

TRENDS IN GREECE'S CURRENT ACCOUNT AND TRADE

1. Introduction

Since its entry into the European Community Greece's external adjustment has been marked by two serious balance of payments crises, both of which led to Community support conditional upon stabilization measures. The timing of the second crisis, coming so soon after the first, is worrying because it indicates that the adjustment measures undertaken have been insufficient; as a result, Greece's external finance has continued to be vulnerable to adverse expectations. This annex reviews the character of the country's balance of payments, and some evidence confirming that expansionary financial policies are at the background of actual and potential difficulties.

Greece is one of the four least industrialized Member States in the Community⁽¹⁾ and the one with the greatest need to close the gap and accelerate the pace of convergence with the rest of the Community. Of the several indicators which attest to Greece's status in this group is the pattern of its external trade. Broadly speaking, Greece specializes in traditional exports, and imports goods with high content in technology and human capital. The trade deficit has widened especially in the course of the 1980s, coinciding with Greece's membership of the European Community. At the same time, other items in the balance of payments have recorded growing surpluses offsetting to some extent the commercial trade deficit. Seen from the perspective of some thirty years, Greece's trade has been influenced by the increased openness of the economy, and especially by its membership of the European Community since 1981, as well as by relative demand growth in the domestic and in the international economy. However, it appears that the country's supply performance has been poor, mirroring the overall decline in output potential noted from the mid-1970s onwards and particularly in the 1980s. The evidence examined in this annex indicates that Greece has followed a path of specialization in its international trade which, although to some extent a natural outcome of the country's relative factor supplies, at the same time suggests absence of dynamism and innovation. This could have important implications not only for the country's ability to grow without balance of payments strains necessitating Community support, but also for its prospects to benefit in the emerging specialization in the Community.

(1) The others are Ireland, Portugal and Spain.

II. Greece's Current Account

II.A Current Account Trends

Greece's current account developments, shown in Table IV.1, have been characterized over most of the post-war period by relatively large deficits in merchandise trade partially offset by surpluses in the balance of invisibles. The trade balance deteriorated substantially through to the mid-1980's while the invisibles balance showed a clear improvement in the second half of the 1980s. The current account deficit was largest in the early part of the last decade culminating in a record deficit of 9.8% of GDP in the crisis year of 1985 when the trade deficit also reached record levels at 18.8% of GDP.

Table IV.2 presents data on Greece's trade. Foreign trade expanded steadily up to 1985 bringing the degree of openness (exports plus imports as a percent of GDP) of the Greek economy from a low 23.4% in 1970 to a maximum of 44.4% in 1985; but then it fell back to 37.2% in 1990. The increase in openness up to 1985 was accompanied by a slow but sustained improvement in the relative competitiveness as indicated by the rise in the export/import ratio to a maximum 45.1% in 1984 from a low 30.4% in 1973. However, because of the large difference in the absolute levels, the faster rise of exports did not prevent the trade deficit from widening. On the contrary when in the second part of the 1980s foreign trade declined relative to GDP the merchandise balance showed a certain improvement.

The evolution of the balance of invisibles, shown in Table IV.3, is dominated by a limited number of important items: tourism, emigrant remittances, shipping receipts, and, since 1981, net transfers from the EC. While shipping and private transfers from abroad show a declining trend over the sample period, tourism's share fluctuates around 25% and transfers from the EC show, naturally, a fast rising trend.

The historical profile of the balance of payments and its components is presented in Graph IV.1. In the post-1978 period a widening trade deficit has been only partially financed by invisible surpluses, with the result that the current account balance followed a trend deterioration which peaked in 1985; this was then succeeded by a sharp reversal associated with the 1985/87 stabilization programme. After 1988 the deterioration resumed to reach another peak of USD 3.5 billion in 1990, reflecting the large trade deficit (USD 12.3 billion) recorded last year. There are good prospects that the current account deficit will be contained significantly this year as a result of the current stabilization programme accompanying the balance of payments loan granted by the Community to Greece.

Graph IV.2 presents a decomposition of the balance on invisibles into the service balance and the balance on transfers. The former has weakened notably in the 1980s, while the balance on transfers has shown substantial strength since the beginning of the last decade. This reflects the importance of Community transfers, and is suggestive of Greece's dependence on these transfers to finance its balance of payments adjustment without disruptions in its international financial relationships.

Table IV.1
Trade, Invisibles, and Current Account Balances
(in % of GDP)

Period average	Trade balance	Invisibles balance	Current balance
1971-75	-14.4	9.5	-4.9
1976-80	-15.3	10.9	-4.4
1981-85	-16.7	10.1	-6.6
1986-90	-15.8	12.0	-3.8
1970-90	-15.3	10.5	-4.8

Source : Commission services

Table IV.2
Foreign Trade Trends
(% GDP)

Period average	Exports	Imports	Trade balance	Openess	Export/Import ratio (in %)
1971-75	7.7	22.1	-14.4	29.0	34.7
1976-80	9.9	25.2	-15.3	35.0	39.3
1981-85	12.2	28.9	-16.7	41.2	42.4
1986-90	11.1	26.9	-15.8	33.0	41.3
1970-90	10.1	25.4	-15.3	35.4	39.3

Source : Commission services

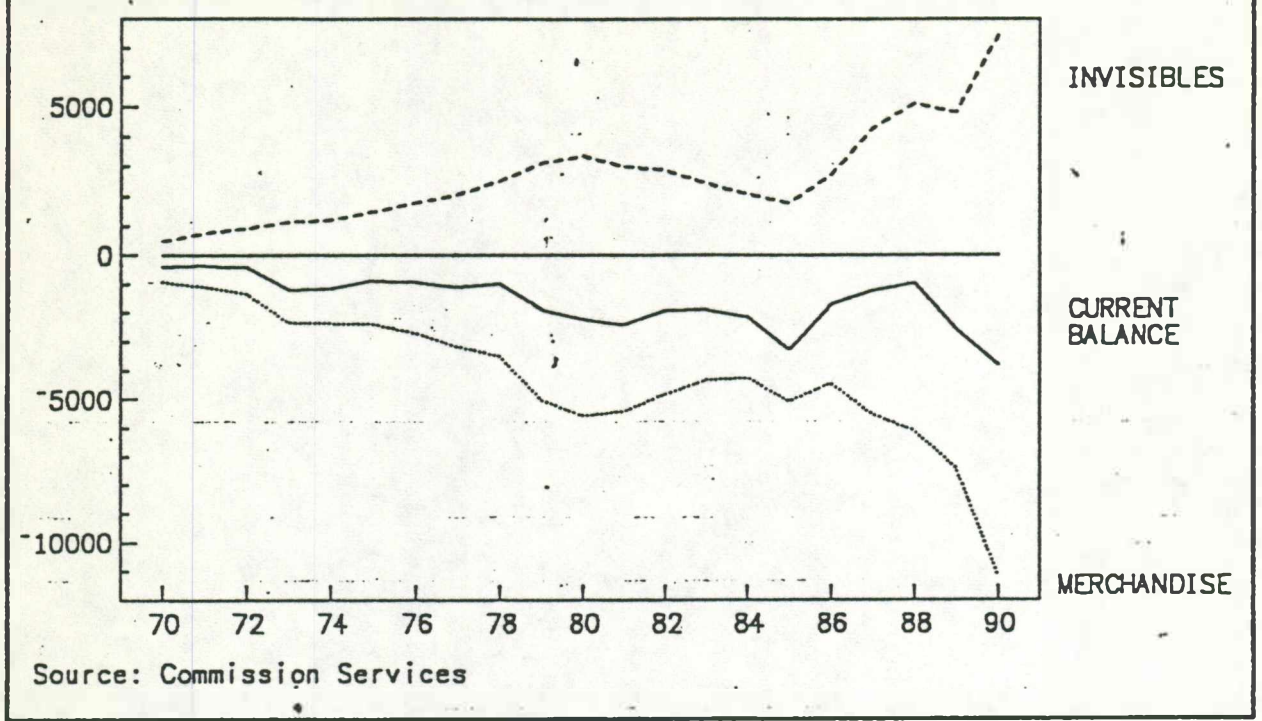
Table IV.3
Invisible Receipts - Principal Items in % of Total

Period average	Tourism	Shipping	Emigrants remittances	Net EEC transfers
1971-75	22.3	29.6	31.4	0.0
1976-80	27.9	28.4	22.1	0.0
1981-85	25.6	23.9	16.7	11.4
1986-90	23.5	14.0	15.1	21.5
1970-90	24.6	24.2	22.1	16.5*

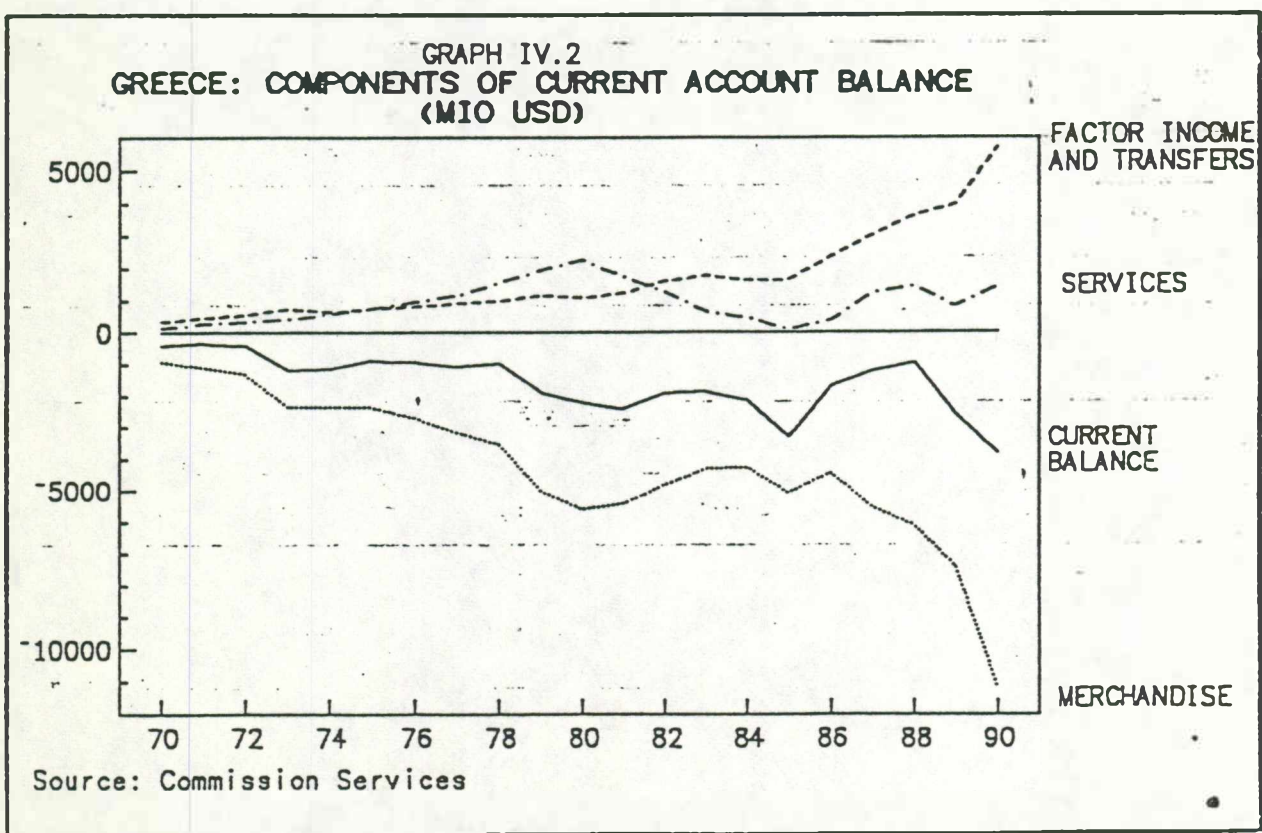
* 1981-90

Source : Commission services

GRAPH IV.1
GREECE: COMPONENTS OF CURRENT ACCOUNT BALANCE
(MIO USD)



GRAPH IV.2
GREECE: COMPONENTS OF CURRENT ACCOUNT BALANCE
(MIO USD)



Clearly, Greece's external adjustment would have been substantially more difficult if transfers from the Community were not available. Even though in their absence the adjustment path would have been along a different trajectory, it is also worth noting that, by rising from 0.4% of GDP in 1981 to 4.8% in 1989, they have provided an important source of funds easing the foreign exchange constraint.

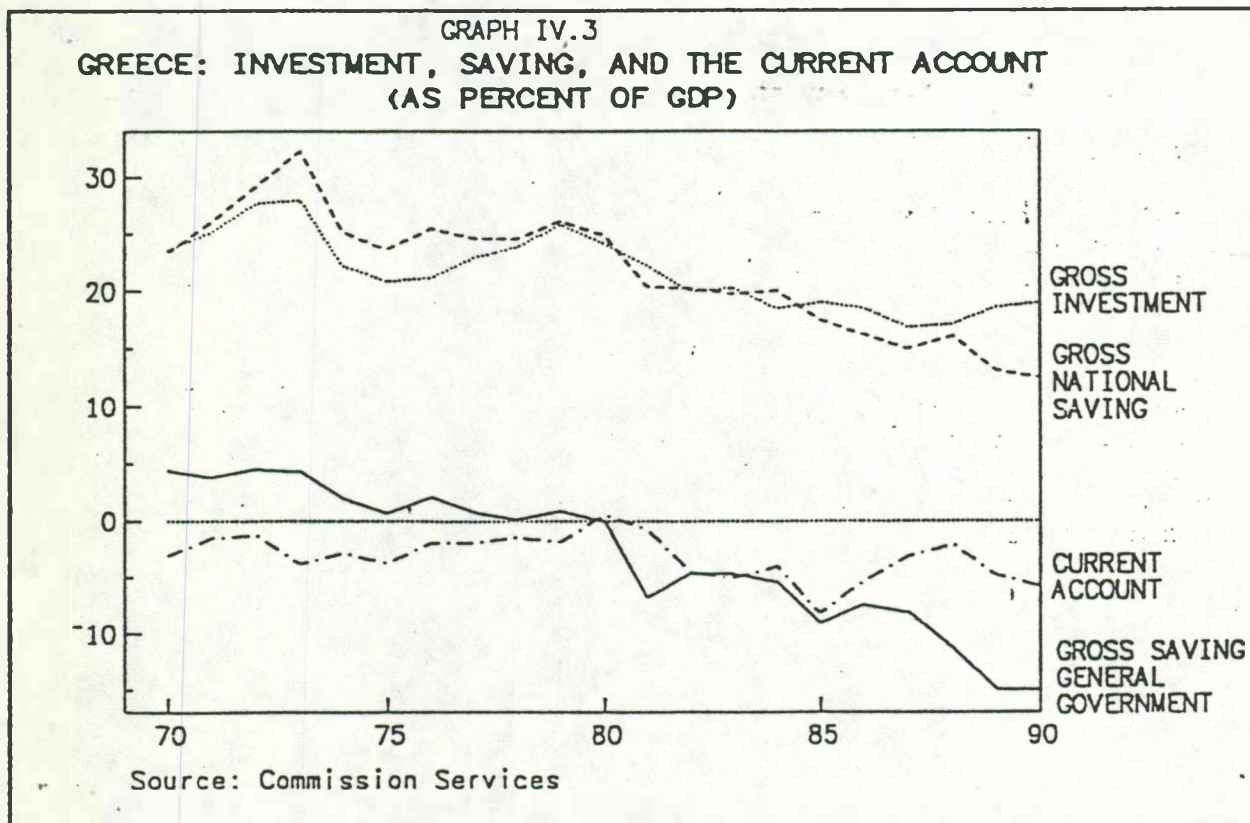
An important characteristic of Greece's external adjustment in the 1980s has been the character of international capital flows and the rise in international indebtedness. In the ten years prior to 1981 the mean value of external central government debt to GDP was 6.1%; from 1981 onwards international indebtedness has been rising at a very rapid pace. Thus, in 1986 the ratio of external debt/GDP was 23.5%, compared to 6.5% in 1980; in 1990 this ratio had fallen back to 19.5% (the ratio of total gross external public debt/GDP was 31.9% in 1990). These developments indicate that debt-creating capital flows have dominated the capital account during the last decade, a fact which stands in sharp contrast to the experience of both the 1960s and the 1970s when international indebtedness remained a stable proportion of GDP. The principal debt-creating actor in the 1980s has been the public sector.

External borrowing by the public sector rose steadily relative to GDP up to the middle of the decade, peaking at 7.1% in 1985. In subsequent years it declined to 0.6% of GDP in 1989, but rose once more to 2.3% in 1990. These developments have hardly been consistent with one key objective of the 1985/87 stabilization programme, that of stabilizing the absolute value of Greece's international debt. Some modest containment did take place during the implementation of that programme but it made little difference to the sharply rising path of international indebtedness, as subsequent events have shown; in 1991 it is estimated that Greece's international debt will reach over USD 22 billion.

Public sector borrowing has also been an important component of the strength of the basic balance recorded in the 1980s. A deficit equivalent to 2.2% of GDP in 1981, and smaller deficits in 1982 (1.7%), 1984 (1.1%) and 1985 (1.5%) have been recorded, but in the remaining years the basic balance has registered surpluses (the basic balance is IFS line 77c.d). However, when only the current account and direct investment flows are used as an indicator of the sustainability of balance of payments trends, deficits are recorded throughout the 1980s, peaking at 8.5% of GDP in 1985 but easing subsequently. To a large extent this is a reflection of the small direct investment inflows, which averaged USD 203 million in the 1970s and USD 581 million in the 1980s; but, in addition, this points to the prominence of public sector international borrowing. Finally, private short-term capital flows, principally in the form of foreign currency deposits, have risen in recent years due to the high interest rates provided by the authorities. However, these have been volatile declining substantially both in 1985 and in 1988, periods of uncertainty over the course of macroeconomic policy and dominated by depreciation expectations; during the rest of the decade they have shown greater stability.

11.8 Saving, Investment, and the Current Account

The current account is an intertemporal concept, allowing domestic residents to optimize the flow of their consumption by borrowing from, or lending to, the international community. As such, the current account represents the difference between domestic expenditure and the availability of domestic saving financing spending. A key factor in national saving is the behaviour of the public sector; given private sector incentives to save and/or invest, excess demand for savings on the part of the public sector is manifest in current account deficits. While it may be argued that such deficits have a tendency to be reversed when arising from private sector international borrowing, when the source of the deficit is public sector dissaving external adjustment will be achieved only if the fiscal expansion is contained; such fiscal expansions tend to produce widening current account deficits which also have a permanently vulnerable character with respect to shifting expectations.



In the case of Greece, moderate and sustainable current account deficits were recorded between the beginning of the 1970s up to the beginning of the 1980s. During this period gross national saving averaged around 26% of GDP while gross fixed capital formation amounted to around 24% of GDP (the data do not add up entirely to produce the implied current account surplus during this period). The current account deficit in the period 1970-1980 averaged to 2% of GDP and fluctuated within a narrow range.

Graph IV.3 shows that in the post-1980 period a sharp movement of the public sector into dissaving was associated with declining national saving, albeit at a slower rate, and also an easing trend in gross fixed capital formation. It is not possible to construct Greece's capital finance account to show the correspondence between private, public, and international saving and investment spending as data for private saving are not available. However, the decline in national saving, from a mean value of 26% of GDP in the 1970s to a mean value of 17.5% of GDP in the 1980s has coincided with a sharp movement in public sector (general government) saving from 2% of GDP in the 1970s to -8.8% in the 1980s. The graph clearly demonstrates these developments; it also shows that the movement into public sector dissaving in the early 1980s coincided with a deterioration in the current account deficit. If investment spending had stayed at its level of the late 1970s during the 1980s, the current account deterioration would have been even sharper; in a sense, the trend decline in the share of investment in GDP has been a supporting factor to the external adjustment occurring under the pressure of an expanding public sector.

The developments depicted in Graph IV.3 suggest that Greece's fiscal policy is highly correlated with current account movements. Indeed, the rate of accumulation of international indebtedness, which has grown rapidly in the course of the 1980s, has been determined largely by the rate of the fiscal expansion⁽²⁾. It is evident that private saving has not increased to the extent required to contain the decline in national saving by offsetting the emergence of public sector dissaving. This may be associated with the increased regulation of economic activity and the intensification of government intervention, or with the continuing high inflation, or with financial repression. From a longer-term perspective, restoration of a sustainable current account requires that policies encouraging national saving must be put in place; this is the more so since the country's investment needs, if they are to be met, will require continuing reliance on international savings. Restoration of national saving, in turn, requires first and foremost fiscal adjustment.

(2) See G. Alogoskoufis (1989): "Macroeconomic Policy and the External Constraint in the Dependent Economy: the Case of Greece", Discussion Paper no. 3, Birkbeck College, University of London, February.

11.B Financial Variables and the Current Account

This behaviour of the current account deficit has put Greece's holdings of international reserves in the 1980s under serious strains. The ratio of the flow of import payments to the stock of international reserves excluding gold, which had a mean value of 17.9% in the period 1960/69, and 19.9% in the next ten years, rose to a mean value of 91% in the 1980s. This ratio peaked at 174.4% in 1985⁽³⁾. This is only one indicator of the difficulties Greece encountered during the past decade and is, perhaps, an incomplete picture of the circumstances accompanying the balance of payments loans granted in its favour. Other principal factors are the behaviour of the capital account as well as of invisible receipts, both of which have been subject to shifts in confidence in the course of economic policy in Greece. Although one can only point to anecdotal, but not strictly rigorous, evidence on the influence of confidence factors which had an impact on the country's balance of payments crises, it is also possible to marshal both theoretical and empirical evidence on the impact of financial and monetary variables, particularly Greece's inflation and the rate of credit expansion, on the behaviour of international reserves.

In a regime of fixed or quasi-fixed exchange rates, such as that pursued by Greece over the previous thirty years, domestic money is a close substitute for foreign money, and can be exchanged with a considerable degree of certainty for foreign money and foreign goods through the balance of payments; this approximation of the balance of payments adjustment process is used to develop the model tested here. An expansionary fiscal and/or monetary policy which raises the supply of money, for given demand, sets in motion a process of adjustment through which individuals spend the excess supply of money and restore equilibrium in their money holdings. This model suggests that the balance of payments is a monetary phenomenon and balance of payments difficulties are invariably associated with excessive monetary growth⁽⁴⁾.

The model tested for the case of Greece is based on the following equation determining the supply of money in a small open economy under fixed exchange rates :

(3) The data are line 71 d and line 11 s, respectively, for import payments and international reserves excluding gold at Greece's IFS country code (174); the reserves data are converted into US dollars using the USD/SDR end of period rate.

(4) This is the monetary approach to the balance of payments; it places emphasis on policy parameters, rather than traditional elasticity factors, in the analysis of the balance of payments. Its principal policy conclusion is that external adjustment is intimately linked to, and requires, responsible financial policies. For an exposition of the adjustment process see M. Parkin (1974) : "Inflation, the Balance of Payments, Domestic Credit Expansion, and Exchange Rate Adjustments", in R. Aliber (ed.) : "National Monetary Policies and the International Financial System", the University of Chicago Press, Chicago. The monetary model of the balance of payments is extensively discussed and tested in the papers compiled in J. Frenkel and H. Johnson (ed., 1976) : "The Monetary Approach to the Balance of Payments", Allen and Unwin, London.

$$H = ER + D \quad (1)$$

where H = high-powered money, money supply
E = exchange rate, units of domestic currency per foreign currency
R = stock of international reserves in foreign currency
D = domestic credit

The money multiplier has been assumed to be unity. Letting the exchange rate be unity and differentiating (1) with respect to time we obtain the profile of the balance of payments as a function of the domestic monetary disequilibrium :

$$dR/dt = dH/dt - dD/dt \quad (2)$$

Letting the demand for money be :

$$M_d = h(y, r, p_e) \quad (3)$$

$$h_1 > 0; \quad h_2, h_3 < 0$$

where MD = demand for high-powered money
y = real income
r = nominal rate of interest
pe = actual or expected rate of inflation

and substituting into (2), we have :

$$dR/dt = dh(.) / dt - dD/dt \quad (4)$$

Equation (4) can be estimated after appropriate choice of an explicit form and of the explanatory variables. A linear form of this equation was adopted, and OLS results over the period 1973-87 are presented in Table IV.4. The dependent variable is the change in Greece's international reserves from the balance of payments statistics (IFS line 79c.d.). The independent variables are : D8587 = dummy variable for the 1985/87 stabilization programme, = 1, 1985-87; = 0, otherwise; DC = domestic credit expansion (IFS line 32); YPERM = permanent income, the trend value of real GDP; PDOT = inflation rate measured by the GDP deflator (IFS line 99b/IFS line 99b.p.); and DLENDRATE = first difference in the lending rate (IFS line 60p).

Table IV.4
Determinants of Changes in International Reserves

Constant	4439.42 (15.40)
D8587	306.23 (8.19)
log(DC/DC(-1))	-58.03 (13.53)
log(YPERM/YPERM(-1))	86.63 (2.70)
PDOT	-88.03 (11.44)
PDOT(-1)	-68.63 (8.62)
PDOT(-2)	-23.68 (5.90)
DLENDRATE	-33.38 (9.69)
<hr/>	
R ²	0.91
DW	2.07
Rho	-0.55 (1.65)
n	1973-1987
<hr/>	
<p>Absolute t-statistics in parentheses; DW is the Durbin-Watson statistic; Rho is the first-order serial correlation coefficient; n is the sample</p>	

The main determinants of this equation are those of the demand for money. The principal change in the stochastic properties of the data in the post-1972 period is related to the sharp acceleration in the rate of inflation, and preliminary regressions confirmed that this equation contained a structural break in 1973; hence the choice of the estimation sample⁽⁵⁾. The equation does not explain well the post-1987 period, and, it appears, there have been serious instabilities in the demand for money in the late 1980s associated with the liberalization measures of these years.

The results confirm that Greece's balance of payments difficulties are related to its inflation performance during the post-1972 period. The lagged pattern of inflation suggests that the money demand adjusts sluggishly to inflation, perhaps reflecting sluggish expectations formation, but also past monetary expansion. Inflation induces substitution of foreign money and foreign goods for domestic money and

(5) A confirmation of this is provided by D. Himarios (1986): "Administered Interest Rates and the Demand for Money in Greece under Rational Expectations", Weltwirtschaftliches Archiv, Band 22, Heft 1.

this requires financing by the central bank, leading to severe reserve losses. The growth of permanent income raises the demand for money, and changes in the lending rate, which affect negatively the demand for money, affect also negatively the demand for foreign money; a one percentage point increase in the lending rate raises reserve holding by USD 86 million. Finally, the growth of domestic credit, ceteris paribus, causes a direct drain on the country's reserves.

Greece's balance of payments experience confirms the predictions of the monetary model. The principal conclusion from this analysis is that the external disequilibrium has been principally related to excessive monetary growth, itself associated with the fiscal expansion of the 1980s. The results show that only with responsible financial policies will Greece's balance of payments strains be alleviated and the country's external adjustment will take place at a smooth pace.

III. The Pattern and Composition of Greece's Commercial Trade

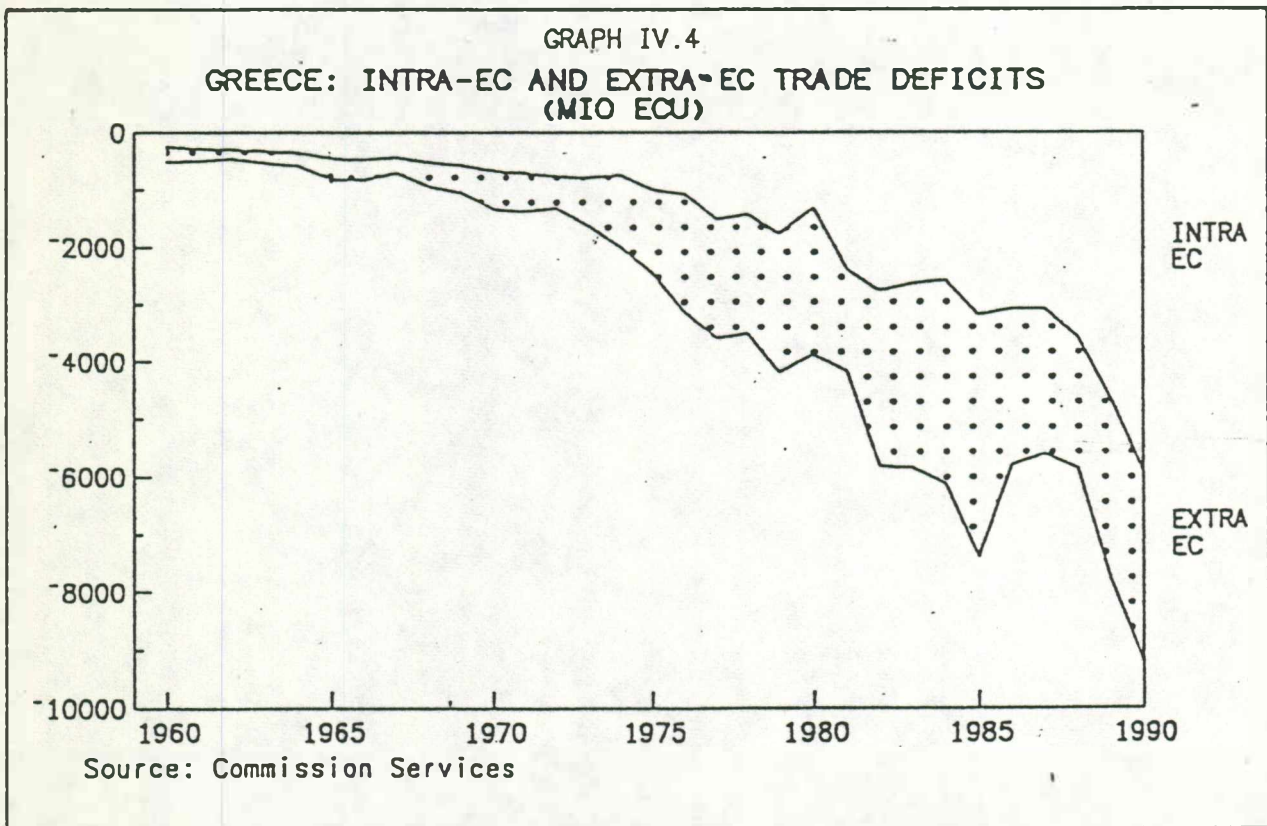
III.A The Composition of Greece's External Trade

Greece imports goods intensive in technology and human and physical capital, and exports labour-intensive goods. This pattern is characteristic of all the geographic distribution of its trade, that is, both with the Community and with the rest of the world. Over the period since the beginning of the 1970s the trade balance has followed a trend deterioration, peaking at some ECU 9.2 billion in 1990. There was a temporary reversal of this trend during the 1985/87 stabilization period, but once the programme was abandoned the trend resumed. Graph IV.2 shows the composition of the trade deficit. It is apparent that the extra-EC contribution to the deficit has risen since the early 1970s, reflecting the importance of fuel imports. However, Greece's trade deficit with the rest of the Community has also widened in recent years.

Indeed, the share of the trade deficit recorded with the Community in 1970 was 49.6% of the total trade deficit recorded that year; in 1990 this has risen to 63.8%. Also, in 1982, a year after Greece's entry into the Community, its inter-EC trade deficit represented 47.5% of the total trade deficit, virtually the same as in 1970. These data suggest that membership in the Community has been accompanied by a widening of Greece's trade deficit.

Another noteworthy feature of the data is the fact that the level of the merchandise trade deficit rose sharply in the 1980s compared to the previous two decades. Graph IV.4 indicates that the deterioration commenced immediately after the first oil shock, but in the 1980s the deficit grew rapidly. Its average value relative to GDP in the period 1971/80 is -14.9%; in the following ten years it reached a mean value of -16.3%, a full 1.4 points increase. Factors underlying this are probably the deterioration in the country's international competitiveness during this period, as well as the rapid growth in nominal demand which ultimately spilled over into the external accounts.

The emergence of an increasing trade deficit with the Community, for a given level of trade imbalance, which developed in the 1980s likely reflects the presence of substantial trade diversion effects associated with membership in the EC. Trade diversion and trade creation are two important elements when countries form a customs union; the former refers to the displacement of traditional competitive suppliers by the union members in a country's trade, and the latter refers to the expansion of trade between the members as a result of the customs union when inefficient domestic production becomes unprofitable and contracts; there is, in addition, the possibility of trade erosion when inefficient domestic production displaces imports from third countries as a result of the customs union⁽⁶⁾. The evidence from the experience of Greece suggests that significant net trade diversion effects have been present. In particular, Plummer shows that net trade diversion



(6) For a survey of these issues, see M. Corden (1975) : "The Costs and Consequences of Protection : A Survey of Empirical Work", in P. Kenen (ed.) : "International Trade and Finance : Frontiers for Research". Cambridge University Press, New York.

has been significant in some agricultural trade, and in trade in manufactures⁽⁷⁾; it is likely, therefore, that static efficiency of the Greek economy, and of the Community economy encompassing Greece, has fallen in the 1980s as a result of this factor.

Greece's trade deficit is dominated by its deficit in high technology, human capital intensive, goods such as chemicals, manufactures, and machinery and transport equipment. Since the time of the first oil

Table IV.4
The Composition of Greece's Trade Deficit
(percent of total trade deficit)

<u>SITC group</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1987</u>
2: Crude Materials	4.3	7.1	5.5	4.3	5.3
3: Fuel Products	9.7	30.5	31.2	43.5	21.0
5: Chemicals	8.5	10.8	10.1	12.2	18.9
6: Manufactures ⁺	9.4	2.8	3.6*	5.5	15.0
7: Machinery and Transport	70.0	59.7	68.6	40.3	46.3

+ includes textile products, paper, rubber, metal manufactures, etc. See Eurostat: "External Trade: Glossarium 1990", for the product composition of these groups; * surplus

Source : Commission services

shock large deficits in fuel products have also emerged. Thus, in 1970 the trade deficit was dominated by net imports of machinery and transport equipment (70% of the total), followed by manufactures and by fuel products. In 1975, as shown in Table IV.4, the fuel products deficit had risen to 30% of the total deficit and it continued at that level until the beginning of the 1980s. There was another sharp increase in the ratio of the fuels to total merchandise deficit up to the middle of the decade, but subsequently this has declined, reflecting principally the collapse in oil prices in 1986; this ratio was 21% in 1987.

(7) See M. Plummer (1991) : "Ex-Post Empirical Estimates of the Second Enlargement : The Case of Greece", Weltwirtschaftliches Archiv, Band 127, Heft 1. The net trade diversion is estimated to amount to 4.4% of total trade. Plummer attributes the large estimates of trade diversion following Greece's membership to four factors : the changes in relative prices as a result of the formation of the customs union; the deterioration of the Community's Generalized System of Preferences following the accession of newly industrializing countries; structural changes in the CAP aimed at promoting self-sufficiency; and other changes such as increased tendencies to trade intra-Community and the increase in non-tariff protection of basic industries.

Table IV.5
Greece's Foreign Trade Patterns, 1964-88
(in volumes, annual percentage change)

	1964-70			1971-80			1981-88			1964-88		
	World	EC-11	Row	World	EC-11	Row	World	EC-11	Row	World	EC-11	Row
<u>Imports</u>												
Agriculture, Fisheries	4,6	3,4	5,0	9,8	8,4	11,0	7,3	34,0	1,9	7,5	15,2	6,4
Energy products	12,4	25,0	11,2	7,2	-7,3	9,1	-2,1	7,2	-2,1	5,7	6,4	6,1
Manufactured products	10,9	9,4	13,6	5,4	5,5	5,9	3,8	6,8	0,5	6,4	7,0	6,3
- Weak demand ⁽¹⁾	6,4	6,6	11,4	5,0	5,8	6,5	7,9	10,9	-1,5	6,3	7,7	5,3
- Mean demand ⁽²⁾	14,3	11,0	19,1	6,2	6,3	7,4	2,0	6,6	-2,4	7,1	7,7	7,6
- Strong demand ⁽³⁾	9,6	10,1	8,4	5,6	5,1	7,1	4,7	4,4	5,8	6,4	6,3	7,1
Total Imports	10,6	10,0	11,4	5,5	4,7	6,5	2,3	7,2	-1,5	5,9	7,0	5,3
<u>Exports</u>												
Agriculture, Fisheries	3,5	4,6	3,3	2,1	0,6	4,6	5,9	14,7	-2,1	3,7	6,2	2,1
Energy products	34,4	44,2	35,1	94,9	207,8	43,7	11,4	37,9	3,4	51,2	107,6	28,4
Manufactured products	22,5	27,8	17,4	12,3	10,4	4,6	1,6	5,4	-2,8	11,7	13,6	10,0
- Weak demand ⁽¹⁾	29,2	34,4	24,0	14,4	13,8	16,2	3,7	6,0	0,3	15,1	17,1	13,3
- Mean demand ⁽²⁾	15,3	20,3	11,3	8,5	4,4	13,0	0,1	8,1	-5,8	7,7	10,1	6,5
- Strong demand ⁽³⁾	40,6	48,3	35,0	15,2	11,1	19,9	-5,4	-3,0	-6,4	15,8	17,0	15,7
Total Exports	13,1	16,1	10,6	11,8	11,1	12,9	2,2	6,4	-2,4	9,1	11,0	7,4

(1) Weak demand : Ores and metals, non-metallic minerals, metal products, textiles and clothing, leathers, skins and footwear, wooden products and furniture, other manufacturing products.

(2) Mean demand : Agricultural and industrial machinery, motor vehicles, other transport equipment, food products, paper and printing products, rubber and plastic products.

(3) Strong demand : Chemical products, office machines, electrical goods.

Source : Commission services

On the other hand, the deficit in chemical products has been widening and increasing in importance in the overall trade deficit; in 1987 it had risen to around 19%, up from 8.5% in 1970 and 10.1% in 1980. The importance of the deficit in SITC category 6, manufactures, has fluctuated from a surplus in 1980 to a large deficit amounting to 15% of the total in 1987; prior to 1980 this ratio had been around 10%. Plummer has found substantial trade diversion effects in manufactures following Greece's membership in the Community⁽⁸⁾.

The evolution of these balances is a reflection of the character of the products dominating Greece's exports and imports. In an earlier study on competitiveness and market share growth, manufactured products were disaggregated into those which were subject to weak, moderate, and strong demand⁽⁹⁾. The disaggregation was made on the basis of the growth in the demand for these products over the period 1978-82. In order to extend the data set and to encompass Greece's experience over the past decade, and also over the period since the early 1960s, the same classification is adopted in Table IV.5 where, in addition, the growth of demand for other product groups is presented. Three points stand out: first, in the period prior to 1981 Greece's exports in the strong demand category rose rapidly but in the 1980s growth has been negative, and a similar pattern is also occurring on the import side; secondly, the growth of primary and energy products has dominated the performance of exports particularly in the 1980s and, on the import side, they have maintained a stable growth rate; thirdly, Greece's exports to the rest of the world have registered declines in the 1980s, and imports have also followed a parallel pattern. The data from this table suggest that Greece's prospects to gain from the completion of the internal market are very limited as long as the existing pattern of specialization is maintained.

III.B Factors Affecting the Trade Balance

Since the evolution of the trade deficit reflects domestic relative to international demand and supply conditions it is important to examine some formal empirical evidence on the corresponding contribution of these factors. The model used is based on the hypothesis that the long-run level of the trade deficit is an increasing function of the level of trend GDP in Greece relative to the rest of the world; and a decreasing function of relative supply potential of these economies approximated by the ratio of gross investment in Greece to the EUR-12 investment⁽¹⁰⁾. Other factors postulated to affect the

(8) See Plummer (1991) : op.cit., Tables 1 and 2.

(9) See the studies published in the European Economy, no. 25, September 1985, for a full discussion of the aggregation and the results concerning European industries. Using the aggregation outside the base period implies that the product mix combined in the three categories of demand has not changed. This is a reasonable assumption to make.

(10) For a discussion of the supply behaviour of export-oriented firms see P. Boothe (1983) : "The Investment Supply Response of Traded-Goods Industries", Technical Report no. 37, Bank of Canada, June.

level of the trade deficit are (changes in) the real rate of interest in Greece relative to the real rate of interest abroad, reflecting relative scarcity of capital and/or the relative stance of monetary policy; this variable is constructed using the lending rate (3- to 6-months) for business and the CPI for Greece, and the Federal funds rate, and the CPI in the US; it is assumed that the trade deficit is decreasing in this variable. Also, the relative real unit labour costs for the total economy in Greece and in 20 industrial countries is used as an index of competitiveness; it is assumed that the trade deficit increases with this variable.

Since Greece's trade was liberalized only after accession to the Community, the level of international reserves has rationed the flow of imports. It is assumed here that, ceteris paribus, the trade deficit is an increasing function of the level of international reserves⁽¹¹⁾. Finally, the GDP gap of Greece relative to that of the Community excluding Greece, and the growth of real GDP in Greece relative to that of Canada, Japan and the USA are additional, cyclical, variables in which Greece's trade deficit is postulated to be increasing. The equation has the following general form :

$$\text{TRADE} = f(\text{ULC}, \text{REALR}, \text{GDPGAP}, \text{TRENDGDP}, \text{RESER}, \text{GREUS}, \text{INGEUR}) \quad (5)$$

with the following restrictions :

$$\begin{aligned} f_1, f_3, f_4, f_5, f_6 &> 0 \\ f_2, f_7 &< 0 \end{aligned}$$

where	TRADE	= trade deficit in \$US (IFS line 77acd)
	ULS	= real unit labour cost in total economy, Greece relative to 20 industrial countries, 1985 = 100 (Commission data)
	REALR	= change in the real interest rate in Greece minus real interest rate in the US; lending rate (IFS line 60p) and CPI inflation (IFS line 64) and, for the US the Federal Funds rate (IFS line 60b) and the CPI inflation (IFS line 64)
	GDPGAP	= difference between actual minus trend GDP as percent of trend GDP in Greece and in EUR-11 excluding Greece (Commission data)
	TRENDGDP	= trend GDP in Greece relative to trend GDP in EUR-11; trend GDP is the fitted value of actual real GDP on a time trend (Commission data)
	RESER	= level of international reserves excluding gold (IFS line 71d) converted into USD with the USD/SDR end of period rate.

(11) For a discussion of this issue see E. Leamer and R. Stern (1970) : "Quantitative International Economics", Aldine Publishing Company, Chicago.

- GREUS = growth of real GDP in Greece relative to growth of real GDP in Canada, Japan, and the USA (Commission data and WEFA databank, respectively)
- INGEUR = ratio of gross fixed capital formation to GDP in Greece relative to that in the Community (EUR-12) (Commission data).

The equation was estimated in a linear form by OLS over the sample 1962-1990, and the results are shown in Table IV.6. The equation fits the data very well with 90% of the variation in the trade balance explained by the postulated variables. All coefficients are signed according to priors, and there is no evidence of misspecification as indicated by the DW statistic.

Table IV.6

Determinants of the Trade Balance of Greece

Constant	-15 925.6 (2.36)
Relative real unit labour costs	64.91 2.68)
Real interest rate differential (-1)	-96.22 (1.45)
Real interest rate differential (-2)	-182.37 (3.04)
Relative GDP gap (-1)	0.335 (1.62)
Relative trend GDP	44.590 (4.34)
GREUS real growth differential	1.981 (1.18)
Level of international reserves	2.375 (6.99)
Investment ratio (-1)	-73.505 (2.12)
R ²	0.90
DW	1.60
n	1962-1990

Absolute t-statistics in parentheses; DW is the Durbin-Watson statistic; n is the sample

The results suggest that, among the determinants of Greece's trade deficit, a one percent widening of Greece's output gap relative to that in EUR-11 would cause the dependent variable to deteriorate by around USD 34 million. Deviation of Greece's trend GDP from Community trends would cause the deficit to widen by USD 45 million, while a smaller (USD 4 million) contribution to the deficit is suggested by the coefficient of the Greece's growth performance relative to Canada, Japan, and the US. A sizeable (USD 65 million) deterioration arises from competitiveness losses as well, and small improvements are suggested by the coefficient on the interest rate differential. Finally, the supply variable indicates that the ratio of Greece's investment share in EUR-12, has a restraining influence on the country's commercial deficit; indeed, a one percent increase in the ratio of Greece's investment spending relative to the Community ratio would cause the trade deficit to narrow by USD 74 million.

The importance of the relative investment performance in Greece's trade deficit indicates that gains in international trade, recorded as trade balance improvements, will require an increase in the rate of capital accumulation. It could be argued that investment expenditures and competitiveness are the two factors among the independent variables over which government policy can exercise some beneficial influences which will spill over to the country's external accounts. The lack of investment dynamism, and the parochial specialization which is highly correlated with it, underlie much of the behaviour of the trade deficit. Should the investment climate of the 1980s continue to characterize the 1990s, Greece will be unable to exploit the emerging opportunities in a closely integrated Community.

IV. Greece's Revealed Comparative Advantage

Greece's trade pattern has evolved over time both in response to the increased openness of the economy and reflecting the country's changing demand patterns and changes in its comparative advantage. As seen in the previous section, the pattern of specialization has been particularly affected by Greece's membership of the Community. The evolution of trade patterns over time reveals changes in factor supplies, changes in preferences, and the emergence of new products in which a country can exploit a comparative advantage. In the present section commodity trade data are reviewed in order to illustrate changes in the character of Greece's specialization. The evidence from trade performance suggests that there have been some significant gains in certain commodity categories particularly in the 1980s, but also that significant losses have taken place.

The evolution of Greece's comparative advantage can be examined from data on the country's observed commodity composition of trade. This is a revealed comparative advantage since it is only a manifestation of the deeper parameters of production and preferences which, of course, are not possible to ascertain. The index of revealed comparative

advantage used here is that proposed by Balassa and Noland⁽¹²⁾ and is defined as follows :

$$h = \frac{(X_{ij} - M_{ij})}{(X_{ij} + M_{ij})} \quad (6)$$
$$-1 \leq h \leq 1$$

where X = exports
 M = imports
 i = commodity i index
 j = country j index

The index takes a value of one when the country does not import commodity i , and a value of -1 when it does not export commodity i . Negative values of the index suggest that the country has a trade deficit in commodity i ; positive values indicate a trade surplus. It is worth noting that while it is possible that the country could have a comparative advantage in commodity i , this is not sufficient that it will also have a trade surplus in this commodity; for this to happen, world demand for the commodity must exceed domestic demand. Therefore, the results from this index should be interpreted with this caveat in mind.

Data for eight commodity categories were obtained from Eurostat. The data have been disaggregated into trade with other Community countries (EC-11 over the period examined) and with the rest of the world (RoW). They distinguish the commodity groups shown in Table IV.7 where the index of revealed comparative advantage is presented. The period examined is 1965 to 1988, sufficiently long to indicate any changes in apparent comparative advantage of the country. The level of aggregation (one-digit SITC) is perhaps less informative than a higher level would be but, also, likely sufficient to shed light on the question.

Greece joined the EC in 1981 and this represents a natural date to break the sample. The results show some radical changes which have taken place over the period in Greece's trade. Greece is rapidly developing a comparative advantage in the miscellaneous manufactures category, both against the EC-11 and against the rest of the world. This category is composed of furniture, travel goods, clothing, footwear, building supplies, etc.⁽¹³⁾ and is likely income elastic. Greece has a comparative advantage in the oils, fats and waxes (SITC 4) category. Indeed, this is the country's most important trading advantage in the Table. This has been strengthening over the twenty-

(12) See B. Balassa and M. Noland (1989) : "The Changing Comparative Advantage of Japan and the United States", Journal of Japanese and International Economies, June.

(13) See Eurostat : "External Trade : Glossarium 1990", for the composition of the SITC categories used.

Table IV.7
Greece's Revealed Comparative Advantage

SITC	1965/70			1971/80			1981/88		
	World	EC-11	RoW	World	EC-11	RoW	World	EC-11	RoW
0 : Food	-0,16	0,20	-0,40	0,04	0,28	-0,14	-0,13	-0,22	0,11
1 : Beverages and Tobacco	0,98	0,95	0,99	0,86	0,71	0,96	0,48	0,15	0,86
2 : Crude Materials	-0,23	0,05	-0,33	-0,29	0,10	-0,46	-0,31	0,01	-0,48
3 : Fuel Products	-0,92	-0,87	-0,93	-0,64	0,27	-0,80	-0,69	0,21	-0,79
4 : Oils, Fats and Waxes	0,36	0,57	-0,08	0,32	0,27	0,40	0,67	0,64	0,82
5 : Chemicals	-0,69	-0,77	-0,51	-0,57	-0,73	-0,16	-0,67	-0,85	-0,25
6 : Manufactures	-0,45	-0,49	-0,38	0,03	-0,12	0,09	-0,13	-0,31	0,17
7 : Machinery and Transport Equipment	-0,99	-0,99	-0,96	-0,93	-0,97	-0,88	-0,89	-0,93	-0,83
8 : Miscellaneous Manufactures	-0,55	-0,69	-0,33	0,17	0,20	0,11	0,31	0,34	0,22

Source : Calculated from Eurostat : "External Trade", Yearbook 1989, Table 7
RoW : rest of the world.

three years under examination. Another category is beverages and tobacco (SITC 2). Here the country has been experiencing some erosion of its comparative advantage particularly through competition from other EC countries.

Greece in the 1980s reveals pronounced comparative disadvantages against the EC-11 in SITC 5-7, but against the rest of the world it has a comparative advantage in manufactures. Furthermore, the disadvantage in manufactures improved substantially in the 1970s but a deterioration occurred in the 1980s. This happened because the gains made against the EC-11 in the 1970s were sharply reversed in the following decade. Finally, there appears to have been a peculiar evolution in the food category. While the country made gains in this category in the 1970s, a sharp disadvantage against the EC-11 emerged in the 1980s which, despite the continuing gains made against the rest of the world, was sufficient to reverse the country's overall comparative advantage to the level of the pre-1970 years. This development is likely related to the Common Agricultural Policy.

The data examined in Table IV.7 suggest that Greece's trade in the 1980s has continued to take place along traditional lines of specialization. Indeed, the values of the index are indicative of the fact that Greece's exports differ significantly from its imports, or that its specialization is inter-industrial rather than intra-industrial⁽¹⁴⁾. Such specialization is also indicative of the fact that Greece's economic structure differs substantially from that of the other Community countries and, in particular, from the character of trade taking place among the more advanced industrial member states. Conversely, the heterogeneous composition of Greece's imports and exports constitutes an indicator of divergence.

V. Concluding Comments

Greece's balance of payments difficulties of the 1980s are closely related to the unsustainable financial policies pursued during this period. The fundamental determinant of a smooth external adjustment is prudent financial policies; these have been absent from Greece's macroeconomic policy choices in the 1980s. The stylized facts indicate that inflationary trends since the early 1970s explain a major part of the pressure on the country's international reserves; these trends characterized Greece's macroeconomic performance since the failure to adjust to the first oil shock followed by the fiscal expansion of the 1980s. It is clear that no balance of payments assistance will be adequate if the fundamental policy divergence of Greece from the rest of the Community is not contained and reversed. In the absence of

(14) If the traded goods are close substitutes index h would take the value of zero, or the Grubel-Lloyd coefficient would be close or equal to unity. See H. Grubel and P. Lloyd (1975) : "Intra-Industry Trade in Manufactures : Theory and Measurement of International Trade in Differentiated Products". McMillan, London.

adjustment, Greece's external financial relations will continue to be characterized by vulnerability to shifts in expectations. In addition, as financial integration proceeds, Greece will need to maintain high interest rates and wide differentials against the rest of the international community simply to offset the incipient depreciation of the drachma associated with divergent policies. Finally, under these circumstances, the process of financial adjustment to the European area will continue to encounter difficulties, and participation in the ERM and in the monetary union will not be possible.

The pattern of Greece's trade in the 1980s raises some important questions about the country's prospects in an integrated commercial European space. Clearly, specialization along inter-industry lines is a reflection of exploitation of advantages conferred by static factor endowments which, in Greece's case, is physical labour. On the other hand, intra-industry specialization reflects the gains from dynamic developments in the country's comparative advantage. The latter is determined by technology, human capital accumulation, new investment, and the development of new products. Greece does not appear to be competitive in these respects, and this is an issue for concern. Greece's comparative disadvantage in these sectors is a sign of technological backwardness and lack of market power. Since these products are highly income elastic, it is possible that the country will not benefit to any substantial extent from the completion of the internal market. If the trends of the 1980s are not reversed it is possible that Greece's specialization along its traditional comparative advantage will lead to its marginalization in a larger trading Community.

A key factor behind these developments is the dismal investment performance of the last ten years. Investment spending is correlated with innovation and superior supply performance, and it is an important contributor to the strength of a country's external trade; Greece is no exception to this. However, domestic private investment expenditure has been clearly inadequate to accelerate the pace of modernization, and foreign direct investment has been very small. The distortions in the allocation of resources and the disincentives introduced by the variety of regulations and government interventions have reduced the country's potential to innovate and have reinforced the traditional pattern of specialization. Finally, it is possible that the country's educational and technical competence is not commensurate to the requirements of a changing competitive world. If these trends are not reversed, Greece will likely not be able to catch up with the rest of the Community, continuing to depend on Community transfers to finance its balance of payments deficits.