

GREECE: POPULATION CHANGE  
COMPONENTS AND INTERNAL  
MIGRATION

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## **PREFACE**

Annual national and sub-national population estimates for Greece since 1981 have been adjusted recently by the National Statistical Service of Greece to take account of the results of the 1991 Census of Population. The rebased population counts have been used in this paper, together with births and deaths data to generate a time series of net migration estimates for the NUTS 2 regions of Greece. These estimates present a very different picture of net migration patterns to that published by Eurostat during the 1980s. Time series of natural change and net migration rates for 1980-92 are outlined and the importance of the net migration component in explaining regional population growth in Greece is quantified. Published migration data from the 1991 Census is not yet available, so the paper contains an analysis of internal migration in Greece using data from the 1981 Census which demonstrates the primacy of Athens as a destination for internal migrants and indicates the extent of the migration exodus from the most rural areas of the country.

# GREECE: POPULATION CHANGE COMPONENTS AND INTERNAL MIGRATION

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## 1. Introduction

The population of Greece (Ellada) on the 1 January 1992 has been estimated by the National Statistical Service of Greece (NSSG) to number 10.28 million people and to have grown consistently from the beginning of the previous decade. However, it has remained one of the least populated states of the European Union (EU), with a density of 77 inhabitants per square kilometre in 1991, virtually half the EU average of 153 (European Commission, 1994).

The Nomenclature of Territorial Units for Statistics (NUTS) was created by the Statistical Office of the European Commission to provide a single, uniform regionalization for the production of regional statistics. There is a three-level hierarchy of regions in each Member State and Greece is divided into thirteen development regions at the level of NUTS 2 (Figure 1) and into 51 nomoi at NUTS 3. At the NUTS 1 level, these territorial subdivisions are grouped into four macro regions: Voreia Ellada, Kentriki Ellada, Nisia and Attiki.

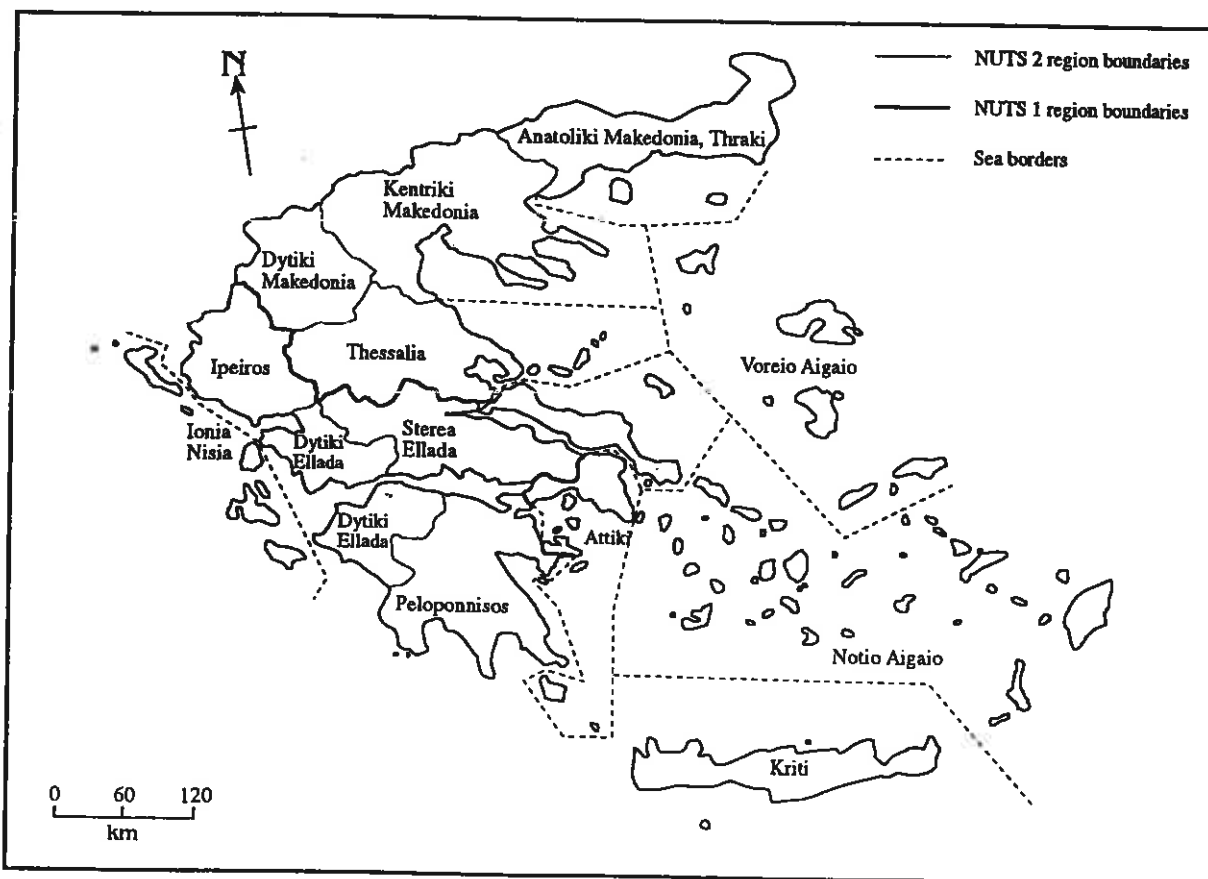


Figure 1: The NUTS 1 and 2 regions of Greece

Over one third of the population lives in Attiki, the region that contains Athens, the administrative, financial, industrial and cultural centre of Greece, whilst a further one million inhabit Thessaloniki, the country's second largest city and capital of Kentriki Makedonia. Regional contrasts in population density are considerable at the NUTS 2 scale; in Attiki, there were 910 persons per square kilometre in 1991 whilst in one of the most mountainous regions, Dytiki Makedonia in Voreia Ellada, a density of only 31 inhabitants per square kilometre was recorded. In contrast, Ionia Nisia, the islands region in the west of the country, had a density of 84 persons per square kilometre.

This paper aims to utilise statistics recently produced by the NSSG (NSSG, 1994) to track national and regional population change in Greece since the beginning of the 1980s and to identify the relative importance of the natural change and net migration components of change in explaining regional trends. A new set of total population estimates for NUTS 2 regions has been produced by the NSSG for the beginning of each calendar year since 1981. These rebased estimates include adjustments to take into account the results of the 1991 Census. It is relevant to draw attention to the differences between these rebased population figures and the original estimates that were used in the calculation of residual net migration estimates in the 1980s. The revised estimates present an entirely different pattern of regional net migration to that indicated by the data published by Eurostat in the 1980s (Eurostat, 1989, for example), where three of the Greek regions, Voreio Aigaio, Peloponnisos and Thessalia, are recorded as having the highest rates of net migration loss of all NUTS level 2 regions in the EU.

Annual totals of births and deaths from 1980 to 1992 have been provided with the population estimates in machine readable form and the natural change and residual net migration components of regional population change are examined in Section 3 of the paper, where correlation analysis is used to quantify the importance of each component in explaining population change. By definition, the estimates of net migration that are generated contain not only the balance of in-migration and out-migration flows between each region and all other regions in Greece, but also the balance of immigration versus emigration for each region from elsewhere in the world outside Greece.

As in other EU countries, there remains a paucity of data on migration flows within Greece during the 1980s with which to confirm the accuracy of the derived residual net migration balances and to provide more detailed evidence of the processes influencing the redistribution of the population. Although some data on internal migration are available from the 1981 Population Census as a result of a five year migration question, there is no direct mechanism for monitoring internal migration between censuses. The REGIO database and the regional publications of Eurostat contain no information on interregional migration since 1984 when a special sample survey of 1.5% of households was conducted. Thus, in advance of the publication of inter-regional migration data from the 1991 Census, Section 4 of the paper contains an analysis of the urban-rural contrast in net migration patterns for particular types of area and investigates the age structure of net migration using data from the 1981 Census. Some conclusions are presented in Section 5.

In order to provide a context for the analysis of regional change and the trends in population components, the development of the country's population as a whole over the 1980s is outlined and a classification of NUTS 2 regions in Greece based on their growth profiles is proposed in the following section.

## 2. National and regional population change

The population of Greece increased by 7.2% between 1980 and 1992 (Figure 2) to reach a total of 10.28 million by the beginning of 1992. Whilst growth was continuous during this period, rates of annual change declined during the first half of the decade from over 11 per thousand in 1980 to around 1 per thousand in 1987. Since then, the annual rate of population change has increased to a high of over 15 per thousand in 1991. National population growth in 1991 was therefore greater than in any of the previous years of the period in question.

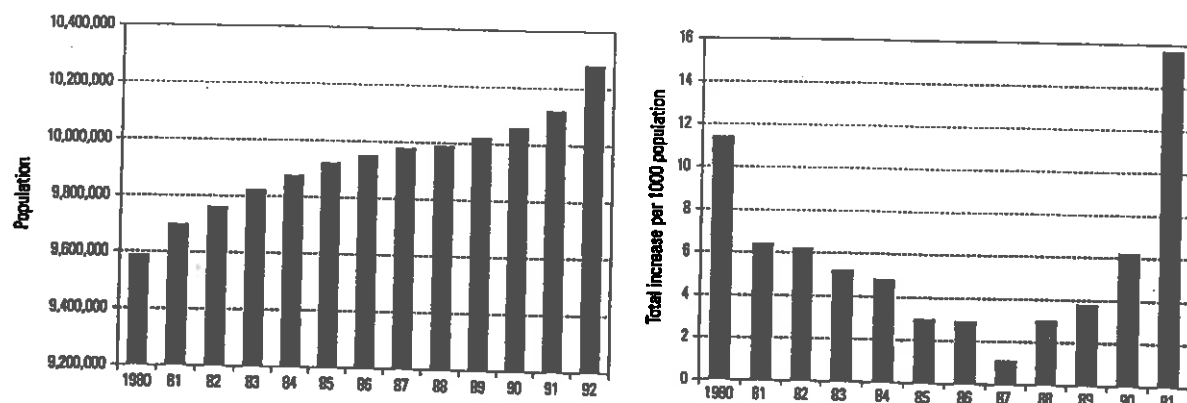


Figure 2: National population change, 1980-92

The regional distribution of the population in January 1992 (Figure 3) illustrates the importance of the two regions, Attiki and Kentriki Makedonia, that contain the two main urban centres, Athens and Thessalonika. Whilst half the country's population is resident in these two regions, in no other region does the population exceed 7% of the national total.

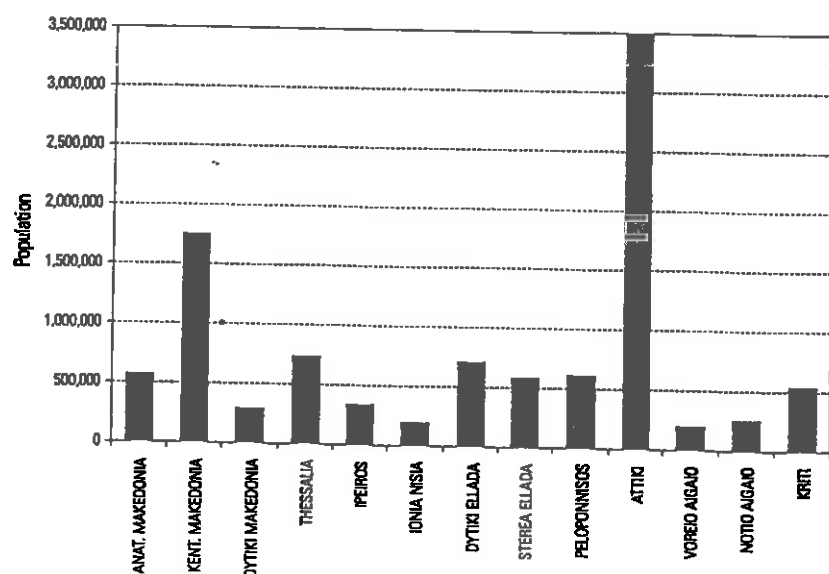


Figure 3: Regional population totals, 1992

Whilst the population in 1992 was higher than in 1980 in all the NUTS 2 regions of Greece, certain regions grew at different rates than others. An examination of the time series of regional population change rates suggests that the Greek regions can be classified into three categories.

The first group consists of five 'high growth' regions: Kentriki Makedonia, Notio Aigaio, Sterea Ellada, Dytiki Ellada and Kriti (Figure 4a). In each of these regions, the rate of population change is positive and remains consistently above 3 per thousand throughout the period.

The second group also contains five regions: Ionia Nisia, Thessalia, Ipeiros, Peloponnisos and Attiki (Figure 4b). This set of 'medium growth' regions is characterised by having lower rates of growth and at least one year of annual change close to zero. In the case of Attiki, the population change is negative in this year.

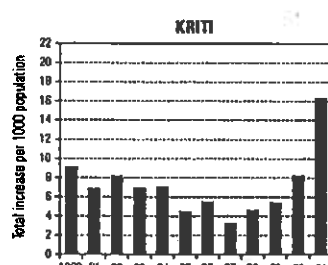
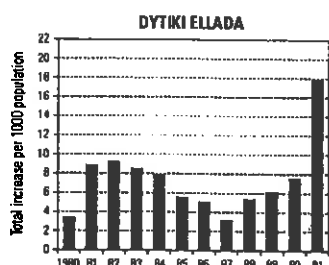
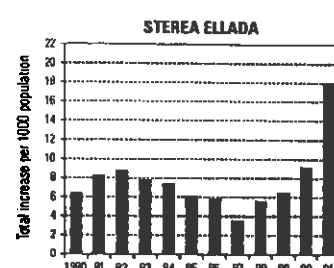
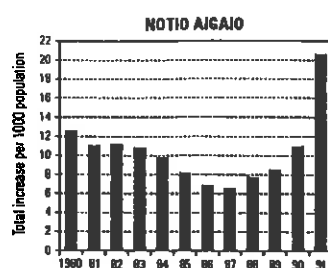
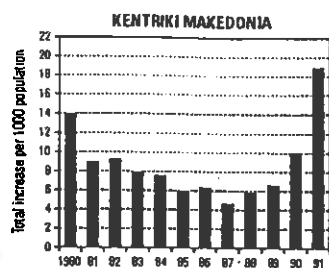
The third group contains the remaining 'low growth' regions: Anatoliki Makedonia and Thraki, Voreio Aigaio and Dytiki Makedonia (Figure 4c) where the data for most years indicate relatively low rates of gain or loss.

One of the most striking features of each of the regional time series schedules is the increase in population that has occurred in the latter part of the period and in 1991 in particular. The spatial incidence of growth in 1991 has been mapped in Figure 5 and indicates that amongst the Greek regions, it is the islands of Notio Aigaio that have recorded the highest growth of over 20 per thousand.

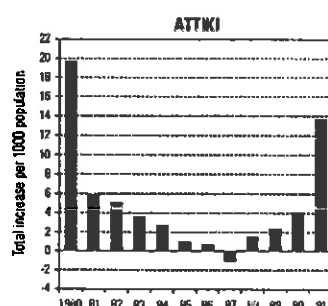
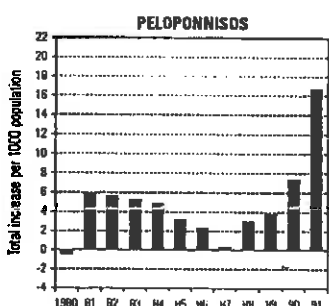
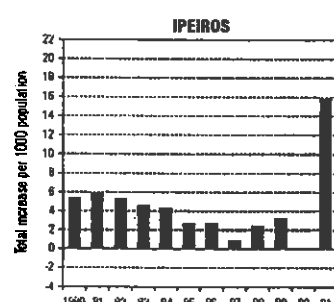
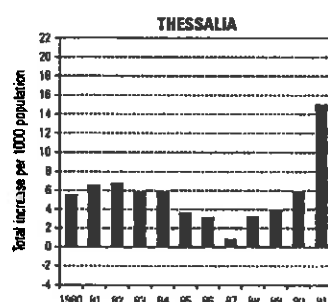
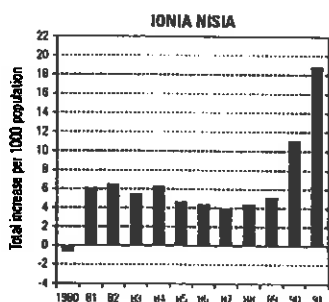
The region which experiences the greatest population change rate (21 per thousand) during the whole period was Voreio Aigaio. This region consists of islands, the largest of which are Lesbos, Chios, Samos, Ikaria and Limnos (Figure 5). The growth of the population of Voreio Aigaio between 1980 and 1992 has resulted in a transformation of the population structure as indicated by the age pyramids illustrated in Figure 6.

In 1980, the age pyramid shows fewer inhabitants in the age groups between 25 and 44 years. This age range contained 21% of the region's population whereas the same age range for Greece as a whole contained 26% of the population. It is likely that the 'kink' in the 1980 pyramid is due to the migration from Voreio Aigaio to Athens that occurred during the 1970s. In addition, the male statistics are influenced by the inclusion of military personnel. During the 1980s, return migration from the mainland urban areas was commonplace and this is one reason for the increased numbers in certain age groups in the 1992 age pyramid, particularly for males. A further interesting feature is the narrowing of the base of the pyramid between 1980 and 1992. In 1992, for example, there were more women aged 75-79 years than there were young female infants aged 0-4 years.

(a) High growth regions



(b) Medium growth regions



(c) Low growth regions

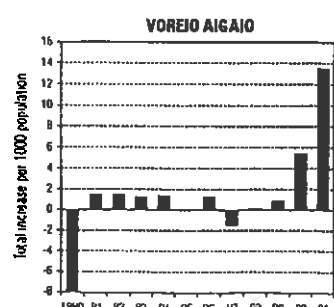
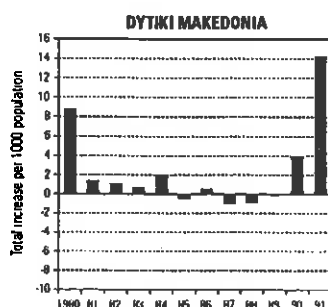
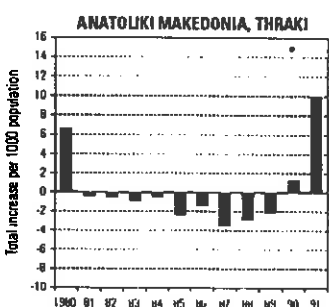


Figure 4: Annual population change rates by region, 1980-92



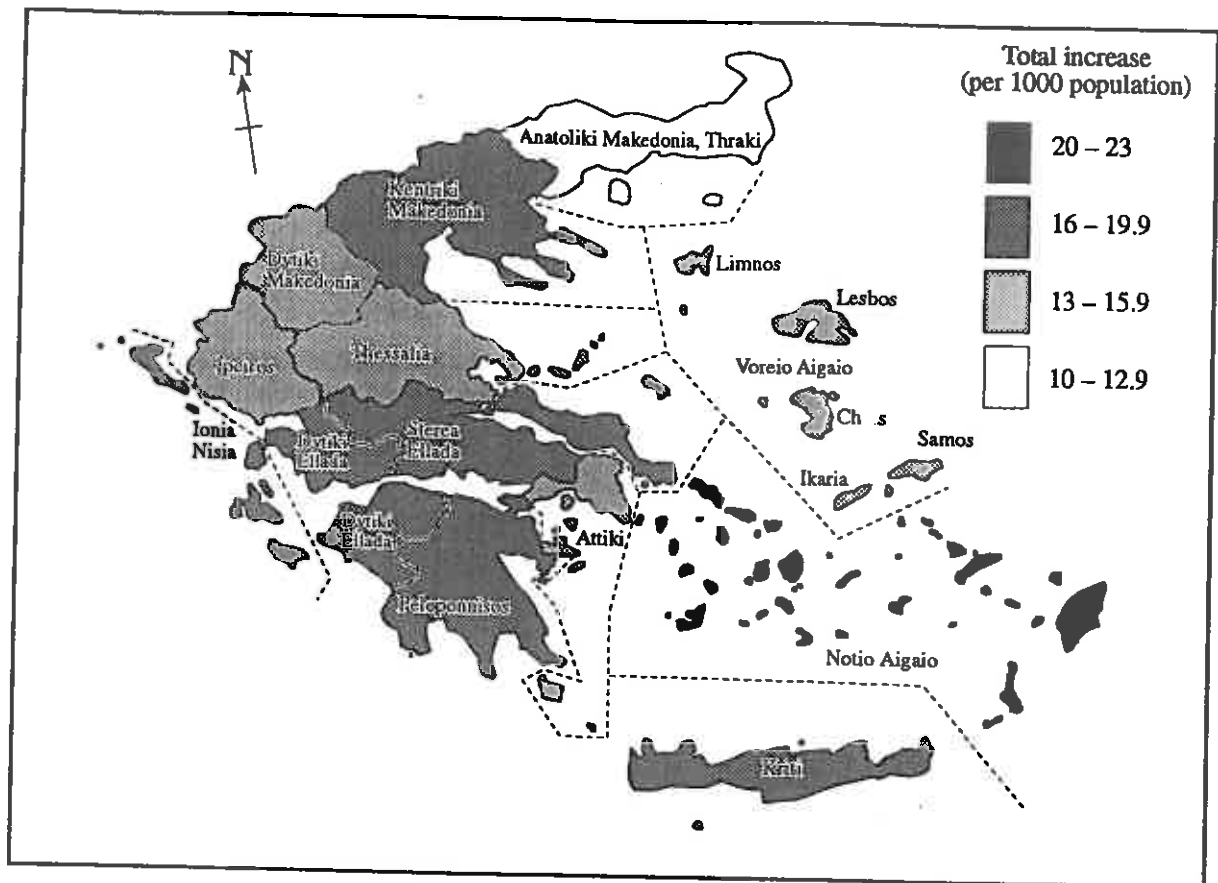


Figure 5: Population change rates by region, 1991

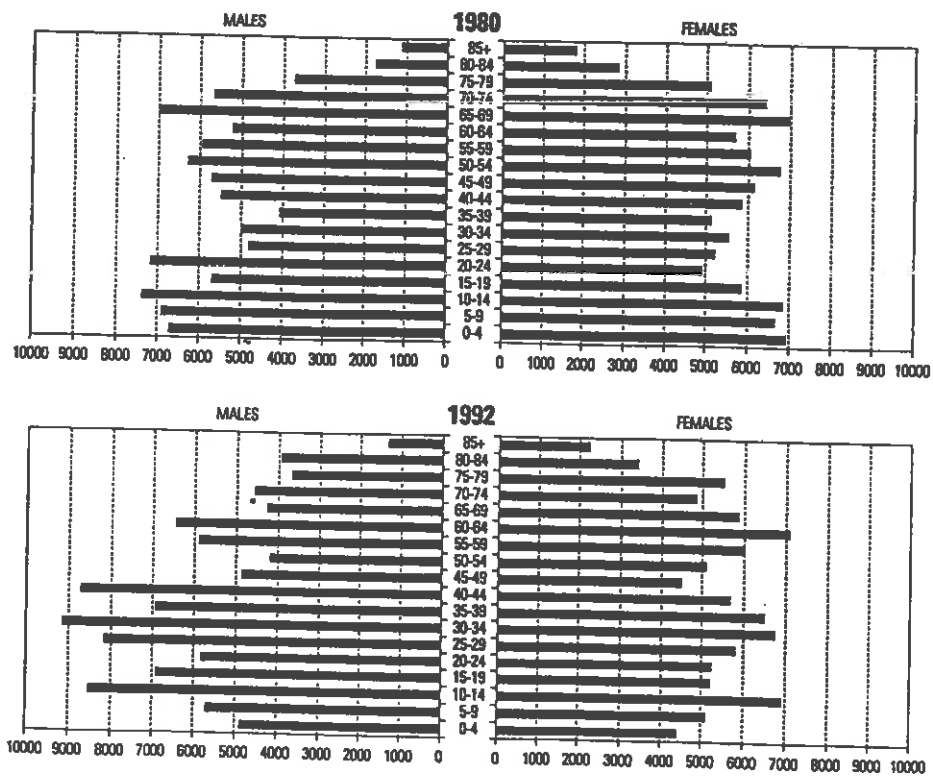


Figure 6: Age pyramids for Voreio Aigaio, 1980 and 1992

### 3. Components of change

A useful approach in regional demographic analysis is to consider which of the components of population change is primarily responsible for determining the evolution of the population. Vital statistics provided by the NSSG allow the calculation of annual natural change rates ( $nc_i(t,t+T)$ ) as:

$$nc_i(t,t+T) = [B_i(t,t+T) - D_i(t,t+T)] / [(P_i(t) + P_i(t+T))/2]$$

and net migration rates ( $nm_i(t,t+T)$ ) as:

$$nm_i(t,t+T) = \{[P_i(t+T) - P_i(t)] - [B_i(t,t+T) - D_i(t,t+T)]\} / [(P_i(t) + P_i(t+T))/2]$$

where:

$B_i(t,t+T)$  is the number of births in region  $i$  in year  $t$  to  $t+T$ ;

$D_i(t,t+T)$  is the number of deaths in region  $i$  in year  $t$  to  $t+T$ ;

$P_i(t)$  is the population of region  $i$  at the beginning of year  $t,t+T$ ; and

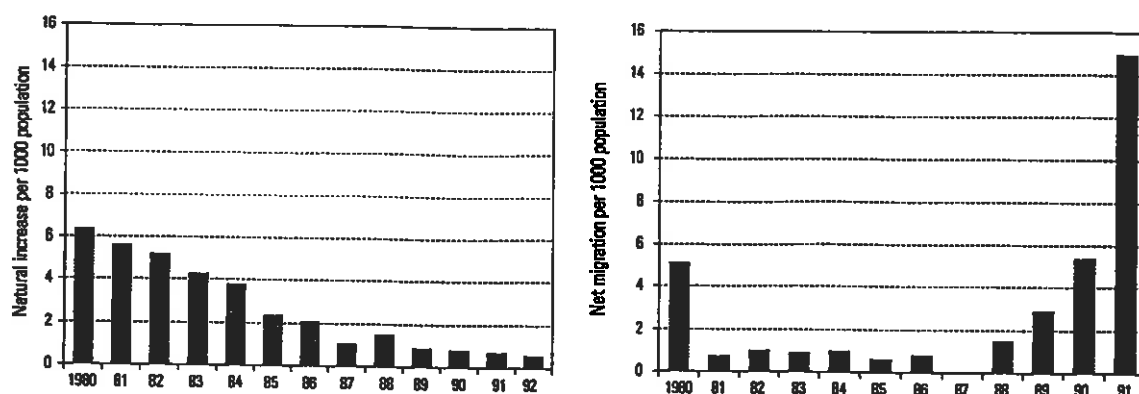
$P_i(t+T)$  is the population of region  $i$  at the end of year  $t,t+T$  (or the beginning of the following year).

In this case, rates have been computed using an at risk population assumed to be the average of the population at the beginning and end of each twelve month period.

The decline in the annual rate of natural increase that has occurred in Greece since 1980 (Figure 7) is explained primarily by reductions in levels of fertility and is consistent with trends in other southern European states like Spain, Portugal and Italy (Siampos, 1991). The annual natural increase rate fell from over 6 per thousand in 1980 to 1.1 per thousand in 1987, increased marginally in 1988, and then continued to decline to a low of 0.6% in 1991. Greece is therefore fast approaching a situation a zero natural increase. At the national level, the estimate of residual migration reflects the balance of international migrants arriving in and departing from Greece. Throughout most of the period, the net flow remains positive but is negligible in terms of volume. However, since 1987, there has been a consistent rise in the net flow of immigrants. This is a trend which, in view of the low rates of natural increase, is responsible for determining the growth in population.

Greece has therefore become a country of net immigration with the rate reaching 15 per thousand by 1991. According to Siampos (1991), the population of foreign citizenship has gradually increased from 195,000 in 1980 to 217,000 in 1989, with an unknown number of clandestine immigrants. Although the current pattern of international migration for Greece is thus characterised by net immigration, it should be recognised that the country has experienced substantial emigration flows to other parts of the world during the twentieth century. Up to the late 1950s, annual emigration flows were dominated by movements to the USA, Canada and Australia (Giaoutzi, 1983). From then until the energy crisis in 1973, Germany became a favoured destination (Moussourou, 1984) and migrant remittances reached

\$470 million in 1971 alone (Glytsos, 1993).



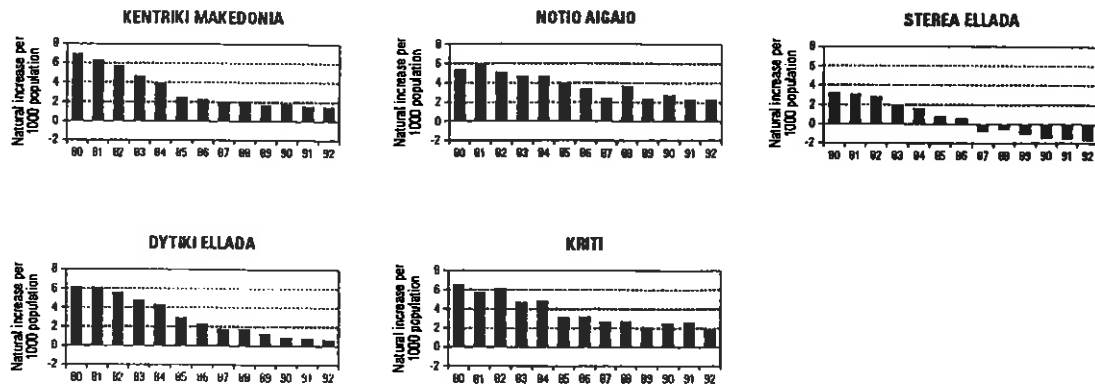
**Figure 7:** Natural change and net migration rates for Greece, 1980-91

Official sources of data with which to identify the origins of immigrants or return migrants to Greece in more recent times include the 1981 Census and a 3% sample survey in 1985/86. Both these sources, providing immigration information for the periods 1976-81 and 1980-85 respectively, illustrate the importance of European countries of origin. In the earlier period, 64.4% of immigrants came from Europe and 15.9% from the USA and Canada; in the more recent period, 61.9% originated from Europe and 19.9% came from North America. In both these periods, the flows from Europe were dominated by migrants from West Germany. No comprehensive official data is yet available to establish the reasons for the sharp increase in net immigration since 1989. It is likely that the wave of immigrants coming from Albania is important, involving ethnic Greeks returning from southern Albania for political as well as economic reasons, and Albanians escaping from their native country to Greece in the face of economic collapse. In the first 6 months of 1991, 24,000 Albanians migrated to Greece (OECD, 1992). In 1992, 202,996 Albanians entered Greece, whilst 201,064 were deported (Petrakou, 1993). Another major flow of immigrants is that of 'Pontians', ethnic Greeks returning from the Pontus region around the Black Sea. It is estimated that 40,000 Pontians arrived in Greece between 1988 and 1992 (Frangouli, 1992).

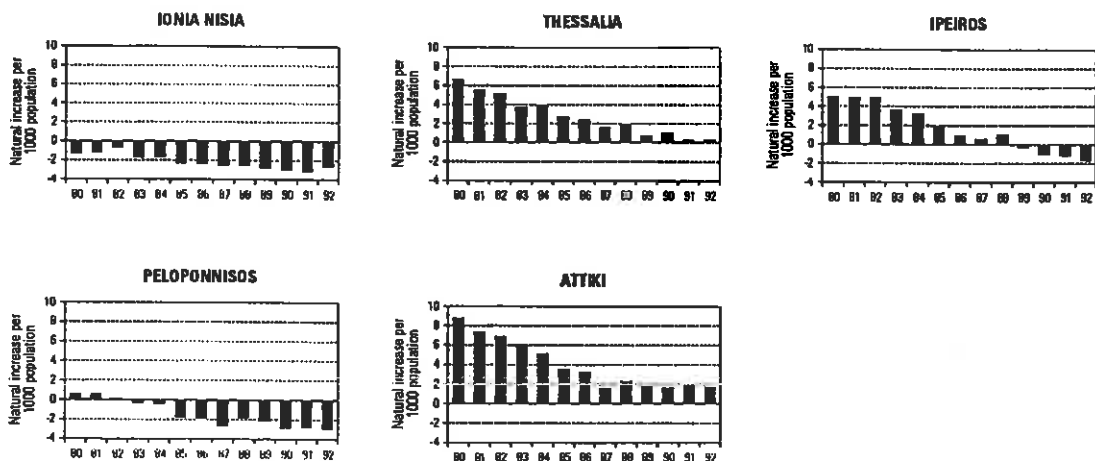
### 3.1 Regional natural increase

The time series rates of natural change from 1980 to 1992 indicate that most Greek regions have experienced either declining rates of natural increase or increasing rates of natural decline. In some regions, a transition from natural gain to natural loss has occurred. The regional rates schedules (Figure 8) are presented using the classification based on population change trends. In the first group, Kentriki Makedonia, Notio Aigaio, Dytiki Ellada and Kriti all experience change similar to the national trend of declining rates of net gain. Sterea Ellada, however, has undergone the transition from being a region of natural gain in the early 1980s to a region with more deaths than births per thousand population in the second half of the 1980s.

(a) High growth regions



(b) Medium growth regions



(c) Low growth regions

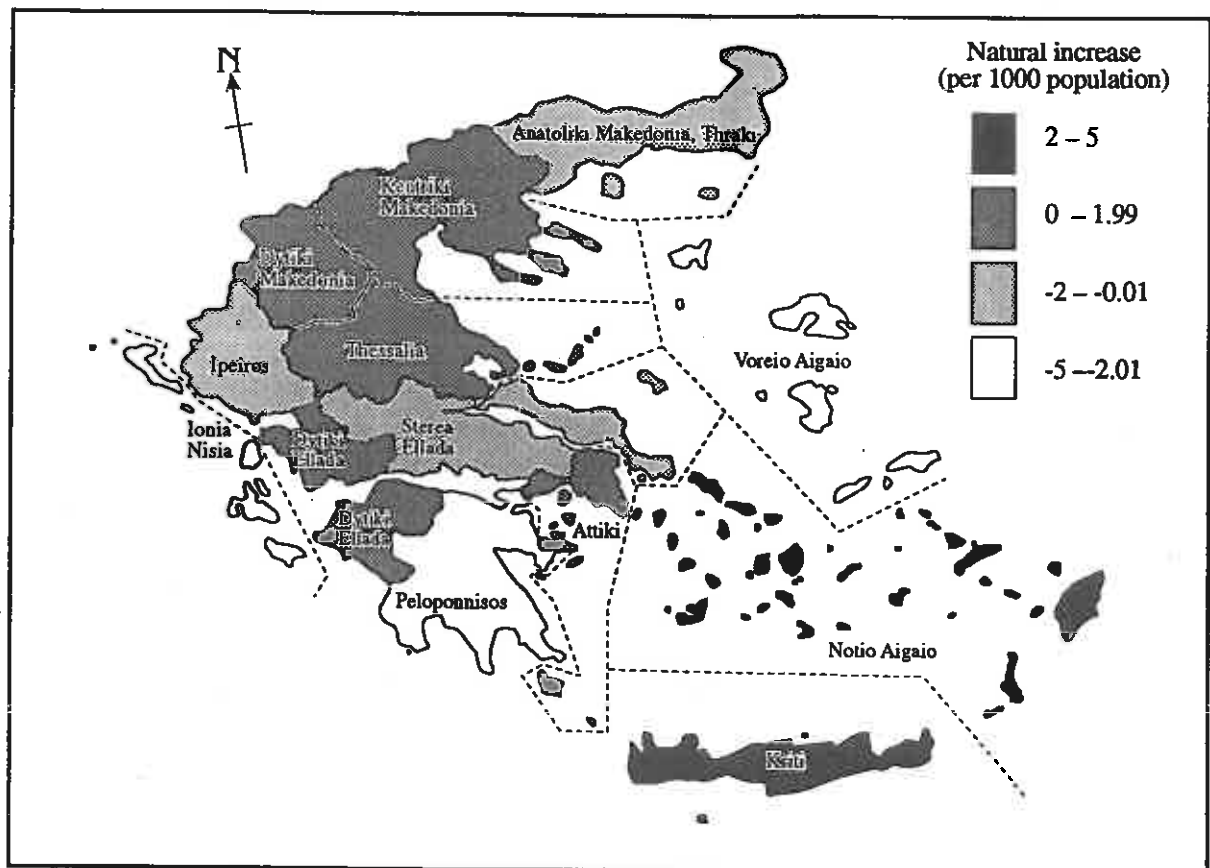


Figure 8: Time series rates of natural increase by region, 1980-91

In the second group of regions experiencing lower rates of population gain than those in the previous group, Attiki and Thessalia follow the national trend of declining rates of natural gain, Ipeiros and Peloponnisos both become regions of natural decline during the period and Ionia Nisia experiences increasing rates of natural loss. The final group is comprised of Anatoliki Makedonia and Thraiki, whose positive rates of natural change in the early 1980s are

replaced by rates of negative natural change in the latter half of the period, and Voreio Aigaio, whose schedule is characterised by rates natural decline that are the highest for any region in the country.

Thus, patterns of natural change at the regional scale in Greece show considerable variation. By 1991, the highest natural increase rates were recorded in Kriti and Notio Aigaio whereas the highest rates of natural decline were evident in Voreio Aigaio and Peloponnisos (Figure 9).



**Figure 9:** Natural increase rates by region, 1991

### 3.2 Regional net migration

The time series schedules of net migration rates for each of the Greek regions (Figure 10) presented in the groups classified on the basis of population change, also illustrate considerable variation. With the exception of Dytiki Ellada in 1980, all the regions in the first group are characterised by positive net migration rates throughout the time period. The net rates for Kriti are lower than those for the other regions in this group but in all cases there is a distinctive trend towards higher rates of net migration gain towards the end of the period. The second group contains a number of regions with rather differing net migration time series. Ionia Nisia has the highest rates of migration gain of any Greek region in the years after 1981 and Peloponnisos also has strong positive rates after 1980. However, net migration for Thessalia and Ipeiros is negligible throughout the 1980s and these regions only experience a dramatic change in the first two years of the 1990s. Attiki, on the other hand, has a high rate

of net gain in 1980, suffers annual net losses until 1989, but records net migration gains once again in the last two years of the period. Rates of net loss throughout the 1980s also characterise two of the regions in the third group: Dytiki Makedonia and Anatoliki Makedonia and Thraki, but the third region, Voreio Aigaio, records gains in all years except 1980.

The most consistent trend in this set of schedules is the positive net migration rates estimated in each of the regions in 1990 and 1991. It is possible that these net migration schedules reflect trends in international migration as much as in internal migration but that hypothesis is difficult to prove without access to data at the regional level on either of these two processes. The highest rate of net migration gain of all the Greek NUTS 2 regions in 1991 (Figure 11) occurred in Ionia Nisia whereas Attiki and Anatoliki Makedonia and Thraki recorded the lowest rates of net gain.

To what extent have the annual rates of population change in the Greek NUTS 2 regions during this 12 year period been determined by net migration rather than natural change?

Pearson's correlation coefficients have been computed between the population change rates and component rates for each year in the time series (Table 1). The regional net migration rate is positively correlated with the regional rate of population change in all years and in each case the relationship is statistically significant at a 0.01 confidence level. The correlation coefficients between net migration and population change rates are all over 0.65, whereas coefficients between natural change and population change are all below 0.3, with the exception of the first year in the series where population change rates are highly correlated with both natural change and net migration.

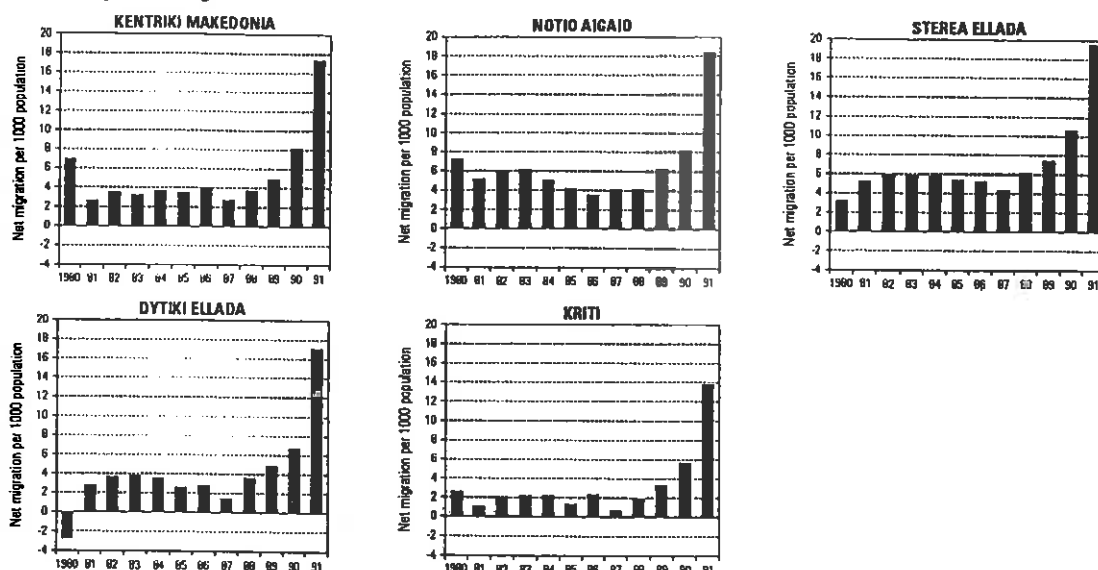
**Table 1:** Correlation coefficients for population change rates against natural change rates and net migration rates, 1980-91

Year	PCR against NCR	PCR against NMR
1980	0.87**	0.92**
1981	0.26	0.65*
1982	0.23	0.70*
1983	0.25	0.69*
1984	0.18	0.71*
1985	0.12	0.72*
1986	0.13	0.70*
1987	0.25	0.68*
1988	0.22	0.74*
1989	0.29	0.74*
1990	0.09	0.83**
1991	0.18	0.74*

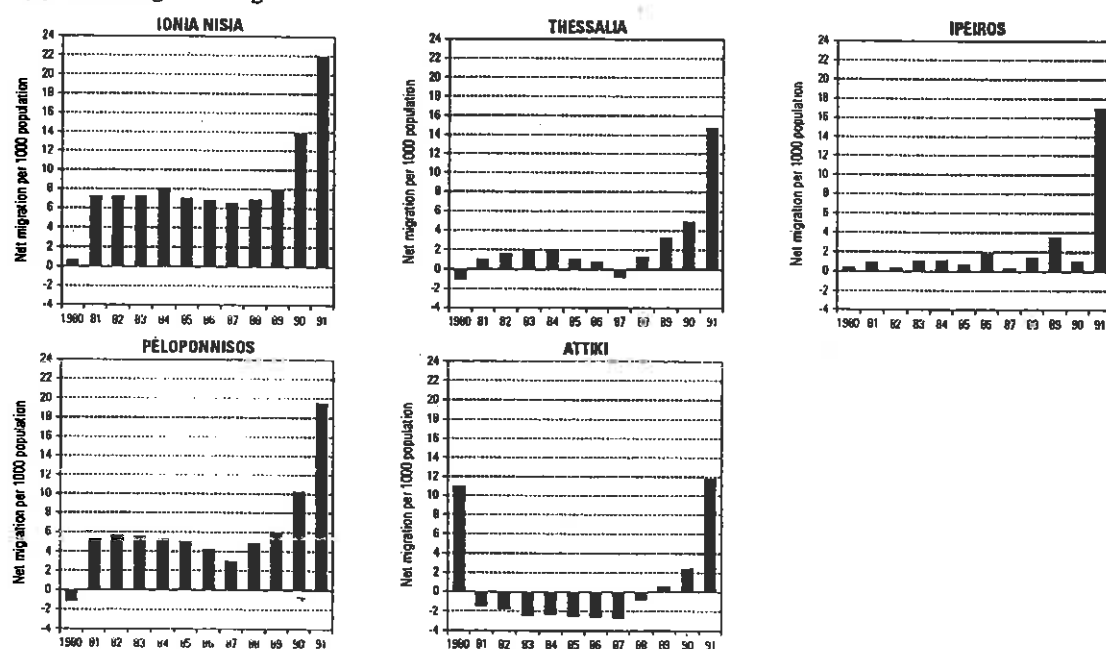
Notes

- (i) \*\* means significant at 0.01 level
- (ii) \* means significant at 0.001 level

(a) High growth regions



(b) Medium growth regions



(c) Low growth regions

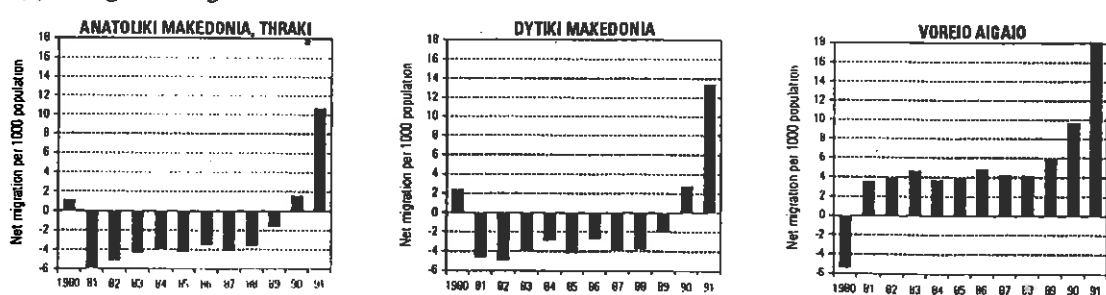


Figure 10: Net migration rates by region, 1980-91

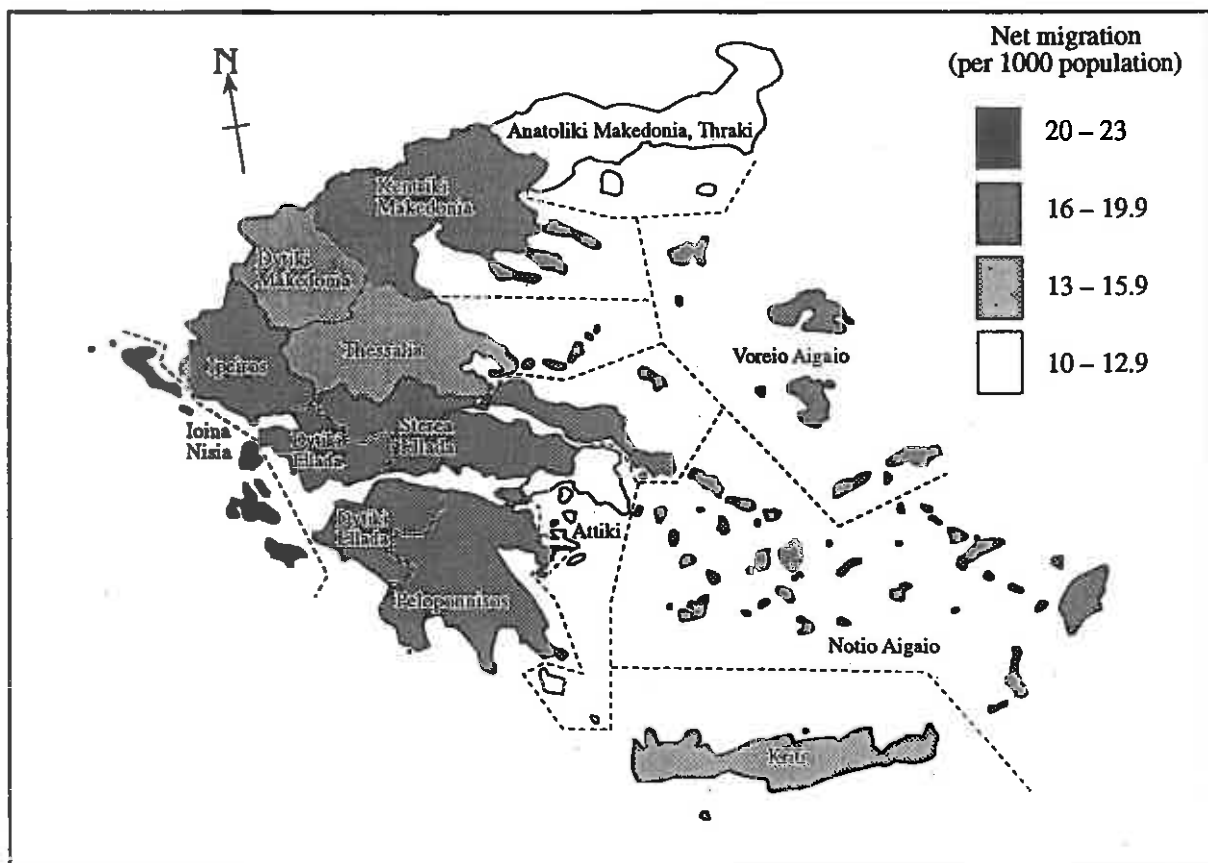


Figure 11: Net migration rates by region, 1991



#### 4. Internal migration

Population redistribution within Greece during the twentieth century has been dominated by migration shifts from rural to urban areas, and by massive flows to the Athens and Thessaloniki metropolitan areas in particular. The civil war, following the end of the Second World War, forced large numbers of people to migrate to the cities. Thereafter, polarisation between core and periphery resulted in the "severe sociocultural pauperization of the countryside" (Papademetriou, 1985) as the Greek Government neglected the rural areas and as investment activities were concentrated on the two big cities. Between 1951 and 1961, for example, the two large conurbations attracted over 600,000 people, and between 1965 and 1975, when the predominant flows occurred from rural and semi-urban areas to urban areas, 65% of migration was directed towards the two main metropoli (Giaoutzi, 1983). Rural out-migration, caused by the lack of jobs and available land in rural areas and the improved employment and income prospects in urban areas, has been composed typically of younger, unmarried males, a high proportion of whom were the best educated and the most skilled. The effects of this shift from the rural areas have been to continuously reinforce the dependence of the countryside on the country's central cities and to weaken the economic viability of the rural periphery. Some insights into the rural-urban patterns of migration for 1976-81 can be drawn from the 10% sample results from the 1981 Census.

##### 4.1 Rural-urban migration, 1976-81

The 1981 Census (NSSG, 1987) distinguishes migration flows into and out of areas classified as urban, semi-urban and rural. *Urban areas* consist of four area types:

- (i) the Athens and Thessaloniki areas;
- (ii) other cities with population over 50,000;
- (iii) cities with populations between 30,000 and 50,000; and
- (iv) urban areas with populations between 10,000 and 30,000 inhabitants.

*Semi-urban areas* are divided into settlements with populations between

- (i) 5,000 and 10,000; and between
- (ii) 2,000 and 5,000 inhabitants.

Finally, three *rural area* types are identified: those with

- (i) 1,000-2,000,
- (ii) 500-1,000, and
- (iii) less than 500 inhabitants.

In absolute terms, Athens and Thessaloniki gained almost 100,000 people through net

migration during the period, whereas net migration losses were confined to the three types of rural area. A massive loss of over 95,000 occurred from the rural areas with less than 500 inhabitants, equivalent to a rate of net loss of 82 persons per thousand. Thus, whilst Athens and Thessaloniki contained 38.3% of the nation's population by 1981, a further 30.3% were still living in rural areas of Greece with populations less than 1,000. Table 2 also indicates that Thessaloniki and the other cities with populations over 50,000 experienced over twice the net in-migration rate of Athens. Rates of net gain were much lower for areas with population between 2,000 and 30,000.

**Table 2: Population, 1891, and net migration, 1976-81, by area type**

Area type	1981 population		Net internal migration	
	No	% share	No	Rate
Athens	3,027,560	31.1	66,950	22.1
Thessaloniki	705,451	7.2	32,870	46.6
> 50,000	591,123	6.1	28,870	48.8
30,000-49,999	679,781	7.0	19,330	28.4
10,000-29,999	650,143	6.7	2,670	4.1
5,000-9,999	355,280	3.6	3,020	8.5
2,000-4,999	781,370	8.0	1,510	1.9
1,000-1,999	794,456	8.2	-15,940	-20.0
500-999	998,946	10.3	-44,040	-44.1
< 500	1,155,479	11.8	-95,240	-82.4
Greece	9,739,589	100.0	0	0.0

**Notes:**

- (i) Rates have been calculated using 1981 (end of period) populations and are expressed per thousand and population
- (ii) *Source: NSSG (1987)*

Almost 1.1 million people moved within Greece during this five year period. At the same time, there was a total inflow of approximately 0.2 million from abroad (Table 3). Rates of in-migration from elsewhere in Greece decline progressively as area size diminishes, from 156.5 per thousand into Athens to 51.6 per thousand into the rural areas with populations of 500-999. These figures indicate that the migration flows relating to rural areas are not all outflows, suggesting that there is a more complex pattern of movements taking place between areas at different levels in the hierarchy. Evidence from data for earlier periods has demonstrated that although the prevailing trend has been for large cities to grow faster than small cities, migration has taken place from rural to semi-urban areas as well as from urban and semi-urban areas to Athens and Thessaloniki (Giaoutzi, 1983). This would account for the continued net gains experienced by the smaller urban and semi-urban areas, who lose less to the bigger cities than they gain from the rural areas.

**Table 3: In-migration and immigration by area type, 1976-81**

Area type	In-migration		Immigration		In-migration/ immigration
	No	Rate	No	Rate	
Athens	474,370	156.5	82,210	27.2	5.8
Thessaloniki	105,470	149.5	30,930	43.8	3.4
> 50,000	76,070	128.7	12,490	21.1	6.1
30,000-49,999	87,190	128.3	20,450	30.1	4.3
10,000-29,999	71,030	109.3	13,700	21.1	5.2
5,000-9,999	40,670	114.5	7,500	21.1	5.4
2,000-4,999	70,980	90.8	14,410	18.4	4.9
1,000-1,999	51,780	65.2	16,880	21.2	3.1
500-999	51,570	51.6	19,080	19.1	2.7
< 500	62,420	54.0	15,030	13.0	4.2
Greece	1,090,910	112.0	232,680	23.9	4.7

**Notes:**

- (i) In-migration refers to inmoves from within Greece
- (ii) Immigration refers to inmoves from abroad
- (iii) Rates have been calculated using 1981 (end of period) populations and are expressed per thousand population
- (iv) *Source: NSSG (1987)*

Although Athens recorded the highest rates of in-migration from the rest of Greece, it did not have the highest rate of immigration from abroad, despite attracting 35% of all immigrants to Greece in 1976-81. This distinction went to Thessaloniki where the rate was 43.8 immigrants per thousand population. The lowest rates of immigration were recorded for the rural areas with the smallest populations. However, the ratio of in-migration to immigration shows that immigration was a relatively important component in rural areas with populations of between 500 and 2,000. On the other hand, for cities with over 50,000 inhabitants other than Thessaloniki, the ratio of in-migrants to immigrants was around six to one. The predominance of the flow of migrants to Athens is highlighted by the statistics in Table 3 which indicate that the capital city attracted 43.4% of all migrants coming from elsewhere in Greece during 1976-81.

Examination of the age selectivity of migration in Greece based on net migration balances for the aggregate area types (Table 4) exposes the importance of those aged 15-24 in the net exchanges taking place. Migrants in this age group accounted for 23% of all internal migration within Greece. A total of 80,000 net migrants were gained by the urban areas and lost from the semi-urban and rural areas. It is also apparent that losses were incurred in rural areas in all age groups whereas the profiles of both aggregate sets of urban areas showed losses in the 55-64 year-old, retirement age range. In total, Athens and Thessaloniki gained 99,800 whereas the rural areas lost 155,200; The difference was made up by gains of 50,800 by the other urban areas and 4,500 by the semi-urban areas.

**Table 4:** Net migration by age and area type, 1976-81

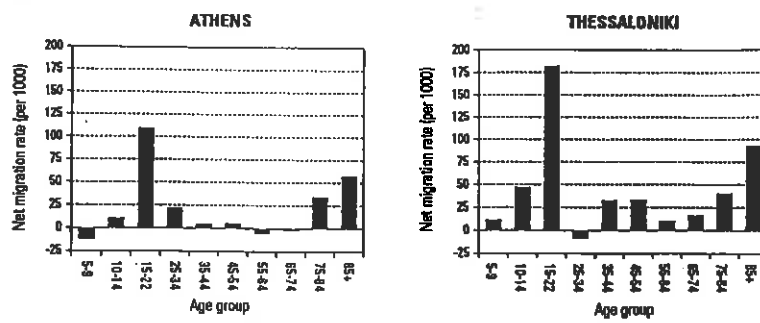
Age group	Athens and Thessaloniki	Other urban areas (> 5,000)	Semi-urban areas (2,000-4,999)	Rural areas (< 1,999)
5-9	-2,000	6,540	3,000	-7,540
10-14	4,900	6,730	1,690	-13,320
15-24	72,970	7,030	-11,680	-68,320
25-34	9,380	16,800	3,980	-30,160
35-44	4,530	9,560	2,820	-16,910
45-54	5,430	2,600	1,120	-9,150
55-64	-1,070	-350	1,780	-360
65-74	270	720	1,380	-2,370
75-84	4,040	1,080	320	-5,440
85+	1,300	190	130	-1,620
Unstated	70	-30	-10	-30
Total	99,820	50,870	4,530	-155,220

*Source: NSSG (1987)*

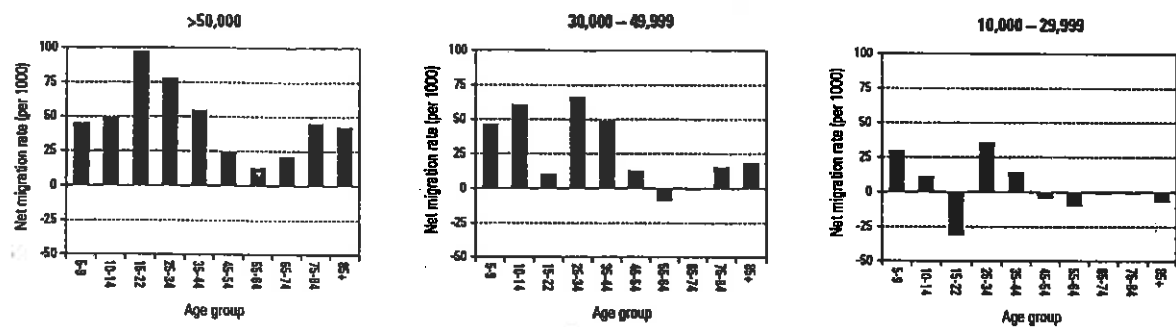
The age profiles of net migration standardised by area population size (Figure 12) provide further evidence of the composition of net migration balances for each type of area. Athens and Thessaloniki record the highest rates of net gain in the 15-24 age group; Athens gained over 50,000 net migrants in this age group and Thessaloniki gained nearly 22,000. Rates of net gain were also considerably higher for the elderly than those of middle age although the absolute numbers were very much smaller than the peak labour force age group. Unlike the two big cities, other cities with over 50,000 population experienced lower rates in the 15-24 ages but higher rates of gain in almost all other ages up to 75 years.

The rates of net gain in the 15-24 age group were much lower in the areas with populations of between 30,000 and 50,000, and at lower order area types, the net balance became negative. The rate of net out-migration of young persons aged 15-24 from the most rural areas reached 280 per thousand during this period, a total outflow of 38,000 individuals. The net migration rate profiles for both the semi-urban area types were characterised by net gains for all age groups except that of 15-24 years. In contrast, net losses in the three types of rural area occurred in virtually all age groups.

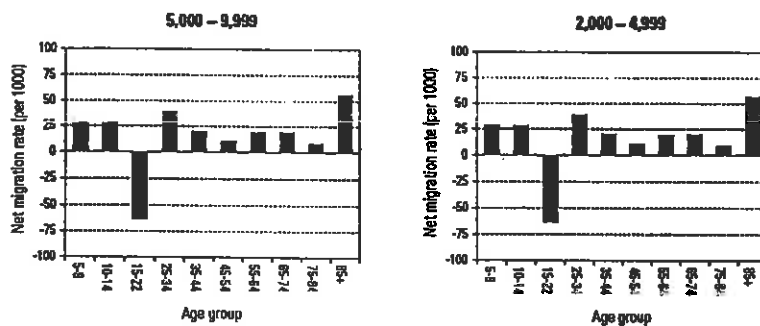
(a) Main urban areas



(b) Other urban areas



(c) Semi urban areas



(d) Rural areas

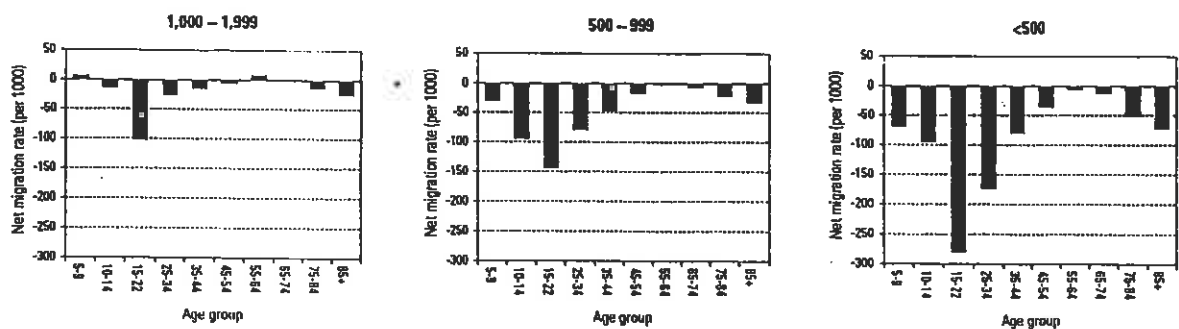


Figure 12: Net migration rates by age and area type, 1976-81

## 4.2 Inter-regional migration, 1984

Very little data are available with which to examine trends in migration since the 1981 Census. The most recent information on directional migration within Greece is that published in Eurostat (1989) for movements between the nine former NUTS 2 regions of Greece in 1984. These statistics are of limited value because of their aggregate character and small size of the sample that was undertaken, but they do demonstrate the relative volume of the exchange of population through migration between the former NUTS 2 region containing Athens, Anatoliki Sterea and Nisia, and other former NUTS 2 regions of Greece. Table 5 indicates the relative sizes of flows between this particular region and each of the other regions, in comparison with the sum of the flows for each region to and from elsewhere. The total of 55,500 migrants includes 15,700 migrants to Anatoliki Sterea and Nisia from other regions, 17,000 migrants from Anatoliki Sterea and Nisia to other regions. A further 22,900 migrants moved between the other regions, of which the major flow in 1984 was 6,000 between Ipeiros in the west and the islands of Nisia Anatolikou Aigaio in the east. This latter flow is particularly difficult to explain and may be the result of sampling error.

**Table 5:** Inter-regional migration to and from Anatoliki Sterea and Nisia and between all other regions, 1984

Former NUTS 2 regions	Anatoliki Sterea kai Nisia		All other regions	
	To	From	To	From
Peloponnisos and Dytiki Sterea	4,066	6,400	1,601	2,665
Kentriki and Dytiki Makedonia	3,534	2,600	4,731	5,600
Thessalia	2,266	1,600	1,601	2,334
Kriti	1,467	1,800	735	800
Nisia Anatolikou Aigaio	1,400	1,666	1,000	7,734
Thraki	1,267	1,066	2,400	1,800
Ipeiros	1,200	1,400	7,667	1,068
Anatoliki Makedonia	466	466	3,133	867
Total	15,666	16,998	22,868	22,868

Notes:

- (i) Anatoliki Sterea and Nisia contains the Athens conurbation
- (ii) Source: Eurostat (1989)

## 5. Conclusions

Whilst the population of Greece has risen steadily since the beginning of the 1980s, and whilst the Attiki region continues to dominate the population distribution and maintain its primacy, rates of annual growth throughout much of the decade have been less spectacular than in Kentriki Makedonia and certain other regions. A classification of NUTS 2 regions has been proposed on the basis of differing growth rates and has been used to present regional time series of natural change and net migration. Trends in these components are clear at the national level. Natural increase rates have declined steadily during the period whilst net immigration has only become important in the 1990s. Greece has become a country of net immigration after having experienced decades of net emigration. At the regional scale, natural change rates have fallen during the decade. However, the annual rates of regional population change appear to be linked with rates of net migration to a statistically significant extent.

The analysis based on the results of the 1981 Census has indicated that massive losses occurred during 1975-81 from the most rural areas, particularly of those aged 15-24, whilst Athens in particular attracted very large numbers of in-migrants. These results are further evidence of a continuation of trends that have been apparent in Greece during the post-war period. Whether this rural exodus has slowed or ceased to exist during the 1980s remains to be seen when the results of the 1991 Census become available and when a comprehensive analysis of the relationship between rural and urban areas can be undertaken.

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