Regional Trading Blocs, Mobile Capital and Exchange Rate Co-ordination

by

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Abstract

Two recent issues in the world economy have been the emergence of regional trade blocs and the increasing extent of international financial deregulation. Direction of trade data are used to look at the evolution of regional trade patterns in Europe, North America and East Asia, and saving investment data are used to examine the extent of international capital mobility. The results indicate some trend toward increasing regional insularity of trade together with increasing international capital mobility. The policy implications of these trends are then discussed.

JEL Classification Numbers
F15, F31, F36

1 Introduction

Two issues in the world economy in recent years have been the emergence of regional trade groupings in Europe, North America and (to a lesser extent) East Asia and the increasing extent of international financial deregulation. These developments in the international markets for goods and for capital have significant implications, in particular for the role of exchange rates in the world economic system. This paper analyses each of these developments in turn in order to provide a framework for assessing the prospects for global macro-economic and exchange rate co-ordination in the 1990s and beyond.

The 1992 program of the EC, the North American Free Trade Agreement and the emergence of interest in an East Asian trading area have caused many commentators to focus on the issue of regional trade blocs and their effects on international trade.(1) One concern is the so-called 'Fortress Europe' effect, in which regional trade blocs result in trade being diverted from (presumably more efficient) external sources to internal sources, rather than producing a beneficial rise in the overall volume of trade.(2) More generally, the openness of these three regional blocs to extra-regional trade has implications for international economic relations, as does the variation in openness between members of each bloc. This paper uses direction of trade data to look at the evolution of intra and extra-regional trade in Europe, North America and East Asia over the last decade. It is found that, particularly in the case of North America and Europe, these regional economies are relatively closed, and that

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(1) See Krugman (1991b) and Schott (1991).

(2) There is an extensive literature on the welfare effects of customs unions. See Viner (1950), Lipsey (1960), Kemp and Wan (1976) and Krugman (1991a).

over the last decade that has been some trend towards greater regional insularity of trade.

These regional trade blocs may also have fostered increasingly integrated regional capital markets. Data on saving and investment are used to look at capital mobility in North America, Europe and East Asia, following the approach first suggested by Feldstein and Horioka (1980). These results do indeed indicate increasingly integrated regional capital markets. However, this movement appears to largely reflect a global increase in financial integration, with only limited region-specific effects.

Increasing insularity of regional trade patterns and rising international capital mobility have a number of implications for the international economy. Limited levels of inter-regional trade implies that relative exchange rates among the three major currencies are becoming less important for activity outside of their own region. At the same time, increased international capital mobility may have made exchange rates more sensitive to portfolio preferences and reduced the ability of policy makers to control exchange rates by policies such as sterilised intervention. Both trends make exchange rates less attractive to use as an instrument of international policy co-ordination.

The rest of the paper is organised as follows. Section 2 looks at developments in global trading patterns in the second half of the 1980s. Section 3 discusses evidence on regional and global capital mobility. Section 4 draws this evidence together in an attempt to shed light on the prospects for global exchange rate management in the 1990s. Section 5 contains conclusions.

2 Global Trading Patterns in the 1980s

Our investigation of trade blocs starts by looking at the level of intra- and extra-regional visible trade[3] in Western Europe, North America and East Asia. The Western European region comprises of the twelve current members of the EC plus six members of EFTA (Switzerland, Austria, Sweden, Finland, Norway and Iceland).[4] The reason for including the EFTA countries in the region is that most of these countries are likely to become members of the EC in the foreseeable future. In addition, many of them already have extensive trade links with existing members of the EC (particularly Austria and Switzerland with Germany), and hence exclusion of these countries may give a false impression of the openness of the 'European' economy.[5]

For comparison, figures for the EC and EFTA are also reported separately. The North American region is defined as the potential members of NAFTA, namely the United States, Canada and Mexico. This region, which is of course dominated by the United States economy, forms another well-defined geographic entity. Finally, the East Asia grouping comprises Japan, South Korea, Taiwan, Hong Kong, Singapore, Australia, New Zealand and the four members of ASEAN (Indonesia, Malaysia, Thailand and the Philippines).[6]

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(3) All of the analysis in this paper refers to only to visible trade, since direction of trade data on trade in services are not readily available. Clearly, it would also be interesting to analyse trends in trade in services.

(4) This is a somewhat wider definition that used by earlier authors such as Schott (1991), Frenkel, Goldstein and Masson (1991) and Frankel (1991b) who only considered the EC.

(5) Several EFTA countries have industry specific free trade agreements with the EC (Schott, 1991), making them partial members of the EC customs union.

(6) These regions were chosen primarily on the basis of geographic proximity, since the focus of this paper is on regional trading arrangements. Several of the East Asian countries link their exchange rates to the dollar, and could, on these grounds, have been included in the North American grouping.

Table 1 panels A and B illustrates developments in the patterns of trade between and within these three major trading blocks in the world economy for two benchmark years, 1980 and 1990.(7) Panel A contains data on total trade, while panel B has data on non-oil trade, both measured as the sum of imports and exports to the region.(8) Non-oil data were collected since there was a substantial change in the real price of oil between 1980 and 1990. In what follows the data on total trade will be used for looking at the overall openness of the regions, while the non-oil data will be used for analysis of underlying trends.

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(7) Appendix Table 1 contains annual data for all the years from 1980 to 1990. The data appear to be influenced by movements in the dollar, and in particular the strength of the dollar in the mid-1980s. Since the real effective level of the dollar was similar in the 1980 and 1990, we believe a comparison between these dates to be the most illuminating.

(8) Data on non-primary commodity trade were also collected, and are reported in Appendix Table 3.

Table 1 Measures of Intra-regional trade

A Total Trade

$ Values (billions of current US dollars)

	Total trade of region		Total with ROW		Intra bloc trade	
	1980	1990	1980	1990	1980	1990
Europe	1695	3210	625	968	1070	2242
o/w EC	1456	2755	693	1117	764	1638
EFTA	239	455	206	395	33	60
North America	619	1183	414	745	205	438
East Asia	555	1257	399	817	156	440

As a percentage of GDP

	Total trade of region		Total with ROW		Intra bloc trade	
	1980	1990	1980	1990	1980	1990
Europe	48.8	46.9	18.0	14.1	30.8	32.8
o/w EC	47.6	46.0	22.6	18.7	24.9	27.4
EFTA	57.4	52.9	49.6	16.0	7.8	7.0
North America	19.6	18.7	13.1	11.8	6.5	6.9
East Asia	36.1	30.9	25.9	20.1	10.1	10.8

B Non-Oil Trade

$ Values (billions of current US dollars)

	Total trade of region		Total with ROW		Intra bloc trade	
	1980	1990	1980	1990	1980	1990
Europe	1430	3002	467	868	963	2134
North America	502	1071	330	671	172	400
East Asia	436	1131	298	728	138	403

As a percentage of GDP

	Total trade of region		Total with ROW		Intra bloc trade	
	1980	1990	1980	1990	1980	1990
Europe	41.1	43.9	13.4	12.7	27.7	31.2
North America	15.9	16.9	10.5	10.6	5.4	6.3
East Asia	28.4	27.8	19.4	17.9	9.0	9.9

Table 1 (continued) Measures of Intra-regional trade

A Total Trade

As a percentage of World Trade

	Total trade of region		Trade with ROW		Intra bloc trade	
	1980	1990	1980	1990	1980	1990
Europe	44.4	47.9	16.4	14.4	28.0	33.4
o/w EC	38.1	41.1	18.1	16.7	20.0	24.4
EFTA	6.3	6.8	5.4	5.9	0.9	0.9
North America	16.2	17.6	10.8	11.1	5.4	6.5
East Asia	14.5	18.7	10.4	12.2	4.1	6.6

As a percentage of Regional Trade

	Total trade of region		Trade with ROW		Intra bloc trade	
	1980	1990	1980	1990	1980	1990
Europe	100.0	100.0	36.9	30.2	63.1	69.8
o/w EC	100.0	100.0	47.6	40.5	52.5	59.5
EFTA	100.0	100.0	86.2	86.8	13.8	13.2
North America	100.0	100.0	66.9	63.0	33.1	37.0
East Asia	100.0	100.0	71.9	65.0	28.1	35.0

B Non-Oil Trade

As a Percentage of Total Non-Oil Trade

	Total trade of region		Trade with ROW		Intra bloc trade	
	1980	1990	1980	1990	1980	1990
Europe	48.0	49.3	15.7	14.3	32.3	35.0
North America	16.8	17.6	11.1	11.0	5.7	6.6
East Asia	14.6	18.6	10.0	12.0	4.6	6.6

As a Percentage of Regional Trade

	Total trade of region		Trade with ROW		Intra bloc trade	
	1980	1990	1980	1990	1980	1990
Europe	100.0	100.0	32.7	28.9	67.3	71.1
North America	100.0	100.0	65.7	62.7	34.3	37.3
East Asia	100.0	100.0	68.3	64.4	31.7	35.6

Turning first to the relative positions of the three regions in total trade, in 1990 Europe had trade of $3.2 trillion, compared to trade of around $1.2 trillion for North America and East Asia. With total world trade of $6.8 trillion, this implies that European trade accounted for nearly half of world visible trade in 1990, while North America and the Far East accounted for close to one fifth of trade each. Hence, on the basis of total trade, Europe is around 2.5 times as important as either of the other major trading blocs. However, relative to the other blocs, a much larger part of European trade is accounted for by intra-regional trade; and this contrasting feature between Europe and the other two regions is accentuated further by the inclusion of EFTA countries in the European bloc. On its own EC intra-trade accounts for 60% of its total trade. However, the relatively large trade flows between EC and EFTA countries mean that for Europe as a whole this ratio rises to 70% (compared with around a third for the other blocs). This implies that the dollar value of trade between Europe and the rest of the world is less than that of the EC.(9)

Stripping this intra-regional trade from each region's total trade gives a very different picture of the importance of each of the trading blocs in terms of the size of their extra-regional trade; the effect is to make this amount relatively similar across each region. Europe remains the area with the greatest external trade, but at close to $1 trillion its trade with the rest of the world (ROW) is only 23% greater than that of North America and 16% greater than East Asia. In short, the world contains three potential regional groupings with very similar levels of external trade.

The Table also shows these data as a ratio to GDP, which allows a measure of the relative importance of trade within the different regional economies to be assessed. As might be expected, Europe has the highest ratio of trade to output, while North America has a value well under half of the European level. When it comes to trade with the rest of world, however, Europe is no longer the most open trading bloc. East Asia, with a ratio of 20% of GDP, is the most open region, while the positions of Europe and North America, with ratios of

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(9) Of course, in the case of the EC the rest of the world includes EFTA countries.

14% and 12% respectively, are relatively similar.(10) In addition, measured as a ratio to GDP, extra-regional trade has fallen significantly between 1980 and 1990 in all three regions; by around 20% of the initial value in Europe and East Asia, and 10% in North America.

The degree of openness of these three regional trade blocs to extra-regional trade has implications for the role of the three major world currencies, the dollar, yen and deutschmark which are to a greater or lesser extent the dominant currencies in these regions.(11) To the extent that they represent de facto regional currencies, the effect of changes in these exchange rates on activity depends upon the size of trade between regions. In this respect the relatively closed nature of both the European and North American trade blocs (where the sum of exports and imports currently represents less than 15% of GDP), and the trend away from extra-regional trade which is evident in all three regional groupings, indicates that bilateral exchange rates between the major currencies may be becoming less important in for regional activity. This topic will be discussed further in Section 2(i) below.

The bottom half of Table 1 shows the same data for non-oil trade. As discussed earlier, non-oil trade is a useful measure since it minimises the biases caused by the large fall in real oil prices between 1980 and 1990.(12) Therefore non-oil data are useful in assessing the effect of increasing

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(10) The importance of including the EFTA countries in the European region becomes apparent when we consider the position of the EC and EFTA separately. On its own, the EC has a proportion of trade with the rest of world of 19% of GDP, slightly smaller than East Asia, whereas for Europe as a whole the ratio falls markedly to 14%, much closer to the North American level.

(11) The ERM and plans for EMU have helped the deutschmark become a proxy for most European exchange rates. In North America the position of the United States is so dominant that the dollar is the de facto regional currency. In East Asia there is some evidence that the yen is an increasingly important influence in regional exchange rates [see Frankel (1991b), Tavlas and Ozeki (1992) and the Economist (1989)] although the dollar continues to have an important role.

(12) The trends identified for non-oil trade are generally also true for total trade.

integration in Europe, the moves towards the North American Free Trade Agreement and growing regional association in East Asia on trade patterns.

Measured as a ratio of GDP, total non-oil trade rose over the 1980s in Europe and North America, while falling slightly in East Asia. Intra-regional trade expanded in all three regions, rising by some 1% of GDP in North America and East Asia, and by 3 1/2% of GDP in Europe. By contrast, extra-regional trade fell in Europe and East Asia, while remaining fairly constant in North America. The overall pattern is one of a divergent trend, with intra-regional trade expanding and extra-regional trade stagnating over the decade.(13) There does indeed seem to be some move toward increasing insularity within these three blocs.(14)

Increasing insularity of trade does not necessarily reflect an increasing 'bias' towards intra-regional trade, because interpretation of these results is complicated by so called 'gravity' effects. Assuming that trade between countries depends upon the product of the level of output in the countries concerned, then the overall trade of a fast growing region will expand more rapidly than that of a slower growing region because of its higher growth of output. At the same time, however, its intra-bloc trade will inevitably expand

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(13) Falls in the relative price of commodities other than oil may account for some of this fall in trade with the rest of the world. Appendix Table 3 presents data on non-commodity trade which indicates that extra-regional non-commodity trade, as a ratio to GDP, has generally risen, but at a much lower pace than intra-regional trade. However, since many of the countries being considered are major raw material producers (such as Australia), excluding commodity trade implies excluding a significant part of the normal trade of the regions; for this reason we focus on non-oil trade in the text.

(14) The welfare effect of these divergent trends is unclear. To the extent that it represents the effect of lowered regional tariff rates caused by a customs union, the diversion of trade from (presumably) more efficient external sources to (lower tariffed) internal sources within the region will lower production efficiency (Viner, 1950). On the other hand, lower tariffs also imply more efficient relative consumption prices which raises welfare, leaving the overall effect uncertain (Lipsey, 1960). Finally, as noted by Krugman (1991b), in general equilibrium there is a terms of trade improvement for the customs union relative to the rest of the world. As he notes, this implies that the real losers from a customs union may well be those left out of it.

at a faster rate than its overall trade, because in the case of intra-bloc trade both countries will tend to experience faster growth, whereas for trade outside the bloc only one of the countries is experiencing fast growth. This is particularly important for East Asia which has grown significantly faster than Europe or North America over the 1980s.

To take account of these effects it is necessary to adjust the level of intra-regional trade using a measure of the overall importance of the region in world trade. Accordingly, 'bias' coefficients B were calculated, which take the ratio of intra-regional trade in regional trade as a ratio of regional trade in total world trade. If there were no tendency to trade with other countries which are close geographically, then the bias coefficient would be unity, since regional trade would simply reflect overall trade patterns. Because there is a tendency to such biases in trade, due to factors such as lower transport costs and easier communications, the ratio would be expected to be greater than 1. What is of interest for the analysis is the movement of the index between 1980 and 1990. A rise would imply an increasing bias toward regional trade, a fall would imply a declining bias.

Accordingly, the following statistic was calculated for each region,

$$B = \frac{\text{Intra-regional Trade as a Percentage of Total Regional Trade.}}{\text{Total Regional Trade as a Percentage of World Trade}}$$

Table 2 shows this ratio for 1980 and 1990, and the percentage change over the period. As expected, all three blocs have coefficients of above one, indicating a bias towards intra-regional trade. The ratio is somewhat higher in East Asia and North America than in Europe as a whole, however, direct comparisons of the ratios are complicated by the fact that the ratio is affected by the nature of the blocs.(15)

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(15) For example, since Europe accounts for just under half of total world trade, the upper bound for B for Europe is slightly over 2.

Table 2 Bias Factors in Non-oil World Trade

$$B = \frac{\text{Regional trade as \% total trade}}{\text{Total trade as \% of world trade}}$$

	1980	1990	% change
Europe	1.40	1.44	3.0
EC	1.37	1.44	4.9
EFTA	2.22	1.86	-16.0
North America	2.03	2.12	4.6
East Asia	2.16	1.92	-11.2

Movements in the ratio, on the other hand, are a useful measure of whether underlying trade patterns are becoming more insular or not. Both Europe as a whole and, more surprisingly, North America show some move towards increased insularity of trade over the decade, with rises in the ratio of 3.0 and 4.6%, respectively. The EC shows a larger increase in coefficient than Europe as a whole, presumably reflecting moves toward economic integration. In East Asia, on the other hand, the ratio actually fell over the decade; the rise in intra-bloc trade is actually smaller than might be expected given the rise in relative economic size of the region.(16) It appears that, when gravity effects are taken into account, both Europe and North America show some trend toward greater insularity in trade over the 1980s, while Asia does not. However, the bias coefficients are relatively unstable over the intervening years, making this conclusion somewhat tentative.(17)

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(16) Frankel (1991b) also points out this feature of the data.

(17) We have not developed any formal tests of this statistic.

(i) Trade Within Regions

In addition to looking at trade for a region as a whole, it is also interesting to look at the openness of the individual members of such regional blocs. To the extent that countries trade more or less with the rest of the world, they are likely to be more or less affected by changes in exchange rates.(18) The position of individual members of regional blocs in terms of extra-regional trade is therefore also of interest.

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(18) Other factors, in particular the flexibility of internal factor markets, are also important determinants of this impact of exchange rate changes on the economy.

Table 3 Patterns of Total Trade in the Major Global Trading Blocks 1990

A European economies

	Total trade (% GDP)	Non-Europe Trade (% GDP)	Share of regional trade	European trade as % of total
Europe	47	14	100	69
Belgium	120	24	8	80
Denmark	51	12	2	76
France	38	12	13	67
Germany	51	17	23	67
Greece	42	13	1	70
Ireland	105	25	2	76
Italy	32	11	11	67
Netherlands	92	21	9	77
Portugal	70	15	1	79
Spain	29	9	4	68
UK	42	16	11	63
Austria	57	14	3	76
Finland	39	13	2	67
Iceland	49	14	0	72
Norway	58	15	2	74
Sweden	49	12	4	75
Switzerland	59	17	4	71

B North America

	Total trade (% GDP)	Non-North America Trade (% GDP)	Share of regional trade	North America trade as % of total
North America	20	13	100	37
US	17	13	53	26
Canada	44	14	39	68
Mexico	32	10	9	69

C East Asia

	Total trade (% GDP)	Non-East Asian Trade (% GDP)	Share of regional trade	East Asian trade as % of total
East Asia	32	22	100	34
Japan	18	13	31	25
Hong Kong	260	186	11	28
Indonesia	25	11	6	55
Korea	63	39	12	38
Malaysia	148	68	7	54
Philippines	50	30	2	40
Singapore	380	199	13	48
Thailand	83	46	6	44
Taiwan	78	46	12	40

Table 3 shows total trade and trade with the rest of the world as a percentage of GDP for the countries in the European region.(19) The first thing to note is the similarity in rankings between the relative position of countries in total trade and external trade. By and large countries which do a large amount of trade within Europe also do a lot of external trading.(20) Second, although the ratios of extra-regional trade do vary, from 9% of GDP for Spain to 25% for Ireland, three quarters of the countries, including the four largest, fall in the fairly narrow range 12-17%.(21) Hence, while exchange rate movements between Europe and other regions may have differential effects on European countries, these data indicates that this effect may not be too disruptive.(22)

The results from a similar analysis using data on North America and East Asia are also shown in Table 3. In the case of North America, although Canada and Mexico are considerably more open than the United States in terms of total trade, almost 70% of this trade is with the other economies in North America. As a result, the level of extra-regional trade is relatively similar for all three countries, varying from 10.0% of GDP for Mexico to 14.4% of GDP in the case of Canada.

East Asia shows considerably more diversity than either Europe or North America. As with the European countries, the ranking in terms of total trade is similar to that for extra-regional trade. There is also clear evidence of entrepot trade, particularly in the cases of Hong Kong and Singapore. The variation in openness within those economies (from 11.4% in the case of Indonesia to 199% for Singapore) is much larger than in Europe or North America. Overall,

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(19) These data refer to total trade.

(20) Partial exceptions to this rule are Germany and the United Kingdom, both of which trade rather more with the rest of the world than might be anticipated from the data on total trade.

(21) The high ratios in Belgium and the Netherlands may reflect entrepot trade to some degree.

(22) These aggregate data may, however, obscure very different geographic patterns of trade, which might make different bilateral exchange rates important across countries.

these data support the contention of Schott (1991) that the East Asia is a less promising candidate for a regional trade area than Europe or North America.

3 Capital Mobility

The evidence on trade flows indicates that Europe, North America and (to a lesser extent) East Asia represent relatively closed geographic regions, which have been becoming more closed over time. This section investigates the level of capital mobility, both within these trade blocs and in the world economy as a whole. The regional results indicate the degree to which the regional trading blocs are also developing their own regional capital markets, hence becoming integrated economic units. By comparing them with the world results, it is possible to infer whether changes in regional capital integration represent region specific effects, or more general trends in global financial markets. The world results are also useful in assessing the importance of financial factors in the determination of major exchange rates. The higher the level of overall capital mobility, the more exchange rates will be determined by portfolio preferences, making them less easy to control by policies such as sterilised intervention which have no implications for domestic policy.

There are several reasons for supposing that capital may have become increasingly mobile over the 1980s. The effect of global financial liberalization has had a clear effect in reducing onshore/offshore interest differentials, which probably reflect barriers to the flow of capital between countries.(23) While the apparent ease with which large current account imbalances in the major economies in the 1980s were financed may be indicative of an increasing ability for private capital to flow between nations.

It is these capital flows which provide the foundation for the measure of capital mobility used in this section, namely the correlation between saving and investment across countries. The intuition behind this approach, first proposed

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(23) See Frankel (1991a) and Artis and Bayoumi (1990) for a discussion of this approach to measuring capital mobility. Cooper (1991) contains a chronology of moves towards liberating capital movements in the 1980s.

by Feldstein and Horioka (1980), is that in a world of mobile capital, investment in any country can be financed at the going world real interest rate. In this case, there is no particular reason why the propensity to save and the propensity to invest should be correlated across regions. Hence the null hypothesis is that, if capital is fully mobile, the coefficient produced by a cross-sectional regression of saving on investment across countries, both measured in relation to output, should be zero. A positive coefficient, on the other hand, is indicative of low capital mobility.

This measure of capital mobility is not without its critics. In particular, the finding that saving and investment are significantly correlated across OECD countries, and hence that on this definition international capital mobility is relatively low, has led some to question whether the fundamental assumption of the test, namely that in a world of full capital mobility saving and investment propensities should not be correlated, is correct.(24) However, there are at several arguments supporting the use of saving investment correlations as a measure of international capital mobility. As noted by Dornbusch (1989), if domestic capital markets are segmented then international capital mobility may be low even if international markets are highly integrated. Recent empirical work also indicates that in regimes with high capital mobility (specifically the era of the gold standard and comparisons within the regions of the UK monetary union) saving and investment are indeed uncorrelated.(25) As will be discussed below, a similar pattern is found across Canadian provinces, further supporting the view that saving investment regressions are indeed a useful measure of capital mobility.

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(24) Obstfeld (1986) and Tesar (1988) present models in which saving and investment are highly correlated, even when capital mobility is high. Frankel (1991a) points out the stringent set of assumptions required for the Feldstein Horioka hypothesis to hold.

(25) See Bayoumi (1990) and Bayoumi and Rose (1989).

(i) Capital Mobility Across Regions

Data on saving and investment as a ratio to GDP were collected for sixteen countries in Europe, the three countries in North America and the eleven countries in East Asia.(26) Since the North American region contains only three countries it was not possible to test the correlation of saving and investment across these nations, however, their data were used in the world regressions. It is, however, of some interest to look at saving and investment correlations within a country, if only to confirm that within a financially integrated area saving and investment are indeed uncorrelated, as assumed in the test. For this propose, data on investment and net exports were collected for the eleven Canadian provinces.(27) Saving was calculated by summing the value of investment and net exports. Unfortunately this is only an approximate calculation, since saving is actually equal to the sum of investment and the current account, not investment and net exports.(28) The difference between net exports and the current account is flows of interest, profits, and dividends (IPD) and (largely government) transfers. Unfortunately, both are likely to be large across Canadian regions, and hence the Canadian results should be regarded with some caution.

For each data set a cross-sectional regression of the form

$$(I/Y)_i = \alpha + \beta\,(S/Y)_i + e_i, \qquad \textbf{(1)}$$

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(26) The eleven members of the EC, five EFTA countries, Japan, Hong Kong, Singapore, South Korea, Taiwan, Australia, New Zealand and the four members of ASEAN. For Europe, the US, Canada and Japan the data came from the OECD Annual National Accounts, while for the other East Asian countries (except Taiwan) and Mexico the data came from the World Bank. Data for Taiwan came from national sources. In the case of Hong Kong national saving was not available so domestic saving was used.

(27) No data are readily available on regional saving and investment for the United States or Mexico.

(28) See Atkeson and Bayoumi (1992) for evidence on private flows of IPD in a currency union and Bayoumi and Masson (1991) for evidence on the size of government fiscal flows across Canadian provinces.

was estimated, where I represents national investment, S is national saving, Y is GDP and the subscript i represents different countries or provinces. Hence, the size and significance of the coefficient β, which represents the relationship between saving and investment, will be our measure of capital mobility, with large values indicating low mobility and low values high mobility.

Table 4 Saving and Investment Correlations

Equation $(I/Y)_i = \alpha + \beta\,(S/Y)_i + E_i$

Estimates of β

	Canadian Provinces		Europe		EC		East Asia		All Countries	
1961-65	-.23	(.11)	.90	(.07)**	.87	(.07)**	na		1.09	(.05)**
1966-70	-.38	(.18)	.76	(.11)**	.75	(.14)**	na		.96	(.04)**
1971-75	-.35	(.17)	.72	(.11)**	.66	(.11)**	.79	(.10)**	.93	(.05)**
1976-80	.15	(.18)	.75	(.14)**	.73	(.14)**	.65	(.14)**	.92	(.06)**
1981-85	.14	(.20)	.68	(.15)**	.75	(.24)**	.40	(.14)**	.78	(.07)**
1986-90	-.02	(.07)	.37	(.12)**	.22	(.13)	.41	(.15)**	.64	(.05)**
Number of Observations	11		16		11		11		29	

Notes: Standard errors are shown in parenthesis. A double asterisk indicates the coefficient is significantly different from zero at the 5% probability level. For the 'all country' regressions there were only 21 observations in the 1961-65 and 1966-70 periods. For the East Asian data the last period is 1986-89.

In order to abstract from cyclical effects the data were averaged over successive five year periods. The equation was estimated using weighted least squares, based on relative GDPs. This was done to ensure that small and potentially exceptional regions did not have too large an impact on the results.(29) Ideally, instrumental variables estimation should have been used, to avoid any simultaneity bias in the estimation. Earlier studies, however,

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(29) This was of particular concern in the case of Canadian data, where some of the smaller provinces may well receive relatively large federal fiscal transfers. Unweighted regressions produced generally similar results to the weighted ones.

indicate that the results using instrumental variables are very similar to those using least squares, so the simpler form of estimation was adopted.

The results from these regressions are shown in Table 4, which reports the estimate of the coefficient β (plus the associated standard error) for various regional groupings over six successive five year periods starting with 1961-65 and ending with 1986-90.(30) The first column shows the results for the Canadian provinces. The estimates of β are uniformly small (the largest being -0.38) and insignificantly different from zero. Of the six estimates of β, four are negative and only two are positive. Overall, as might be expected from a currency union with a freely functioning and fully integrated capital market, there is no evidence of a significant correlation between regional levels of saving and investment, the same result as found by Bayoumi and Rose (1992) using UK regional data.

The next column shows the results for sixteen countries comprising the European region. The results show that saving and investment have a significantly positive correlation in all time periods, indicating markedly lower capital mobility within Europe than within Canada. There is also evidence, however, that capital has become more mobile over time, particularly in the second half of the 1980s. The coefficient estimates of β decline steadily, falling from 0.90 (and insignificantly different from 1) in 1961-65 to 0.68 by 1981-85. The 1986-90 data shows a further decline in the coefficient, from 0.68 to 0.37. Given that the associated standard error 0.12, this represents a fall of well over two standard errors. It therefore appears that, even if not fully mobile, capital had become significantly more mobile within Europe in the second half of the 1980s than in earlier decades.

The next column repeats the analysis data on the eleven members of the EC (excluding Luxembourg), to see whether the EC has promoted greater financial integration among its members than has occurred in Europe as a whole. The results indicate little difference in behaviour in the first five data periods; in all

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(30) In the case of the East Asian data the last period only covered 1986-89.

cases the estimated coefficient using the EC data is within half a standard error of the coefficient for Europe as a whole. However, for the 1986-90 period there does indeed appear to be some difference, with the EC regression producing a coefficient (0.22) which is considerably smaller than the one for Europe as a whole, and which is insignificantly different from zero at conventional levels. Hence, there is some evidence that over the last few years the EC countries have moved further towards an integrated regional capital market than has occurred in Europe as a whole.(31) This may well reflect the move towards a single market, one provision of which was the abolition of exchange controls.

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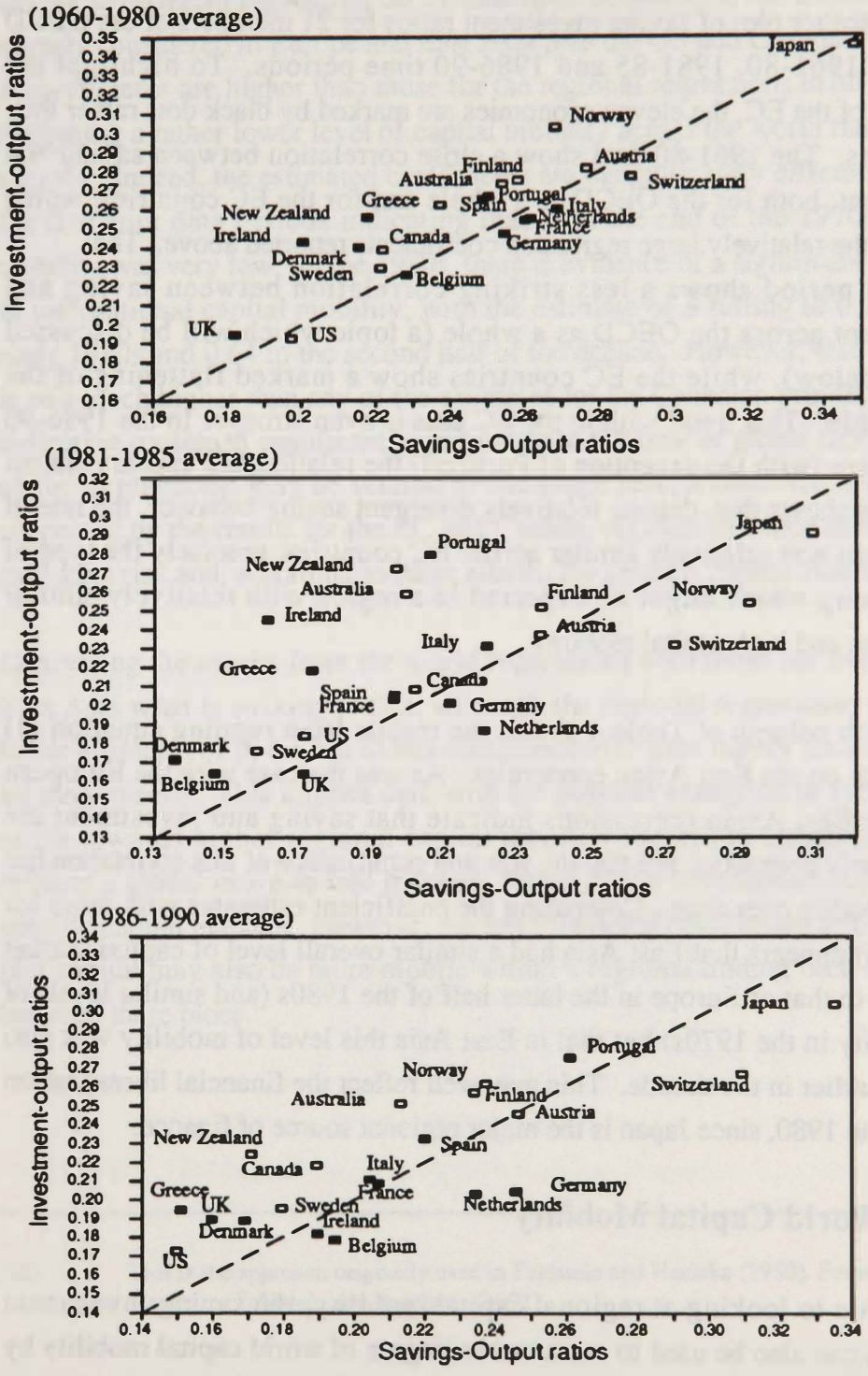
(31) Bhandari and Mayer (1990), looking at data for the EMS, also conclude that capital mobility has fallen rapidly recently in parts of the EC.

Figure 1: Saving-Investment Correlations in 21 OECD Economies



It is instructive to illustrate this change in behavior graphically. Figure 1 shows a scatter plot of saving investment ratios for 21 members of the OECD over the 1961-80, 1981-85 and 1986-90 time periods. To highlight the behavior of the EC, the eleven economies are marked by black dots rather than white dots. The 1961-80 data show a close correlation between saving and investment, both for the OECD as a whole and for the EC countries, which explains the relatively large regression coefficients reported above. The 1981-85 period shows a less striking correlation between saving and investment across the OECD as a whole (a topic which will be discussed further below), while the EC countries show a marked flattening of the relationship. This trend with in the EC data is even stronger in the 1986-90 data, where (with the exception of Portugal) the relationship appears almost flat. This shows that, despite relatively divergent saving behavior, the rate of investment was relatively similar across EC countries, precisely the type of relationship which might be expected in a region with relatively similar economies and high capital mobility.

The fourth column of Table 4 shows the results from running equation (1) using data on the East Asian economies. As was the case with the European data, the East Asian regressions indicate that saving and investment are significantly correlated, but that the size and significance of this correlation has fallen steadily over time. Comparing the coefficient estimates with those for Europe, it appears that East Asia had a similar overall level of capital market mobility to that of Europe in the latter half of the 1980s (and similar levels of immobility in the 1970s) but that in East Asia this level of mobility was also present earlier in the decade. This may well reflect the financial liberalization in Japan in 1980, since Japan is the major regional source of finance.

(ii) World Capital Mobility

In addition to looking at regional capital mobility, the saving investment approach can also be used to measure the degree of world capital mobility by

running the some regressions using data on a wide spectrum of economies.(32) Accordingly, the last column in Table 4 reports the results from running the saving investment regression on 29 industrial economies, the 27 economies already considered in Europe and East Asia plus the US and Canada.(33) The β coefficients are higher than those for the regional regressions in all periods, indicating a rather lower level of capital mobility across the world than within regions. Indeed, the estimated coefficients are insignificantly different from 1 for first four data periods indicating that until the end of the 1970s capital mobility was very low. In the 1980s, there is evidence of a significant increase in international capital mobility, with the estimate of β falling to 0.78 in the early 1980s and 0.64 in the second half of the decade. However, this estimate is still much higher than any of the estimates for the Canadian provincial data, indicating continued significant impediments to the flow of global capital. Part of the explanation may be related to exchange risk, a contention which is supported by the results for the EC and Canada, regimes in which there is less exchange risk and, according to these results, the greatest capital mobility.

Comparing the results from the world regressions with those for Europe and East Asia what is striking is that, although the regional regressions produce lower estimates of β, the fall in this coefficient over time is very similar across all three results. This implies that, with the possible exception of the EC, the move towards higher regional capital mobility identified earlier probably reflects a global move to free markets, rather than a development of region-specific capital markets. However, the lower regional coefficients also indicate that capital may also be more mobile within a regional trading bloc than it is between these blocs.

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(32) This is the approach originally used in Feldstein and Horioka (1980). For more recent results see Feldstein and Bacchetta (1991).

(33) For the first two data periods the 8 East Asian economies could not be included due to lack of data.

4 Implications for Global Exchange Rate Co-ordination

The previous analysis has illustrated two trends in the world economy over the last decade. The first is that while intra-regional trade within the three major economic blocs has been increasing as a ratio to output, extra-regional trade has fallen or at best stagnated. The second is that international capital mobility appears to be increasingly significant both within these regions and across the world. The implications for public policy, and in particular relations between the principal members of these three blocs, will now be explored.

The first point to be made is just how closed these three regions actually are. Total trade with the rest of the world, measured as the sum of exports and imports, represented between 12 and 20% of GDP in 1990. Furthermore, this ratio fell significantly over the 1980s in all three regions (although some of this reduction simply reflects the lower price of oil). As a result, exchange rates are becoming less important influences on real activity between the regions.

This is best illustrated with an example. Assume that the world is only made up of three regions, Europe, America and Asia, with Europe and America being twice the size of Asia. Trade is balanced and symmetric, with exports to the other blocs representing 10% of output in Asia and 6% in the other two blocs. Finally, assume that the price elasticity of both exports and imports is 0.75, and that there is full pass through of exchange rate changes. In these circumstances, a 10% real appreciation of the deutschmark against the other currencies results in a fall in European output of only 0.4%, with American and Asian output rising by 0.26 and 0.38%, respectively. Similarly, a 10% real appreciation of the yen against the other two currencies lowers Asian output by 0.75%, while raising American and Europe output by less than 0.2%. Hence, reasonably large movements in G3 exchange rates have relatively little impact on activity between regions, particularly in the case of Europe and America. Since the gains from exchange rate co-ordination depend upon the size of spill-over effects on other countries, this inevitably implies smaller gains from co-ordination.

This can be contrasted with the position of the average country within Europe, where exports make up over 20% of GDP. In these circumstances, a 10% real appreciation in the real exchange rate against all trading partners, including those within Europe, would lower output by over 1 1/2% of GDP. The increasing importance of intra-regional trade within Europe, and hence the increasing importance of intra-European exchange rates on activity, are clearly one explanation for the willingness of countries to belong to the Exchange Rate Mechanism (ERM) in Europe, and to moves towards European Monetary Union (EMU), as policy makers face a choice between targeting a domestic variable or the exchange rate.(34) A further advantage is the existence of much clearer implied rules for monetary policy implementation than would appear feasible within the G3; the importance of the Bundesbank in determining ERM monetary policy is backed up not only by its anti-inflationary reputation but also, as was seen in Table 3a, by a share of intra-regional trade which is over 75% as large again as France, the next largest country in intra-European trade.(35) In contrast, the similar size of trade with the ROW of the three large global blocs means that co-ordination of policy would inevitably need to be a great deal more symmetric and correspondingly more complex.

At the same time that the regional insularity of trade is making G3 exchange rates less important for real activity between the major economic regions, increasing international capital mobility is presumably making them more responsive to changes in international portfolio preferences. This makes it less easy to control exchange rate movements by policies which have a minimal effect on domestic monetary policy, such as sterilised intervention, since any policy which attempts to control exchange rates without changing domestic policy must rely on capital market imperfections to achieve its aims.(36) Of

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(34) Of course, some of the causation may have gone the other way, with more stable exchange rates encouraging greater integration.

(35) The US and Japan dominate intra-regional trade within their respective blocs to an even greater extent.

(36) As well as a signalling effect, sterilised intervention does have portfolio effects, but in practice these changes are small (Frankel and Dominguez, 1990). Obstfeld (1990) in a study of the effect of intervention over the 1985-87 period concludes that

course, this does not mean that governments cannot control exchange rates. Even with high capital mobility it is possible to operate a fixed exchange rate system between economies, but, as recent events in the ERM demonstrate, only by dedicating economic policy wholeheartedly to the maintenance of the exchange rate parity.

Table 5 Variability in effective exchange rates in the 1980s

(standard deviation of difference of the quarterly logarithmic rate)

	1980 Q1 - 1984 Q4	1985 Q1 - 1991 Q4
ECU	0.028	0.038
Yen	0.035	0.043
Dollar	0.029	0.042

To the extent that the G3 economies are not willing to subordinate their monetary policy to maintaining the value of the exchange rate, and without artificial impediments to capital movements being introduced,(37) it appears unlikely that policy will have much control over the major exchange rates. Indeed, the combination of low integration in trading patterns, implying a low sensitivity of the current account to changes in G3 exchange rates, and higher capital mobility, and hence increased sensitivity to portfolio preferences, may well imply increased volatility between the major exchange rates.(38) There

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intervention may only have been important when supported by the prompt adjustment of monetary policy or when other events have altered market sentiment.

(37) Such as the transaction tax propose by Tobin (1978).

(38) For a model of the relationship between trade blocs and exchange rates see Canzoneri (1982).

does appear to be some evidence for this effect. Table 5 shows the variance of the nominal effective value of the dollar, ecu,[39] and yen measured by the standard deviation of the change in the logarithm of the rate. In all three cases there is a rise in volatility between the early 1980s and the second half of the decade.[40]

Should this volatility be of concern to policy makers? Several authors, notably Williamson and Miller (1987), have argued that exchange rates are too volatile, and that this volatility has, since the collapse of Bretton Woods, led to significant misalignments of exchange rates from their equilibrium levels leading to adjustment costs in the tradeables sector and wider buy-sell spreads on forward exchange markets.[41] Thus it is argued that exchange rates should be limited to target zones round the Fundamental Equilibrium Exchange Rate (FEER), where the FEER is the exchange rate that keeps the current account equal to the value of underlying capital flows in the trade cycle, given the country is pursuing internal balance.[42] The relatively limited integration of the three regional trade blocs and rising international capital mobility argue against such a proposal. Increasing insularity of regional trade implies that domestic activity is becoming less responsive to G3 exchange rates, thus greater shifts in exchange rates may be required to achieve full equilibrium, while increasingly open international capital markets make it less easy to define underlying capital flows (Artis and Bayoumi, 1990).

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(39) Estimated by taking weighted average of the effective exchange rate of a basket of European currencies against the three non-European members of the G7.

(40) This rise in volatility has occurred in spite of the Plaza and Louvre accords of 1985 and 1987, when G5 officials attempted to move towards a more controlled exchange rate regime between the major currencies.

(41) The available evidence indicates that the effect of volatility on average levels of trade is relatively small both theoretically and empirically (Gagnon, 1989; Gotur, 1985; International Monetary Fund, 1984).

(42) Williamson has suggested bands of 10% around the FEER would be necessary, in part reflecting the imprecision with they are estimated and also to allow reasonable fluctuations of exchange rates within these bands. Wright (1992) makes the pursuit of internal balance more explicit by also defining the SEER, the exchange rate which implies equilibrium in the supply side of the economy.

This does not mean there is no role for international policy co-ordination across the three largest industrial countries. As long as spill over effects exist across the major countries, co-ordination will be beneficial. But the insularity of regional trade underlines the point made elsewhere (Frenkel, Goldstein and Masson, 1991) that, in a world with three major economic powers, a sensible policy is for each to maintain domestic balance (with due regard for spill over effects in other countries) rather than explicitly adopting an external target.

5 Conclusions

Putting all of this together, what can be said about current economic relations? As far as trade in goods goes, there does appear to be some evidence that the world is moving toward three major regional trading blocs, each with relatively limited trade with the outside world. At the same time, international capital mobility appears to have been significantly higher in the 1980s than in earlier decades.

Looking to the future, it seems likely that, in the absence of a large cut in multi-lateral trade barriers such as those produced by a wide-ranging GATT agreement, these trends will continue. In trade, moves to EMU imply steadily greater European integration. In North America the probable success of a North American Free Trade Agreement (NAFTA) is likely to increase intra-regional trade, while continued fast growth in East Asia is likely to increase regional trade insularity, even in the absence of moves towards a free trade zone. At the same time the trend toward greater integration in international capital markets also appears likely to continue. Deregulation of financial markets continues, and this in turn implies a decreasing ability to separate exchange rate policy from domestic monetary policy. These trends imply that the macro-economic effect of movements between the three major exchange rates on the regional economies are likely to continue to diminish, as will the already limited ability of policy makers to influence these exchange rates without altering domestic policies.

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Appendix Table 1 Measures of Intra-regional Total Trade

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
(In billions of US dollars)											
Total Trade of Region											
Europe	1,695	1,525	1,462	1,418	1,448	1,523	1,835	2,228	2,489	2,673	3,210
o/w EC	1,456	1,310	1,257	1,217	1,241	1,304	1,565	1,901	2,127	2,290	2,755
EFTA	239	215	205	201	207	219	270	328	362	383	455
North America	619	676	617	631	747	766	784	879	1,019	1,112	1,183
East Asia	503	548	519	538	600	590	639	782	962	1,062	1,163
W.Australia and New Zealand	555	604	574	587	656	647	697	847	1,041	1,153	1,257
Intra Block Trade											
Europe	1,070	927	908	899	915	978	1,249	1,546	1,725	1,841	2,242
o/w EC	764	665	656	647	655	701	895	1,112	1,249	1,341	1,638
EFTA	33	29	28	27	28	29	38	46	49	51	60
North America	205	233	210	233	283	293	283	315	370	407	438
East Asia	118	130	125	135	153	146	165	221	291	328	362
W.Australia and New Zealand	156	174	168	175	200	192	210	273	359	406	440
Trade with Rest of the World											
Europe	625	598	554	519	533	545	587	682	763	831	968
o/w EC	693	645	601	570	586	603	670	789	878	949	1,117
EFTA	206	186	177	174	179	190	232	281	313	332	395
North America	414	442	407	397	464	473	501	564	649	704	745
East Asia	385	418	394	403	447	445	474	561	671	734	801
W.Australia and New Zealand	399	430	407	411	456	455	486	574	683	747	817
(In percent of GDP)											
Total Trade of Region											
Europe	48.8	48.8	48.7	48.6	51.6	52.4	46.2	45.3	45.6	48.3	46.9
o/w EC	47.6	47.8	47.8	47.6	50.8	51.5	45.1	44.3	44.6	47.4	46.0
EFTA	57.4	55.8	54.8	55.2	57.4	58.6	53.5	52.3	52.3	54.3	52.9
North America	19.6	18.9	17.0	16.3	17.4	16.7	16.5	17.2	18.3	18.5	18.7
East Asia	36.9	36.1	35.8	34.6	36.1	34.0	26.6	27.0	27.6	29.8	31.2
W.Australia and New Zealand	36.1	35.2	35.0	33.7	35.2	33.7	26.8	27.1	27.5	29.6	30.9
Intra Block Trade											
Europe	30.8	29.7	30.2	30.8	32.6	33.7	31.4	31.4	31.6	33.3	32.8
o/w EC	24.9	24.3	25.0	25.3	26.8	27.7	25.8	25.9	26.2	27.7	27.4
EFTA	7.8	7.6	7.5	7.4	7.6	7.8	7.4	7.4	7.1	7.2	7.0
North America	6.5	6.5	5.8	6.0	6.6	6.4	5.9	6.2	6.6	6.8	6.9
East Asia	8.6	8.6	8.6	8.7	9.2	8.4	6.9	7.6	8.3	9.2	9.7
W.Australia and New Zealand	10.1	10.1	10.2	10.1	10.7	10.0	8.1	8.7	9.5	10.4	10.8
Trade with Rest of the World											
Europe	18.0	19.1	18.5	17.8	19.0	18.8	14.8	13.9	14.0	15.0	14.1
o/w EC	22.6	23.5	22.9	22.3	24.0	23.8	19.3	18.4	18.4	19.6	18.7
EFTA	49.6	48.2	47.3	47.9	49.7	50.8	46.0	44.9	45.2	47.1	46.0
North America	13.1	12.4	11.2	10.2	10.8	10.3	10.5	11.1	11.7	11.8	11.8
East Asia	28.2	27.5	27.2	25.9	26.9	25.6	19.7	19.4	19.4	20.6	21.5
W.Australia and New Zealand	25.9	25.1	24.8	23.6	24.5	23.7	18.7	18.3	18.0	19.2	20.1

Appendix Table 2 Measures of Intra-regional Non-oil Trade

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
(In billions of US dollars)											
Total Trade of Region											
Europe	1,430	1,260	1,216	1,194	1,226	1,300	1,679	2,067	2,352	2,515	3,002
o/w EC	1,226	1,077	1,042	1,023	1,048	1,110	1,430	1,762	2,011	2,158	2,582
EFTA	204	182	174	172	178	190	249	304	341	357	420
North America	502	549	505	531	642	668	717	802	946	1,021	1,071
East Asia	391	427	406	432	493	491	573	708	890	975	1,046
W.Australia and New Zealand	436	475	453	474	541	539	624	767	961	1,058	1,131
Intra Block Trade											
Europe	963	817	800	789	802	862	1,165	1,462	1,653	1,762	2,134
o/w EC	691	589	583	572	579	622	839	1,057	1,203	1,294	1,574
EFTA	31	27	26	24	25	27	36	43	46	48	54
North America	172	197	171	194	242	252	258	288	344	377	400
East Asia	106	115	109	117	133	126	152	205	276	310	337
W.Australia and New Zealand	138	151	144	150	171	163	190	250	335	378	403
Trade with Rest of the World											
Europe	467	443	416	405	424	438	514	605	698	754	868
o/w EC	536	488	459	450	469	488	591	705	807	864	1,007
EFTA	173	155	149	147	153	163	213	261	295	310	366
North America	330	352	334	337	400	416	459	514	601	645	671
East Asia	285	312	297	315	361	365	421	503	614	665	710
W.Australia and New Zealand	298	324	309	324	370	376	434	517	627	680	728
(In percent of GDP)											
Total Trade of Region											
Europe	41.1	40.3	40.5	40.9	43.7	44.8	42.2	42.0	43.1	45.4	43.9
o/w EC	40.1	39.3	39.6	40.0	42.9	43.9	41.2	41.1	42.2	44.6	43.1
EFTA	49.1	47.3	46.6	47.2	49.4	50.7	49.2	48.6	49.3	50.7	48.9
North America	15.9	15.4	13.9	13.7	14.9	14.6	15.1	15.7	17.0	17.0	16.9
East Asia	28.7	28.1	28.0	27.8	29.7	28.2	23.9	24.4	25.5	27.3	28.1
W.Australia and New Zealand	28.4	27.7	27.6	27.2	29.0	28.0	24.0	24.5	25.4	27.2	27.8
Intra Block Trade											
Europe	27.7	26.1	26.7	27.0	28.6	29.7	29.3	29.7	30.3	31.8	31.2
o/w EC	22.6	21.5	22.2	22.4	23.7	24.6	24.2	24.6	25.2	26.8	26.3
EFTA	7.4	7.0	6.9	6.7	6.9	7.1	7.0	6.9	6.7	6.8	6.3
North America	5.4	5.5	4.7	5.0	5.6	5.5	5.4	5.7	6.2	6.3	6.3
East Asia	7.8	7.6	7.5	7.5	8.0	7.2	6.3	7.1	7.9	8.7	9.0
W.Australia and New Zealand	9.0	8.8	8.8	8.6	9.2	8.5	7.3	8.0	8.8	9.7	9.9
Trade with Rest of the World											
Europe	13.4	14.2	13.8	13.9	15.1	15.1	12.9	12.3	12.8	13.6	12.7
o/w EC	17.5	17.8	17.5	17.6	19.2	19.3	17.0	16.4	16.9	17.9	16.8
EFTA	41.7	40.3	39.8	40.5	42.5	43.6	42.2	41.7	42.6	44.0	42.6
North America	10.5	9.9	9.2	8.7	9.3	9.1	9.6	10.1	10.8	10.8	10.6
East Asia	20.9	20.6	20.5	20.3	21.7	21.0	17.5	17.4	17.6	18.6	19.1
W.Australia and New Zealand	19.4	18.9	18.8	18.6	19.8	19.6	16.7	16.5	16.5	17.5	17.9

Appendix Table 3 Measures of Intra-regional Non-primary Trade

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
(In billions of US dollars)											
Total Trade of Region											
Europe	1,104	977	953	935	960	1,032	1,359	1,688	1,921	2,062	2,495
o/w EC	938	827	807	792	813	873	1,146	1,426	1,629	1,756	2,130
EFTA	165	150	146	143	147	159	213	262	292	306	365
North America	363	411	387	408	507	546	594	665	781	845	891
East Asia	291	331	316	341	395	399	476	589	735	808	880
W.Australia and New Zealand	317	359	344	365	424	429	507	625	781	862	938
Intra Block Trade											
Europe	763	646	637	627	637	691	949	1,199	1,355	1,449	1,776
o/w EC	538	457	454	445	450	488	667	848	967	1,046	1,289
EFTA	26	23	22	21	21	23	31	38	40	41	47
North America	132	157	138	156	200	212	216	241	288	315	335
East Asia	78	88	83	91	104	99	122	167	229	260	286
W.Australia and New Zealand	95	109	104	109	127	122	145	193	263	300	325
Trade with Rest of the World											
Europe	341	332	316	308	323	341	409	489	566	613	718
o/w EC	400	370	353	347	363	385	478	578	661	710	841
EFTA	140	127	124	122	126	137	182	224	252	265	318
North America	231	254	249	252	308	334	377	424	493	530	557
East Asia	213	243	233	250	291	300	354	422	507	548	594
W.Australia and New Zealand	221	250	241	255	297	307	363	431	518	563	612
(In percent of GDP)											
Total Trade of Region											
Europe	31.8	31.3	31.7	32.0	34.2	35.5	34.2	34.3	35.2	37.2	36.5
o/w EC	30.7	30.2	30.7	31.0	33.0	34.5	33.0	33.2	34.2	36.3	35.6
EFTA	39.8	38.9	39.0	39.3	40.9	42.7	42.2	41.8	42.2	43.4	42.5
North America	11.5	11.5	10.7	10.5	11.8	11.9	12.5	13.1	14.0	14.1	14.1
East Asia	21.3	21.8	21.8	21.9	23.8	23.0	19.8	20.3	21.0	22.6	23.6
W.Australia and New Zealand	20.6	20.9	21.0	20.9	22.7	22.3	19.5	19.9	20.6	22.1	23.1
Intra Block Trade											
Europe	21.9	20.7	21.2	21.5	22.7	23.8	23.9	24.4	24.8	26.2	26.0
o/w EC	17.6	16.7	17.3	17.4	18.4	19.3	19.2	19.8	20.3	21.6	21.5
EFTA	6.2	5.9	5.8	5.7	5.8	6.1	6.1	6.0	5.8	5.8	5.5
North America	4.2	4.4	3.8	4.0	4.6	4.6	4.5	4.7	5.2	5.3	5.3
East Asia	5.7	5.8	5.8	5.8	6.3	5.7	5.1	5.8	6.5	7.3	7.7
W.Australia and New Zealand	6.2	6.3	6.3	6.3	6.8	6.3	5.6	6.2	6.9	7.7	8.0
Trade with Rest of the World											
Europe	9.8	10.6	10.5	10.6	11.5	11.7	10.3	9.9	10.4	11.1	10.5
o/w EC	13.1	13.5	13.4	13.6	14.9	15.2	13.8	13.5	13.9	14.7	14.0
EFTA	33.6	32.9	33.1	33.6	35.0	36.6	36.1	35.8	36.5	37.7	37.0
North America	7.3	7.1	6.9	6.5	7.2	7.3	7.9	8.3	8.9	8.9	8.8
East Asia	15.6	16.0	16.1	16.1	17.5	17.2	14.7	14.6	14.5	15.4	16.0
W.Australia and New Zealand	14.4	14.6	14.7	14.7	15.9	16.0	13.9	13.8	13.7	14.4	15.1

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