3	3.3	2.7		
Difference between highest and lowest value	8.2	6.1	7.7	8.4	8.7	*6.5*	8.4	9.2	10.2	11.9	10.1	7.1	*8.9*	...
Coefficient of variation	0.24	0.21	0.25	0.27	0.30	*0.23*	0.28	0.23	0.23	0.28	0.26	0.22	*0.24*	...
Weighted average	10.3	9.5	9.4	9.1	8.6	...	9.6	11.8	14.4	13.8	12.0	11.0	*13.1*	14.1
Australia	9.1	9.8	10.2	10.3	9.1	9.7	9.8	11.6	14.0	15.3	14.3	13.8	*9.0*	7.8
Austria	9.7	9.6	8.8	8.7	8.2	9.0	8.0	9.2	9.9	8.2	8.0	9.0	*12.8*	11.0
Canada	8.9	9.0	9.2	8.7	9.3	9.0	10.2	12.5	15.2	14.3	11.8	12.8	*8.0*	6.3
Japan	9.3	9.2	8.7	7.3	6.1	8.1	7.7	9.2	8.7	8.1	7.4	6.8	*12.6*	17.7
New Zealand	6.1	6.3	8.3	9.2	10.0	8.0	12.0	13.3	12.8	12.9	12.2	12.6	*9.9*	...
Norway	7.1	7.3	7.3	7.4	8.4	7.5	8.6	...	12.3	13.2	12.9	12.2	*14.7*	...
Portugal	...	...	9.7	10.8	16.2	7.3	16.7	16.7	16.7	16.8	...	21.5	*12.2*	12.3
Sweden	7.8	8.8	9.3	9.7	10.1	9.1	10.5	11.7	13.5	13.0	12.3	12.3	*4.6*	4.7
Switzerland	7.1	6.4	5.0	4.1	3.3	5.2	3.4	4.8	5.6	4.8	4.5	4.7	*12.7*	10.6
United Kingdom	14.8	14.4	14.4	12.7	12.5	13.8	13.0	13.8	14.7	12.9	10.8	10.7	*11.9*	11.0
United States	8.1	8.2	7.9	7.7	8.5	8.1	9.3	11.4	13.7	12.9	11.3	12.5	*11.0*	...
Arithmetic average non-ERM	8.8	8.9	9.0	8.8	9.2	*8.6*	9.9	11.4	12.5	12.2	9.6	11.6	*2.8*	...
Standard deviation	2.3	2.2	2.2	2.1	3.1	2.0	3.2	3.0	3.0	3.2	4.1	4.2		
Coefficient of variation	0.26	0.25	0.24	0.24	0.34	0.23	0.32	0.27	0.24	0.27	0.42	0.36	*0.25*	...

Source: International Monetary Fund, *International Financial Statistics*, various issues.
[1] Long-term government bond yields.

Table 43. Short-Term Interest Rates, 1974–85[1]

(Monthly averages in percent)

	1974	1975	1976	1977	1978	Average 1974–78	1979	1980	1981	1982	1983	1984	Average 1979–84	1985
Belgium	9.3	4.6	8.3	5.5	5.2	6.6	8.0	11.2	11.5	11.4	8.2	9.5	*10.0*	8.3
Denmark	13.3	6.5	10.3	14.5	15.4	*12.0*	12.6	16.9	14.8	16.4	12.0	11.5	*14.0*	10.0
France	12.9	7.9	8.6	9.1	8.0	*9.3*	9.0	11.8	15.3	14.9	12.5	11.7	*12.5*	9.9
Germany, Fed. Rep. of	8.9	4.4	3.9	4.1	3.4	*4.9*	5.9	9.1	11.3	8.7	5.4	5.5	*7.7*	5.2
Ireland	11.3	10.0	10.8	7.7	8.4	9.6	13.5	15.4	13.5	13.2	10.1	8.7	*12.4*	...
Italy	14.6	10.6	15.7	14.0	11.5	*13.3*	11.9	17.2	19.6	20.2	18.5	17.3	*17.5*	15.2
Netherlands	9.2	4.2	7.3	3.8	6.2	*6.1*	9.0	10.1	11.0	8.1	5.3	5.8	*8.2*	6.3
Arithmetic average ERM	11.4	6.9	9.3	8.4	8.3	*8.8*	10.0	13.1	13.9	13.3	10.3	10.0	*3.2*	...
Standard deviation	2.1	2.5	3.4	4.1	3.8	2.9	2.5	3.1	2.8	4.0	4.3	3.7		
Difference between highest and lowest value	5.7	6.4	11.8	10.7	12.0	*8.3*	7.6	8.1	8.6	12.1	13.2	11.8	*9.8*	...
Coefficient of variation	0.19	0.36	0.36	0.49	0.45	*0.33*	0.26	0.24	0.20	0.30	0.42	0.37	*0.27*	...
Weighted average	11.2	6.6	7.9	7.5	6.7	...	8.4	11.8	14.1	13.0	10.3	10.1	...	...
Japan	12.5	10.7	7.0	5.7	4.4	*8.1*	5.9	10.9	7.4	6.9	6.4	6.1	*7.3*	6.5
Norway	8.1	7.5	7.4	9.8	9.4	*8.4*	8.4	11.2	12.3	13.9	12.3	12.7	*11.8*	...
Sweden	7.5	7.8	7.9	10.0	7.2	*8.1*	8.2	12.2	14.4	13.3	10.9	11.8	*11.8*	13.8
United Kingdom	11.4	10.2	11.1	7.7	8.5	9.8	13.0	15.1	13.0	11.5	9.6	9.3	*11.9*	11.6
United States	10.5	5.8	5.0	5.5	7.9	6.9	11.2	13.4	16.4	12.3	9.1	10.2	*12.1*	8.1
Arithmetic average non-ERM	10.0	8.4	7.7	7.7	7.5	*8.3*	9.3	12.6	12.7	11.6	9.7	10.0	*1.9*	...
Standard deviation	1.9	1.8	2.0	1.9	1.7	0.9	2.5	1.5	3.0	2.5	2.0	2.3		
Coefficient of variation	0.19	0.22	0.26	0.25	0.23	0.11	0.27	0.12	0.24	0.21	0.20	0.23	*0.17*	...

Source: International Monetary Fund, *International Financial Statistics*, various issues.
[1] In general call money rates, 3-month treasury bill rates for the United Kingdom.

Source: Ungerer et al. (1986)

Table 2: CPI Inflation Rates

	3/72-3/79	3/79-3/86	3/79-3/82	3/83-3/86
Belgium	7.6	5.5	7.1	4.8
Denmark	8.9	7.1	11.9	4.8
France	8.7	8.3	13.4	6.0
Germany	4.3	3.3	5.6	1.9
Italy	13.0	12.3	18.6	9.4
Netherlands	6.5	3.6	6.4	2.3
U.S.	6.8	5.7	10.6	3.6
Japan	10.8	6.2	5.5	10.5
U.K.	12.2	7.7	14.2	5.2
Switzerland	4.1	3.5	5.0	2.6

	avg	std	avg	std	avg	std	avg	std
EMS	8.2	2.6	6.7	3.4	10.5	4.6	4.9	2.5
Non-EMS	7.6	3.3	5.3	1.7	8.1	4.5	4.8	3.1

Source : Collins (1987)

Table 1 : Macroeconomic performance of EMS and non-EMS
industrialized countries.

	EMS	Non-EMS	European Non-EMS

Growth of GDP
  (yearly average)

1973-78 :	2.8	2.9	1.9
1979-85 :	1.7	2.7	1.8

Growth of Investment
  (yearly average)

1973-78 :	1.4	2.8	-0.2
1979-85 :	0.3	2.5	0.4

Inflation rate
  (yearly average)

1973-78 :	9.1	9.6	12.5
1979-85 :	8.3	6.9	8.8
1985 :	4.6	3.8	5.9

Source : OECD, Main Economic Indicators

Note : (1) The Non-EMS countries are the following :
Austria, Norway, Sweden, Switzerland, Finland, Spain,
UK, Canada, US, Japan. The European Non-EMS consists
of the same countries excluding the US, Japan and
Canada.
(2) The averages of each group of countries are
obtained using GDP weights.

Source : de Grauwe (1987)

Tabelle 3 - Inflationsraten in OECD-Ländern(a)

Jahr	EWS-Länder	OECD insgesamt	OECD-Europa	OECD ohne EWS-Länder	OECD-Europa ohne EWS-Länder
1979	8,5	9,8	10,6	10,1	14,3
1980	11,7	12,9	14,3	13,2	18,5
1981	11,5	10,5	12,2	10,3	13,2
1982	10,4	7,8	10,5	7,1	10,7
1983	8,5	5,2	8,2	4,3	7,7
1984	6,6	5,2	7,4	4,7	8,6
1985	5,5	4,5	6,5	4,2	7,9
1986	2,7	2,6	4,0	2,6	5,9

- Veränderung 1986 gegenüber 1979:

	-5,8	-7,2	-6,6	-7,5	-8,4

- Veränderung 1985/86 gegenüber 1979/80:

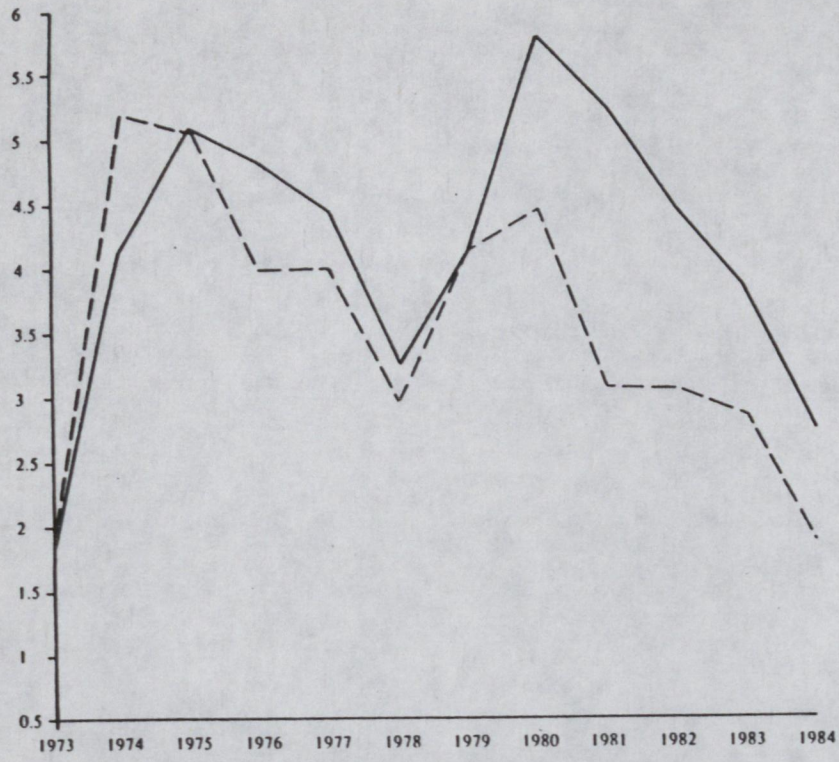|	-6,0	-7,8	-7,2	-8,3	-9,5

(a) Anstieg der Verbraucherpreise gegenüber dem Vorjahr (Gewichtung nach OECD).

Quelle: OECD [a; b]; eigene Berechnungen.

Aus: Scheide, Sinn (1987)

Figure 3: Standard Deviation of national inflation rates in the EMS and in Non-EMS Industrial Countries.
#### (in per cent)

Source: IMF, International Financial Statistics

Note: The non-EMS industrial countries are the US, the UK, Japan, Canada, Austria, Norway, Sweden, Switzerland.
The standard deviation here measures the deviation of national inflation rates from the weighted mean inflation rate in each group of countries.

Figure 4: Average Inflation Rates in the EMS and in the Non-EMS Industrial Countries.
(In percent)
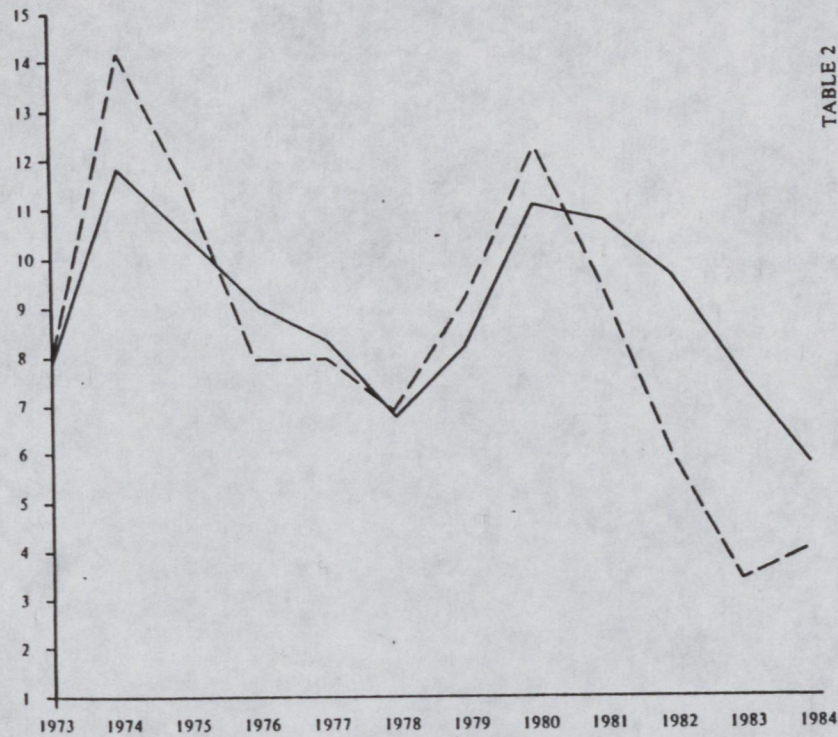
Source: IMF, International Financial Statistics.

Note: The inflation rates in each group of countries are weighted averages. The weights are obtained from GDP figures.
See also notes of Figure 3.

Source: de Grauwe (1985)

TABLE 2

Average Yearly Growth of Trade (Export & Import), 1979-84

	with EMS countries	with non-EMS countries[*]
Old EEC members		
Belgium	0.3	4.9
France	1.3	5.3
Germany	1.4	4.4
Netherlands	0.4	3.9
Italy	0.4	2.2
New EEC members		
Denmark	2.8	2.5
Ireland	5.9	3.8
United Kingdom	4.1	4.9

Source: IMF, Direction of Trade.
[*]The same countries as in Figure 1.

Tabelle 4 a: Abstand des Geld- und Briefkurses vom Mittelkurs im amtlichen Frankfurter Devisenhandel in v.H.[a]

	Dezember 1970	Dezember 1978		Dezember 1985	
I. Belgischer Franc	.13	.16		.20	
Dänische Krone	.12	.17	} .15	.22	} .18
Holländischer Gulden	.11	.12		.12	
II. Französische Franc	.15	.18		.24	
Irisches Pfund	.11	.19	} .20	.23	} .27
Italienische Lira	.17	.22		.34	
III. Norwegische Krone	.12	.16		.18	
Schwedische Krone	.11	.19	} .18	.24	} .20
Pfund Sterling	.11	.19		.19	

[a] Amtliche Devisenkurse gegenüber der D-Mark an der Frankfurter Börse.

Quelle: Deutsche Bundesbank, Monatsberichte, verschiedene Ausgaben.

Tabelle 4 b: Abstand des Geld- und Briefkurses vom Mittelkurs im Düsseldorfer Sortenhandel in v.H.

	Ende Dezember 1978		Ende Dezember 1985	
I. Belgischer Franc	2.0		2.0	
Dänische Krone	2.5	} 1.9	3.2	} 2.1
Holländischer Gulden	1.3		1.2	
II. Französische Franc	2.6		2.7	
Irisches Pfund	-	} 3.0	2.4	} 3.1
Italienische Lira	3.4		3.5	
III. Norwegische Krone	2.8		2.7	
Schwedische Krone	2.4	} 2.5	2.7	} 2.5
Pfund Sterling	2.4		2.1	

Quelle: Handelsblatt, verschiedene Ausgaben. (Lehmet)