Pergamon

0305-750X(95)00040-2

Western European Micro-States and EU Autonomous Regions: The Advantages of Size and Sovereignty

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Summary. — Western Europe has a large number of sovereign micro-states and, in addition, there are also a number of regions of the European Union (EU) which have an unusually high degree of autonomy. This paper examines the economic performance of these micro-states and autonomous regions which is found to be superior to that of adjacent EU regions. The strong economic performance of these micro-states and autonomous regions is shown to be closely related to activity in the financial services sector, tourism and, where present, natural resources. Complex differences among the group of micro-states and autonomous regions are also revealed.

1. INTRODUCTION

The economic performance of small states and island economies (micro-states) has attracted considerable recent interest (see *World Development*, 1993). In Western Europe in particular, there are a large number of such micro-states together with regions of states with an unusually high degree of autonomy. Some, such as Andorra, San Marino and Monaco, are located at the heart of the European Union (EU). Others such as the Faroes, the Azores and Malta are located on the distant periphery of the EU but are nevertheless closely linked to the steadily integrating economies of the EU member states.

In addition to their relatively large numbers, the Western European micro-states and autonomous regions are of particular interest because of the wide spectrum of economic and political relationships which they have with their nearest large-country neighbors and with the EU as a whole. Relationships range from complete sovereignty (e.g., Liechtenstein) to more limited autonomy with powers somewhat greater than a regional government in a federal system (e.g., the Canary Islands).

The paper compares GDP per capita and unemployment rates for the micro-states and autonomous regions with those of regions located fully within the EU. While part of the paper considers the micro-states and autonomous regions as a single group, the paper also examines differences in performance among individual micro-states and autonomous regions.

The paper begins with a discussion of the economic advantages and disadvantages faced by micro-states and autonomous regions. This is followed by an examination of the problems involved in drawing up a list of micro-states and autonomous regions for inclusion in the analysis. Because of the extraordinary array of political and economic relationships left as a legacy of Europe's complex history, this is a much more difficult task than might be expected. Attention is then turned (in section 4) to the problems encountered in assembling economic statistics for the Western European micro-states and autonomous regions. Section 5 compares the economic characteristics of the micro-states and autonomous regions with regions wholly within the EU and examines possible explanations for the superior performance of the micro-states.

2. ECONOMIC THEORY AND THE MICRO-STATE

The large numbers of very small states in the world economy and the enormous variation in their economic performance has been the subject of considerable debate for many years. This has raised

fundamental issues concerning the advantages and
disadvantages of size and sovereignty although the
actual criteria used to define micro-states vary greatly.
In spite of this attention in the literature, the papers
collected in Robinson (1960) remain the principal
substantive contribution to the theoretical analysis of
micro-states. More recent analyses have generally
failed to develop further many of the ideas originally
contained therein.

Much of the theoretical literature maintains that
micro-states are greatly handicapped by lack of size in
their pursuit of economic viability with few, if any,
compensating advantages (Kuznets, 1960; Tarshis,
1960; Dommen, 1980; Selwyn, 1980; Jalan, 1982;
Smith, 1987; Ahmad, 1991; Treadgold, 1991;
Streeten, 1993). The principal disadvantages of small
size are identified as being: a small and undiversified
natural resource base; output and export concentra-
tion, with increased risks arising from poorly diversi-
fied export markets; problems associated with having
a small domestic market, often below the minimum
efficient scale of output, which raises costs (particu-
larly of nontradeables) and reduces competition; and
additional problems, often associated with micro-
states, of being either islands or land-locked. It has
even been argued that, in some cases, the inherent dis-
advantages of small size may be virtually insuperable
such that absorption into a larger entity via economic
and/or monetary integration may be the only feasible
strategy (Marcy, 1960; Scitovsky, 1960; Triffin, 1960;
Benedict, 1967; Knox, 1967).

It is evident that the general conclusion of economic
theory concerning micro-states is that their size con-
stitutes a significant impediment to sustained eco-
nomic growth, especially in the case of island and
land-locked states. The literature identifies very few
advantages arising from smallness and these are
clearly expected to be outweighed by the disadvan-
tages. It can be argued however, that economic theory
has placed undue emphasis upon the inherent eco-
nomic disadvantages encountered by micro-states and
surprisingly little attention has actually been paid to
identifying the potential advantages which might also
arise. Cursory observation suggests that Hong Kong,
Liechtenstein and Singapore have clearly been very
successful by any criterion. Neither does there appear
to be any systematic adverse empirical relationship
between small size and economic performance (Milner
and Westaway, 1993).

The few advantages derived from small size
identified in the micro-state literature are generally
intangible and therefore impossible to quantify. For
example, it has been frequently asserted that micro-
states have greater social homogeneity and cohesion,
greater social flexibility and openness to change
(Kuznets, 1960). These attributes facilitate greater sin-
gle-mindedness and focus in economic policy making
and a more rapid and effective response to exogenous

change. Because of their small size, micro-states are
also, of necessity, highly dependent upon international
trade with the nontradeables sector subject to an acute
size constraint. Micro-states therefore have little
choice but to ensure that their tradeables sector is com-
petitive at world prices and has greater efficiency and
flexibility than their (larger) state competitors. These
effects are also difficult to quantify but embody the
size-induced open orientation of trade policy (effec-
tive exchange rates), scale economies and specialized
or niche production. The outstanding economic suc-
cess of many micro-states, both in Southeast Asia and
Western Europe, is contrary to the predictions of the-
ory and so raises several important issues.

The first issue relates to whether the problem itself
has been misspecified. Theory is concerned with the
advantages and, in particular, the disadvantages asso-
ciated with small size. If there are considerable disad-
vantages but few advantages also associated with
larger size then relative size may have an insignificant
impact upon economic performance. This is some-
what analogous to the neoclassical framework with
constant returns to scale, perfect markets, perfect
information and zero transport costs. The theory of
micro-states as outlined above, however, stresses the
link between small size and suboptimality in terms of
the minimum efficient scale of output, competition
and efficiency (Scitovsky, 1960). Incorporating sub-
optimality both surmounts the methodological prob-
lem and acknowledges that the global economy is
characterized by imperfections.

An additional issue raised by the preceding discus-
sion is the specification of small size itself. This has
been the subject of some debate in the literature with
little agreement as to the precise definition of a micro-
state or which measure of size is most appropriate
(Kuznets, 1960; Khatkhate and Short, 1980; Jalan,
1982; Dommen and Hein, 1985; Glassner and De Blij,
1989; Streeten, 1993). The principal criteria of size are
generally population and geographic area. As both of
these variables are continuous, any break point is
essentially arbitrary. A truly economic definition of
small size should address the impact of suboptimality
upon the structure of domestic output. Increasing returns
to scale in most economic activity means that genuine
micro-states therefore must tradeoff the lower costs of
specialization in production against the lower risks of
diversification. This tradeoff, however, is independent
of the size of the domestic market (discussed below).

Finally, it could be argued the relative success of
some micro-states may be explained by additional
factors previously overlooked by the theory. In some
cases, it is possible to identify particular characteris-
tics which have a very strong positive or negative
impact upon the economic performance of a single
micro-state (e.g., oil in Kuwait, Abu Dhabi, etc.).

From a methodological perspective, however, it is
necessary to distinguish between those factors which

are unique to a particular micro-state and those which are consistently associated with economic success or its absence. The search for a general explanation has often been concerned with combining existing variables or identifying additional variables (e.g., Dommen, 1980). If it is accepted that a micro-state is by definition suboptimal, however, then explanations of its relative success (or failure) can be analyzed primarily in terms of the endogenous policies adopted to offset the adverse impact of suboptimality (this follows Marcy, 1960; Scitovsky, 1960; Svennilson, 1960; Triffin, 1960). These policies relate primarily to achieving international competitiveness in production, in spite of a small domestic market. This is undertaken through openness to trade and the guaranteeing of exchange rates to reduce the degree of vulnerability to exogenous shocks brought about by undiversified outputs and exports. They may, in addition, offset some of the problems of high transport costs but only indirectly.

This methodological approach relocates the analysis of the performance of micro-states in the theoretical mainstream of optimal policy formulation in small open economies, particularly with respect to trade and exchange rates. In so doing, it opens up a fruitful avenue of research based upon an established theoretical framework. As such, it is likely to generate rather more subtle conclusions than those reached in some of the existing literature. Integration, for example, requires a micro-state to sacrifice some degree of economic and/or monetary sovereignty. This may lead therefore, to the imposition of joint policies which exacerbate rather than ameliorate the inherent disadvantages of small size. This argument can be extended to the case of (small) autonomous regions which are part of a macro-state. While theory suggests that an autonomous region should outperform a micro-state by avoiding the disadvantages of small size through integration, limited sovereignty may remove its ability to formulate and implement policies to promote growth.

3. THE DEFINITION OF WESTERN EUROPEAN MICRO-STATES AND AUTONOMOUS REGIONS

All micro-states and autonomous regions are, to some degree, unique entities. Any definition of a list of states and regions for inclusion in the analysis is therefore, to some extent, inherently arbitrary. The choice of micro-states used in this paper is based upon three criteria.

(a) Size

The size of a country is the key criterion for classifying it as a micro-state. It is evident from the theoretical literature, however, that there is little agreement concerning the precise definition of a micro-state or

which measure of size is most appropriate (Kuznets, 1960; Khatkhate and Short, 1980; Jalan, 1982; Dommen and Hein, 1985; Glassner and De Blij, 1989; Streeten, 1993). The principal criteria of size are generally population and geographic area. Population size is the most frequently used criterion. In some studies, a distinction is drawn between micro-states and mini-states. This distinction is rarely clear, however; important population differentiation criteria of 0.5 or one million persons are frequently used but these have no inherent theoretical or logical basis (see section 2). This paper utilizes a pragmatic approach. Micro-states are identified using three indicators of size: population, GDP and geographical area. Instead of a rigid size limit, a natural break has been sought between larger states and micro-states, concentrating in particular on population and GDP — geographical size being usually regarded as rather less important in the literature.

(b) Economic links with the EU

The degree of openness of an economy is an important feature of all micro-states. A particular feature of small states is their openness to international trade (Kuznets, 1960), although factor mobility may also be high. The concern of the paper is with the EU. The choice of micro-states for inclusion is therefore confined to entities which are either located within the EU and/or which are closely tied economically to the EU. For this reason, the French overseas territories (DOMs) have been excluded from the analysis despite their status within the EU. They are simply too isolated geographically from the EU to be included in the analysis. On the other hand, Cyprus and Iceland are included because of their links with the EU.

(c) Degree of sovereignty

The literature draws a distinction between those small states which are sovereign and those which are regions of a larger state but which enjoy an unusual degree of autonomy from the central government. This distinction is of tremendous importance in Western Europe because of the long and complex history of the European states. This has resulted in the existence of a number of regions which lack full sovereignty but which are highly autonomous when compared with other regions within the same state. Excellent examples of such autonomous regions are the Canary Islands of Spain and the Azores of Portugal. Again, a pragmatic approach has been taken toward the choice of which autonomous regions to include. With unique entities such as these, absolute standards for inclusion cannot be established.

The population, GDP and area of the micro-states and autonomous regions chosen for inclusion in the

Table 1. *Characteristics of Western European micro-states and autonomous regions*

	Population 1989 ('000s)	GDP 1989 (Ecu million)*	Area (kilometers²)
Cyprus	565	4,144	9,251
Iceland	253	4,858	103,000
Malta	352	1,745	316
Liechtenstein	29	1,020	160
Andorra	51	811	468
San Marino	23	307	61
Canaries	1,461	13,098	7,242
Ceuta & Melilla	123	899	31
Isle of Man	68	534	572
Guernsey	58	822	63
Jersey	83	1,577	16
Gibraltar	31	310	6
Madeira	254	692	794
Azores	239	644	2,247
Faroes	48	881	1,400
Monaco†	NA	NA	NA
Vatican City†	NA	NA	NA

Source: For Ceuta & Melilla and the Canaries, Eurostat. For the remainder: data collected by the authors from the states concerned (see section 4).
* GDP values have not been adjusted for purchasing power parities.
† As GDP statistics are not available for Monaco and the Vatican City, these two micro-states have been excluded from the analysis.

Table 2. *Characteristics of major European Union member states*

	Population 1989 ('000s)	GDP 1989 (Ecu million)*	Area (kilometers²)
West Germany	61,990	1,079,900	248,706
Italy	57,540	786,500	301,277
United Kingdom	57,236	760,200	244,111
France	56,161	870,300	543,965
Spain†	37,104	331,203	497,517
Netherlands	14,846	203,200	41,863
Greece	9,992	49,200	131,957
Belgium	9,938	139,000	30,518
Portugal†	9,793	41,100	91,971
Denmark†	5,132	90,700	43,080
Ireland	3,515	30,800	68,895
Luxembourg	377	6,400	2,586

Source: Eurostat.
* GDP values have not been adjusted for purchasing power parities.
† Data for Spain, Portugal and Denmark exclude Ceuta & Melilla and the Canaries, Madeira and the Azores, and the Faroes, respectively.

analysis are set out in Table 1. These can be compared with the characteristics of the 12 EU member states set out in Table 2. The most marginal of the micro-states included in Table 1 are Cyprus and Iceland. Although Cyprus sits comfortably within the set of micro-states in terms of population, area and size of economy (as measured by GDP), it is not strictly within Western Europe. It has close links with the EU in general, however, through its Association Agreement, and with Greece in particular. Cyprus has also promoted itself strongly as an offshore investment center (competing

actively with Malta). Iceland is at the opposite extreme of Europe and although geographically large, it has a tiny population and a relatively small GDP. Iceland is also closely linked to the Western European economic system.

Luxembourg has been excluded from the list because, although it constitutes a micro-state on any criterion of size — geographic, demographic and economic, it is a full member state of the EU. Since the purpose of the paper is to compare the performance of the micro-states and autonomous regions within the

EU, Luxembourg cannot be said to be separate from the EU or to have unusual autonomy within the EU.

The study year (1989) was chosen for data availability reasons; information was obtained from all of the chosen micro-states and autonomous regions except Monaco and the Vatican City. Monaco does not collect GDP or unemployment statistics, although certain other economic data are available. The distinctive nature of the Vatican City makes the collection of economic statistics a meaningless exercise. The particular relationship enjoyed between each micro-state and autonomous region and the EU, together with some of the important economic characteristics of each, is set out in more detail in Appendix A.

4. THE DATA SET

There are three reasons underlying the choice of GDP per capita and unemployment rates as the principal indicators for the comparison of the economic performance of the chosen micro-states and autonomous regions with the other regions of the EU. GDP per capita and unemployment rates are familiar and widely used economic indicators for the comparative analysis of regional and national economies. The Eurostat database REGIO contains regularly collected harmonized statistics for GDP and unemployment rates for the regional economies of the EU member states. It is convenient, therefore, to concentrate on the economic statistics for which the best EU regional data sets exist. The micro-states and autonomous regions of Western Europe invariably lack the resources to undertake the kind of data-collection efforts possible at EU level. It is important, therefore, to utilize those economic indicators for which data are collected by a majority of the selected micro-states and autonomous regions. GDP and unemployment statistics are produced by most, but not all, of the chosen states.

The Eurostat REGIO database presents regional statistics at a number of different levels of geographic aggregation. In this paper, the NUTS2 level of aggregation has been chosen. There are some 170 NUTS2 regions, several of which are autonomous regions according to the definition being used in this paper. Ideally, the use of the smaller and more numerous NUTS3 Eurostat regions would be preferable. These are more comparable in geographical size to many of the micro-states and autonomous regions which are the focus of this paper. The NUTS2 regions were chosen in preference, however, for two reasons. The Eurostat NUTS2 GDP and unemployment data are better than NUTS3 data and have fewer omitted values. In addition, it is possible to obtain data on a wider array of other economic characteristics at NUTS2 level than at NUTS3 level.

The collection of GDP and unemployment data for micro-states and autonomous regions is seriously con-

strained by their lack of resources to undertake the regular collection of statistics. It is impossible, therefore, to select a year for which data are available for the full set of micro-states and autonomous regions. Two steps were taken to minimize this problem. First, great care was taken to select a study year (1989) which maximized the number of micro-states and autonomous regions for which appropriate GDP and unemployment statistics were available. Secondly, where GDP or unemployment data were not available for 1989 but were available for some other year, adjustments were made to the statistics. The full data set used in the paper and the adjustments made, where relevant, are described in Appendix B.

There remains a significant problem in that the GDP and unemployment figures for the micro-states (and those EU autonomous regions which are not part of the REGIO data base) are not collected on a harmonized basis with EU regional statistics. In such circumstances, there is greater-than-normal uncertainty in the data utilized. The approach adopted in the paper has therefore been a twofold one. Where possible, the results obtained have been qualified by reference to the particular nature of the micro-state's GDP or unemployment data. More generally, in view of the data uncertainties, the GDP and unemployment figures for the micro-states and autonomous regions have only been treated as broad orders of magnitude. Only those results which show large differences with EU counterpart regions should be treated as having significance. Minor variations should be ignored.

5. THE RELATIVE ECONOMIC PERFORMANCE OF THE MICRO-STATES AND AUTONOMOUS REGIONS

The micro-states and autonomous regions of Western Europe do not appear, at first sight, to be very different in terms of the level of economic development from the regions of the fully fledged EU member states. GDP per capita and unemployment rates for the main EU member states and for the micro-states and autonomous regions are presented in Tables 3 and 4. The micro-states and autonomous regions exhibit a very wide range of per capita GDP values, from ECU 35,414 per capita in Liechtenstein to ECU 2,696 per capita in the Azores. This is actually a wider range of per capita GDP values than is exhibited among the EC NUTS2 regions in the REGIO data set. The unemployment rates of the micro-states and autonomous regions also show a wide range of values. If the extremely high unemployment rates found in Ceuta & Melilla and the Canary Islands are set to one side, however, the remainder of the micro-states and autonomous regions appear to have remarkably low unemployment rates in comparison with those shown for the EC NUTS2 regions in Table 3. There therefore

Table 3.   *GDP per capita and unemployment rates for European Union NUTS2 regions, 1989*

	GDP per capita (Ecu)		GDP per capita (Ecu PPS)		Unemployment rate (%)	
	Max	Min	Max	Min	Max	Min
West Germany	27,023	12,114	29,851	13,382	10.6	2.8
Italy	18,319	7,507	23,911	9,799	25.5	3.5
United Kingdom	20,861	9,871	28,901	13,676	17.3	2.2
France	23,183	11,321	27,980	13,663	13.2	5.3
Spain	11,956	5,695	17,854	8,504	27.2	9.6
Netherlands	18,096	8,888	23,278	11,433	12.0	6.0
Greece	6,260	3,643	11,897	6,923	9.4	2.6
Belgium	21,900	10,378	27,320	12,959	13.3	4.3
Portugal	5,332	3,467	12,013	7,812	11.7	3.0
Denmark*	18,531		18,472		7.7	
Ireland*	8,762		11,522		17.1	
Luxembourg	16,976		22,281		1.7	

Source: See Table 2.
* Separate subregional data for Ireland and Denmark are not available.

Table 4.   *GDP per capita and unemployment rates for micro-states and autonomous regions, 1989 *†*

	GDP per capita (Ecu)	GDP per capita (Ecu PPS/PPP)	Unemployment rate (%)
Cyprus	7,334	15,084	2.3
Iceland	19,201	21,066	1.6
Malta	4,959	10,201	3.7
Liechtenstein	35,414	33,657	0.0
Andorra	15,962	23,836	0.0
San Marino	13,366	17,446	4.9
Canaries	8,964	13,386	22.5
Ceuta & Melilla	7,324	10,936	31.6
Isle of Man	7,907	10,954	1.7
Guernsey	14,298	19,809	0.3
Jersey	19,108	26,473	0.4
Gibraltar	10,086	13,973	4.4
Madeira	2,725	6,139	5.6
Azores	2,696	6,073	2.6
Faroes	18,422	18,364	0.6

Source: See Table 1.
* Monaco and Vatican City data not available. † All figures 1989 except Gibraltar and Faroes unemployment, both January 1990.

appear to be significant unemployment rate advantages for the micro-states and autonomous regions compared with EU NUTS2 regions.

The problem of comparison with the rest of the EU (Tables 3 and 4) is that the figures do not allow for the particular characteristics of the micro-states and autonomous regions and so do not therefore compare like with like. Some of the micro-states and autonomous regions, for example, are island economies which are extremely isolated from the mainstream EU economies or are within the economic orbit of the much less prosperous "southern" member states of the EU (i.e. Spain, Portugal, and Greece). The real issue, therefore, is not the absolute level of their per capital GDP or unemployment, but the level relative to what might reasonably be expected from a small isolated economy.

A better perspective on the advantages of local sovereignty or autonomy can be obtained by comparing

the performance of the micro-states and autonomous regions with adjacent EU regions rather than with all EU NUTS2 regions (Table 5). The picture which emerges from an examination of Table 5 is a rather mixed one. In the majority of cases, GDP per capita for the micro-states and autonomous regions appears to be higher than that for the adjacent EU regions. In some cases, such as Andorra and Liechtenstein, the gap between GDP per capita in the micro-state and the adjacent EU regions is very large. There are, however, some notable exceptions. Malta, Madeira, the Azores, the Isle of Man and San Marino all have GDP per capita values lower than the adjacent EU regions.

A comparison between the unemployment rates in micro-states and autonomous regions and adjacent EU regions is shown in Table 6. In this case, the weighted average unemployment rates in the adjacent EU regions use regional working populations as weights. The

Table 5. *GDP per capita of Western European micro-states and autonomous regions and adjacent EU member state NUTS2 regions, 1989*†*

|	GDP per capita (Ecu)		GDP per capita (Ecu at PPS/PPP)	
	Micro-state	Adjacent regions	Micro-state	Adjacent regions
Cyprus	7,334	5,003	15,084	9,508
Iceland	19,201	17,948	21,066	18,611
Malta	4,959	9,051	10,201	11,814
Liechtenstein	35,414	18,513	33,657	22,590
Andorra	15,962	11,656	23,836	15,849
San Marino	13,366	16,236	17,446	21,193
Canaries	8,964	6,619	13,386	10,025
Ceuta & Melilla	7,324	6,759	10,936	10,094
Isle of Man	7,907	10,260	10,954	14,027
Guernsey	14,298	12,564	19,809	16,298
Jersey	19,108	12,564	26,473	16,298
Gibraltar	10,086	6,759	13,973	10,094
Madeira	2,725	6,201	6,139	10,672
Azores	2,696	4,197	6,073	9,456
Faroes	18,422	17,948	18,364	18,611

Source: See Table 1.

* The GDP per capita estimates for adjacent EU NUTS2 regions are the weighted averages of GDP per capita values of the regions. Regional population weights used throughout.

† The identification of EU NUTS2 regions adjacent to the micro-states and autonomous regions is to some extent a different process. Two principles have been used to identify adjacent regions. First, contiguity with the particular micro-state or autonomous region has been utilized. This must be modified where the micro-state or autonomous region is an island. Here contiguity is interpreted as the nearest EC NUTS2 regions together with the NUTS2 region containing the main ferry port for island freight and passenger traffic (e.g., Lisboa e Vale do Tejo for Azores and Madeira). The second principle utilized in identifying adjacent regions has been that where any doubt exists, the approach has been to err on the side of incorporating all possible adjacent EC regions. This probably results in some understating of the economic advantages of peripheral micro-states and autonomous regions since the adjacent EC regions, as defined, will tend to include some rather less peripheral and hence prosperous regions than would otherwise be the case (e.g., Lisboa in the comparison with the Azores). The adjacent EC NUTS2 regions used in this table are as follows:

— Cyprus (Attiki, Voreio Aigaio, Notio Aigaio, Kriti).
— Iceland (Denmark, Highlands & Islands, Grampian).
— Malta (Sicilia).
— Liechtenstein (Tubingen, Oberbayern, Schwaben, Lombardia, Trentino-Alto Adige).
— Andorra (Midi-Pyrennees, Languedoc-Roussillon, Catalunya).
— San Marino (Emilia-Romagna, Marche).
— Canaries (Andalucia, Algarve).
— Ceuta & Melilla (Andalucia).
— Isle of Man (Lancashire, Merseyside, Clwyd-Dyfed, etc., Dumfries-Galloway-Strathclyde, Northern Ireland, Republic of Ireland).
— Guernsey (Basse Normandie, Bretagne, Surrey & W/E Sussex, Hampshire & Isle of Wight).
— Jersey (Basse Normandie, Bretagne, Surrey & W/E Sussex, Hampshire & Isle of Wight).
— Gibraltar (Andalucia).
— Madeira (Algarve, Lisboa e Vale do Tejo, Andalucia).
— Azores (Norte, Centro, Lisboa e Vale do Tejo, Alentejo, Algarve).
— Faroes (Highlands & Islands, Grampian, Denmark).

The three cases where the definition of adjacent regions for comparative purposes is most difficult are Liechtenstein, Iceland and the Faroes. Liechtenstein lies between two non-EU states, Switzerland and Austria. Using these two countries as alternative points of comparison to those set out above makes little difference. In 1989, GDP per capita in Switzerland was 24,781 Ecus while that in Austria was 15,036 Ecus. Both of these are well below that of Liechtenstein. Iceland and the Faroes present greater difficulties. It could be argued that the appropriate points of comparison for Iceland would be Norway and/or Sweden, with GDP per capita in 1989 of 19,519 Ecus and 20,310 Ecus respectively. On this comparison, Iceland would be performing less well than its designated adjacent regions. Such a comparison, however, fails to reflect Iceland's isolated and island status. It is argued that the chosen comparator regions are therefore more appropriate. A similar argument applies to the Faroes in that a direct comparison with Denmark would be inappropriate. GDP per capita on the Danish mainland in 1989 was 14,244 Ecus, again significantly lower than that of the Faroes.
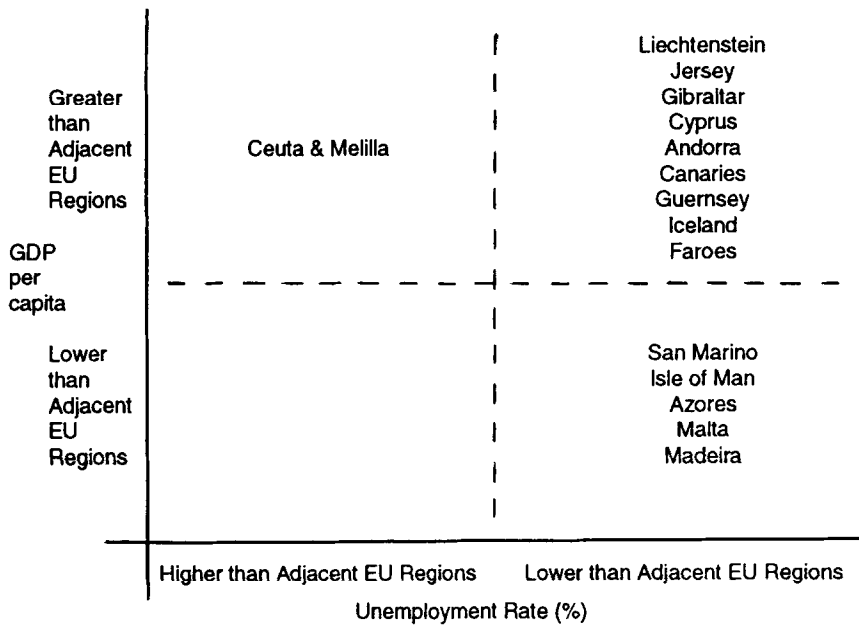
Source: See Table 1.
Figure 1. *A classification of micro-states and EU autonomous regions. GDP per capita values expressed as PPP/PPS give almost identical results except for the Faroes which falls marginally within the lower right quadrant using PPS. For definitions of adjacent EU regions, see Table 5.*

results in Table 6 are striking. With the sole exception of Ceuta & Melilla, all of the micro-states and autonomous regions have unemployment rates below those of the adjacent EU regions. In virtually all cases, the difference between the two rates is extremely large.

Table 6. *Unemployment rates for micro-states/autonomous regions and adjacent EU member state NUTS2 regions, 1989**

	Unemployment rate (%)	
---	Micro-state	Adjacent regions
Cyprus	2.3	8.3
Iceland	1.6	7.7
Malta	3.7	22.0
Liechtenstein	0.0	3.6
Andorra	0.0	12.8
San Marino	4.9	5.8
Canaries	22.5	26.0
Ceuta & Melilla	31.6	27.2
Isle of Man	1.7	13.7
Guernsey	0.3	5.8
Jersey	0.4	5.8
Gibraltar	4.4	27.2
Madeira	5.6	18.8
Azores	2.6	4.9
Faroes	0.6	7.7

Source: See Table 1.
* For details of calculations and definitions of adjacent EU regions, see Table 5.

The implication to be drawn from the comparison of GDP per capita and unemployment rates would appear to be that sovereignty or autonomy is, on average, no disadvantage to the micro-states and autonomous regions when they are compared to adjacent EU regions. The micro-states enjoy particularly low unemployment rates while the gains in terms of GDP per capita are less striking, however, and are by no means universal.

The results from Tables 5 and 6 are summarized in Figure 1 from which several conclusions can be drawn:

— Nine of the micro-states and autonomous regions are found to be clear "two-time winners" in that they outperform adjacent EU regions in having both higher GDP per capita and lower unemployment rates (i.e. in the top right quadrant of Figure 1).

— Six micro-states and autonomous regions are found to be "partial winners" in that they score better than adjacent regions in having either higher GDP per capita values (Ceuta & Melilla — top left quadrant) or lower unemployment (Malta, San Marino, Isle of Man, Madeira and Azores — bottom right quadrant) but not both.

— None of the micro-states and autonomous regions are found to be "two-time losers" with both lower GDP per capita and higher unemployment than adjacent EU regions (bottom left quadrant).

Although the comparisons set out in Figure 1 are valuable, they only provide a partial analysis of the performance of Western European micro-states and autonomous regions. The small number of observations available (15 in total) and the inadequacy of data on key variables means that the development of a full explanatory model of the differences between the micro-states and autonomous regions in their degree of success is not feasible. An improved understanding as to why some micro-states and autonomous regions do better than others can be obtained through applying the technique of discriminant analysis. A set of qualitative (binary) variables were derived for the 15 micro-states and autonomous regions. These comprise variables which are known to be important from previous work on regional differences in GDP per capita and unemployment in the EU (Commission of the European Communities, 1986; 1991), together with other likely determinants of the economic success of micro-states and autonomous regions. It proved possible to derive six binary variables.

(a) Economic potential (ECPOT)

This measures the peripherality of each micro-state and autonomous region, and is given as:

$$ECPOT_i = \Sigma_j \left(GDP_j / D_{ij} \right) \qquad (1)$$

where i = micro-state or autonomous region (i = 1...i...15); GDP_i = gross domestic product of region j (j = 1...j...167); D_{ij} = airline distance (km) from i to all other EU NUTS2 regions (j = 1...j...167).

The micro-states and autonomous regions exhibit, in the main, very low *ECPOT* values compared to EU NUTS2 regions, reflecting the peripheral locations of most of them. To convert *ECPOT* to a binary variable, micro-states and autonomous regions with *ECPOT* values greater than the average value for the micro-states (13.1m ECU) have been allocated a value "1." Those with *ECPOT* values lower than 13.1m ECU have been designated "0." Previous research using EU regions suggests that areas with lower *ECPOT* values usually exhibit low GDP per capita and high unemployment rates (Keeble, Owens and Thompson, 1982; Keeble, Offord and Walker, 1988).

(b) Share of agricultural employment (AGRIC)

Micro-states and autonomous regions with agricultural workforces in excess of the EU NUTS2 regional average of 10% of the workforce (1987) have been allocated a "1" value. Others are allocated a "0" value. Within the EU, regions with a large agricultural sector usually perform less well.

(c) Island

This is a binary variable taking a value of "1" if the micro-state or autonomous region is an island or island group and "0" otherwise. Islands typically face greater transport costs and difficulties in gaining access to EU markets. The *ECPOT* variable does not fully allow for these problems.

(d) Tourism

This variable is designed to indicate whether ("1") or not ("0") tourism is an important sector within the economy of the micro-state or autonomous region in 1989. Inadequate data have meant that assumptions based upon sectoral GDP, employment and other information (e.g. numbers of visitors, overnight stays, etc.) provided by each micro-state and autonomous region have had to be made in constructing this variable. The *TOURISM* group was defined to include Andorra, the Canary Islands, Cyprus, Gibraltar, Guernsey, Jersey, Madeira, Malta and San Marino.

(e) Financial

This variable is designed to indicate the importance ("1") or otherwise ("0") of financial services in the economy of the micro-state or autonomous region. As in the case of *TOURISM*, inadequate data have meant that qualitative data and assumptions have been used in constructing the variables. Cyprus, Madeira and Malta are not classified as members of the *FINANCIAL* group because in 1989 their financial services sectors were at an early stage of development.

(f) Natural resources (RESOUR)

States heavily dependent on the exploitation of an indigenous natural resource (i.e. Iceland and the Faroe Islands) are distinguished from those with no significant natural resource base.

In discriminant analysis, a linear combination of the independent variables (the six binary variables listed above) is produced and used to classify cases (the states) into groups. The linear discriminant function takes the general form:

$$D = b_0 + b_1 X_1 + ... + b_n X_n \qquad (2)$$

where D is the score on the discriminant function, the X values are the independent variables and the b coefficients are to be estimated. The weighting coefficients (b values) are analogous to the beta coefficients in regression analysis and can be used to identify the

Table 7. *Discriminant analysis of micro-states and autonomous regions, 1989*

(a)   Method: stepwise variable selection (Wilks's method).

(b)   Independent variables: six binary variables, *FINANCIAL, RESOUR, TOURISM, AGRIC, ISLAND* and *ECPOT*, where:
       1. *FINANCIAL*   =   presence or absence of large financial services sector.
       2. *RESOUR*   =   reliance or nonreliance upon large natural resource base.
       3. *TOURISM*   =   presence of absence of a strong tourism sector.
       4. *AGRIC*   =   agricultural employment share greater or lower than EU NUTS 2 regional average.
       5. *ISLAND*   =   island or nonisland status.
       6. *ECPOT*   =   economic potential measure greater or lower than micro-state average.

(c)   Variables entering final function (i.e., satisfying tolerance level and F-to-enter criteria, where minimum tolerance level:
       0.001; minimum F-to-enter: 1.000. Selection rule: minimize Wilks's lambda): *FINANCIAL, RESOUR, TOURISM,
       AGRIC* and *ISLAND* (in sequence).

(d)   Standardized canonical discriminant function coefficients:
       FINANCIAL   1.85305
       RESOUR   2.26180
       TOURISM   0.96659
       AGRIC   1.23503
       ISLAND   −0.79569

(e)   Model fit:

Summary table: step variable entered	Wilks's lambda	Significance
1. *FINANCIAL*	0.84877	0.1520
2. *RESOUR*	0.62831	0.0615
3. *TOURISM*	0.47414	0.0360
4. *AGRIC*	0.37177	0.0294
5. *ISLAND*	0.26959	0.0195

Eigenvalue*	=	2.7093
Canonical correlation[†]	=	0.8586
Wilks's lambda[‡]	=	0.2696
Chi-square[§]	=	13.764 (DF = 5; signif 0.0172)
Equivalent *F*-statistic	=	4.87691 (DF 5, 9; signif 0.0195)
Degree of correction classification	=	14 of 15 cases.
(Misclassified	=	Cyprus)

* Eigenvalues measure the ratio of the between group sums of squares to within-group sums of squares. Large eigenvalues
imply a "good" discrimination function.
† In a two-group case, the canonical correlation is equivalent to the value of the Pearson correlation coefficient between the
discriminant score and the binary group variable. A larger value is therefore to be preferred.
‡ Wilks's lambda. In a two-group case this gives the ratio of the within-group sum of squares to the total sum of squares. The
chi-square test is derived from lambda and tests for the significance of differences between group means.
§ Standardized canonical discriminant function coefficients are similar, but not identical, to regression coefficients.

variables which contribute most to differentiation in the discriminant function. Binary variables are widely used as independent variables in discriminant analysis and the results are robust, despite technically violating the multivariate normality assumption of the independent variables (Ashcroft, 1988).

In discriminant analysis the number of groups into which the cases must fall must be known in advance. In this study, a simple two-group model is developed with the cases being divided into "clear winners" and "partial winners" in terms of their GDP per capita and unemployment rates relative to adjacent EC NUTS2 regions (see Figure 1).

The results of a stepwise discriminant analysis utilizing the six independent variables discussed earlier

(*ECPOT, AGRIC, ISLAND, TOURISM, FINANCIAL* and *RESOUR*) are set out in Table 7. The model uses a standard stepwise selection algorithm (see Norusis, 1990). The independent variable *ECPOT* failed to meet the minimum stepwise model entry requirements (defined in terms of Wilks's lambda and the "F-to-enter" statistic) and was therefore excluded from the analysis. The five-variable model with the retained variables, *FINANCIAL, RESOUR, TOURISM, AGRIC* and *ISLAND* (in order of retention and hence importance), performs well in spite of the small number of observations (15) and hence few degrees of freedom.[1] The model accurately classifies 14 of the 15 states into "clear winner" and "partial winner" groups. Only Cyprus is misclassified by the model as a "partial win-

ner" when, in reality, it is a "clear winner." This mis-classification may reflect the build up of its financial services sector or greater-than-expected success in attracting tourism activity.

6. CONCLUSION

This paper has examined the economic perform-ance of Western European micro-states and auto-nomous regions of the European Union. Working within severe data constraints, it is argued that it is adjacent EU regions rather than the full set of EU regions or member states which are the appropriate benchmark for comparison. On average, the micro-states and autonomous regions are shown to perform better than adjacent EU regions in terms of GDP per capita and unemployment rates. These findings are contrary to the theoretical literature reviewed in sec-tion 2 which stresses the disadvantages faced by micro-states and identifies very few economic advan-tages. Many of the Western European micro-states and EU autonomous regions also suffer from the addi-tional disadvantage of being geographically isolated from the EU market. Further, some also suffer addi-tional costs associated with being island or land-locked economies.

Any examination of the reasons for the unexpectedly strong performance of the Western European micro-states and EU autonomous regions is hampered by the extremely limited nature of comparable statistics. Some of the likely explanations are also of an intangible nature and extremely difficult to quantify. This would include the special cohesion of many micro-states (and autonomous regions) together with their inherent flexibility, openness to change and international competition.

The paper examines the economic success of micro-states and autonomous regions through the analysis of differences in GDP per capita and rates of unemployment in the 15 economies. The most suc-cessful of the micro-states and autonomous regions are those with well-developed financial service sectors (the single most important variable), a valuable nat-ural resource base (endowment) or a strong tourism sector (in this order of importance) — or some com-bination of these three factors. Other variables per-form poorly; peripherality from the EU (*ECPOT*) and costs associated with island status (*ISLAND*) are prob-lems with which the micro-states and autonomous regions appear to cope well.

Data constraints preclude the analysis of a number of other possible explanations of the performance of micro-states and autonomous regions. The low recorded rates of unemployment may be partly explained by the exercise of autonomy to deny resi-dential permits for temporary labor. High unemploy-ment rates can be avoided during periods of slack labor demand by the rescinding of work permits. Neither has it been possible to test for the effect of the degree of urbanization on economic performance. Very few of the micro-states have experienced the inner-city problems and the loss of businesses and tax-payers seen in EU regions. The role of migrant remit-tances — important in economies such as the Azores, and the ability to develop successful high value-added "niche" manufacturing industries are also explana-tions worthy of further research. Such research, how-ever, would only be feasible on a case-study basis.

The main objective of this paper has been to under-take the preliminary analysis of a much neglected issue. Given the current state-of-knowledge of ex-planations of the success of the micro-states and EU autonomous regions, it is only possible to specify lim-ited policy implications. For the micro-states them-selves, the importance of a successful combination of financial services and tourism is self-evident. This may also be an appropriate model for those small economies deficient in financial services (e.g., Malta), tourism (e.g., Isle of Man) and where natural resources are in decline (e.g., Faroes). A crucial policy consid-eration, however, is the need for adaptability in these key sectors to the evolution of EU policy and the EU Single Market. The micro-states are aided in this by their flexibility and "the importance of being unim-portant." This allows them to avoid countervailing EU legislation, particularly in areas such as the regulation of "offshore" financial services.

Two sets of policy implications are apparent with respect to the EU and its member states. The first relates to the potential for non-EU member micro-states to attract business activity and jobs away from EU locations. Although the diversion of financial ser-vices and tourism may be significant at the local level, the very smallness of the micro-states is their salva-tion. The second concerns the potential lessons of the success of the micro-states and autonomous regions for peripheral EU regions. While some policies, such as residence permits, would clearly be unacceptable within the EU, others, however, such as the potential benefit of retaining a distinctive identity for tourism purposes and the role of a powerful and flexible local government (i.e. subsidiarity), are worthy candidates for further research.

NOTES

1. The choice of discriminant analysis (a classificatory technique) and binary explanatory variables is a reflection of the serious data limitations inherent in the analysis of sovereign micro-states. Few micro-states have fully fledged statistical services and each has its own distinctive method of collecting economic statistics. We have experimented with mixed continuous/binary specifications of the explanatory and dependent variables, and with regression analysis. Continuous data are only available for the two dependent variables (unemployment and GDP per capita), and for five explanatory variables (unemployment rates in adjacent EU regions, GDP per capita in adjacent EU regions, economic potential (*ECPOT*), share of agricultural employment (*AGRIC*) and *ISLAND* (measured as the distance in km from the main port on the island to the principal terminus port on the EU mainland). The variables *TOURISM, FINANCIAL* and *RESOUR* were retained in binary form. Despite a major effort, it proved impossible to obtain meaningful continuous measures for these latter three variables. Information on some aspects (e.g., numbers of visitors, overnight stays, tourist expenditures, numbers of financial institutions, fishing sector output, etc.) can be obtained for some of the micro-states and autonomous regions (and was used to construct the binary variables). Comparable continuous variables are, however, simply not possible. Candidates such as the share of tourism in exports and the share of tourism, financial services and resources in GDP are not available. The *ISLAND* measure is unsatisfactory but the best that can be obtained. Transport and freight costs data do not exist for the cross-section of micro-states. The results of our experiments with regression analysis (ordinary least squares OLS) are as follows:

(a) *Unemployment rates*

$UNEM_i = 3.35 + 0.71UNADJ_i + 0.00000015ECPOT -$
$\qquad (t = 0.22) \qquad (t = 1.52) \qquad (t = 0.40)$
$0.11AGRIC_i +0.000191ISLAND_i - 5.74TOURISM -$
$\qquad (t = 0.18) \qquad (t = 0.03) \qquad (t = 1.34)$

$9.79FINANCIAL - 7.83RESOUR$
$(t = 1.85) \qquad (t = 0.60)$
$R^2 = 0.70 \qquad DW = 1.61 \qquad n = 15$

where $UNEM_i$ is the employment rate (1989) of each micro-state or autonomous region i, $UNADJ_i$ is the 1989 unemployment rate in EU regions adjacent to micro-state/autonomous region i, and the other variables are as described in the text.

(b) *GDP per capita (ECU at PPS)*

$GDP_i = -0.26 + 3.76GDPADJ_i - 0.00098ECPOT_i -$
$\qquad (t = 1.55) \qquad (t = 1.98) \qquad (t = 1.37)$
$289.21AGRIC_i +3.371ISLAND_i - 241.02TOURISM +$
$\qquad (t = 0.97) \qquad (t = 0.74) \qquad (t = 0.08)$
$11859.60FINANCIAL - 26153.20RESOUR$
$(t = 2.26) \qquad (t = 1.42)$
$R^2 = 0.81 \qquad DW = 1.51 \qquad n = 15$

While the small number of observations and the poor quality of the continuous data used for the explanatory variables in the above equations must be kept in mind, the results generally bear out those of the more robust discriminant analysis in the text. *FINANCIAL* performs well and has the appropriate sign in both equations. *UNEMADJ* and *GDPADJ* also have the appropriate signs and are generally more significant than most of the other explanatory variables. *TOURISM* appears to have its greatest effect on unemployment rates. Its effects on GDP are negative (although the coefficient is insignificant). Similar comments apply to *RESOUR AGRIC* and *ISLAND* have coefficients with low levels of significance. Interestingly, a low *ECPOT* is associated with a high GDP per capita, reflecting once again the extraordinary success of the micro-states in overcoming the problems of their geographical isolation (where this is the case) from EU markets.

REFERENCES

Ahmad, J., "Strategic trade policy for small states," Paper presented to the Conference on Islands and Small States (Valletta, Malta: May 23–25, 1991).

Ashcroft, B., "External takeovers in Scottish manufacturing: The effect on local linkages and corporate functions," *Scottish Journal of Political Economy*, Vol. 25 (1988), pp. 129–48.

Benedict, B., "Introduction," in B. Benedict (Ed.), *Problems of Smaller Territories* (London: Athlone Press, 1967), pp. 1–10.

Commission of the European Communities, *The Regions in the 1990s: Fourth Periodic Report on the Social and Economic Situation and Development of the Regions of the Community* (Brussels-Luxembourg: EC Directorate-General for Regional Policy, 1991).

Commission of the European Communities, *The Contribution of Infrastructure to Regional Development: Final Report and Annex* (Luxembourg: EC, 1986).

Credit Andorra, *Andorra 1990* (Andorra la Vella: Credit Andorra, 1991).

Cyprus Planning Bureau, *Economic Outlook 1991* (Nicosia:

Central Planning Commission, Cyprus, 1992).

Cyprus Planning Bureau, *Economic and Social Indicators, 1991* (Nicosia: Central Planning Commission, Cyprus, October 1991).

Dommen, E. and P. Hein, *States, Micro-States and Islands* (London: Croom Helm, 1985).

Dommen, E., "Some distinguishing characteristics of island states," *World Development*, Vol. 8, No. 12 (1980), pp. 931–943.

Ernst & Young, *The Socio-Economic Consequences of Completing the Internal Market for the Island Regions of the European Community: Final Report and Case Studies*, Study for the Commission of the European Communities (Brussels: EC, 1989).

Eurostat, *Basic Statistics of the Community* (Luxembourg: Eurostat, 1991).

Eurostat, "Per capita GDP in the Community regions in 1989," *Rapid Reports: Regions No. 2* (Luxembourg: Eurostat, 1991).

Eurostat, *Basic Statistics of the Community* (Luxembourg: Eurostat, 1990).

Eurostat, "Unemployment rates in the Community regions in 1990," *Rapid Reports: Regions No. 3* (Luxembourg: Eurostat, 1990).

Furstentum von Liechtenstein, *Principality of Liechtenstein* (Vaduz: Presse und informationsamt der Furstlichen Regierung, 1991).

Glassner, M. and H. de Blij, *Systematic Political Geography* (London: John Wiley, 1989).

Government of Gibraltar, *Gibraltar 1990: Abstract of Statistics* (Gibraltar: Statistics Office, December 1991).

Hagstova Foroya (Statistical Bureau of the Farore Islands), *Statistical Bulletin: Selected Statistics of the Faroe Islands* (Torshavn: Hagstova Foroya, May 1992).

International Monetary Fund, *International Financial Statistics* (Washington, DC: IMF), various issues.

Isle of Man Government, *Isle of Man Census Report 1991, Volume 1* (Douglas: Economic Affairs Division, Isle of Man Treasury, October 1991).

Isle of Man Government, *Isle of Man National Income, 1989/90* (Douglas: Economic Affairs Division, Isle of Man Treasury, August 1991).

Jalan B., *Problems and Policies in Small Economies* (London: Croom Helm, 1982).

Keeble, D., J. Offord and S. Walker, *Peripheral Regions in a Community of Twelve Member States* (Luxembourg: EC Office of Official Publications, 1988).

Keeble, D., P. L. Owens and C. Thompson, "Regional accessibility and economic potential in the European Community," *Regional Studies*, Vol. 16, No. 6 (1982), pp. 419–431.

Khatkhate, D. R. and B. K. Short, "Monetary and central banking problems of mini-states," *World Development*, Vol. 8, No. 12 (1980), pp. 1017–1025.

Knox, A. D., "Some economic problems of small countries," B. Benedict (Ed.), *Problems of Smaller Territories* (London: Athlone Press, 1967), pp. 35–44.

Kuznets, S., "The economic growth of small nations," E. A. G. Robinson (Ed.), *The Economic Consequences of the Size of Nations* (London: Macmillan, 1960), pp. 14–32.

Malta, *Malta Information: Main Economic Indicators* (Valletta: Department of Information, 1990).

Marcy, G. "How far can foreign trade and customs agreements confer upon small nations the advantages of larger nations?," in E. A. G. Robinson (Ed.), *The Economic Consequences of the Size of Nations* (London: Macmillan, 1960), pp. 265–281.

Milner, C. and T. Westaway, "Country size and the medium-term growth process: some country size evidence," *World Development*, Vol. 21, No. 2 (1993), pp. 203–212.

Norusis, M. J., *SPSS/PC+ Advanced Statistics 4.0* (Illinois: SPSS Inc., 1990).

Organisation for Economic Co-operation & Development, *Main Economic Indicators* (Paris: OECD, 1992).

Organisation for Economic Co-operation & Development, *Economic Surveys: Iceland 1991/2* (Paris: OECD, 1992).

Robinson, E. A. G. (Ed.), *The Economic Consequences of the Size of Nations* (London: Macmillan, 1960).

Scitovsky, T., "International trade and economic integration as a means of overcoming the disadvantages of a small nation," in E. A. G. Robinson (Ed.), *The Economic Consequences of the Size of Nations* (London: Macmillan, 1960), pp. 282–290.

Selwyn, P., "Smallness and islandness," *World Development*, Vol. 8, No. 12 (1980), pp. 945–951.

Smith, B. J., "Some aspects of economic adjustment in small island economies," in F. Holmes (Ed.), *Economic Adjustment: Policies and Problems* (Washington, DC: IMF, 1987).

States of Guernsey, *Guernsey Statistics, 1992* (St Peter Port: Advisory & Finance Committee, July 1992).

States of Jersey, *Statistical Digest, Jersey 1991* (St Helier: Economic Adviser's Office, November 1991).

Streeten, P., "The special problems of small developing countries," *World Development*, Vol. 21, No. 2 (1993), pp. 197–202.

Summers, R. and A. Heston, "A new set of international comparisons of real product and price levels: estimates for 130 countries, 1950–85," *Review of Income and Wealth*, Vol. 34 (1988), pp. 1–25.

Svennilson, I., "The concept of the nation and its relevance to economic analysis," in E. A. G. Robinson (Ed.), *The Economic Consequences of the Size of Nations* (London: Macmillan, 1960), pp. 1–13.

Tarshis, L., "The size of the economy and its relation to stability and steady progress," in E. A. G. Robinson (Ed.), *The Economic Consequences of the Size of Nations* (London: Macmillan, 1960), pp. 190–199.

Treadgold, M. L., "Openness and the scope for macro-economic policy in micro-states," Paper present to the Conference on Islands and Small States (Valletta, Malta: May 23–25, 1991).

Triffin, R., "The size of the nation and its vulnerability to economic nationalism," in E. A. G. Robinson (Ed.), *The Economic Consequences of the Size of Nations* (London: Macmillan, 1960), pp. 247–264.

United Nations, *Yearbook of Labour Statistics, 1991* (New York: United Nations, 1992).

United Nations, *FAO Production Yearbook 1990* (Rome: FAO, 1991).

World Development, Islands and Small States: Issues and Policies, Special Issue, Vol. 21, No. 2 (1993).

World of Information, "Gibraltar," *World Economic and Business Review, 1991* (Oxford: Basil Blackwell), pp. 244–245.

APPENDIX A: CHARACTERISTICS OF MICRO-STATES AND AUTONOMOUS REGIONS

The micro-states and autonomous regions of Western Europe can be broadly classified into four main groups:

— sovereign states with significant economic autonomy from the EU;
— sovereign states with limited economic autonomy from the EU;
— EU areas with significant economic autonomy;
— EU areas with limited economic autonomy.

The key characteristics of the various micro-states and autonomous regions are set out in Table A1.

(a) Sovereign states with significant economic autonomy

(i) Cyprus

Cyprus has been independent since 1960 and has its own separate currency, the pound (lira). Attention in this paper is concentrated on the Republic of Cyprus (i.e. excluding the Turkish-controlled part of the island). It has had an Association Agreement with the EU since 1978 and its manufactured exports have tariff-free access to the EU market. In 1987, a two-stage 15-year program toward a full customs union with the EU was introduced, including a reduction in the barriers on imports of Cypriot agricultural products. The 1990 application for full EU membership is still being considered. The economy is primarily dependent upon tourism but there are important contributions from textiles, leather footwear, agriculture and financial services.

(ii) Iceland

Iceland has been independent from Denmark since 1944 and has its own currency, the krone. It has been a full member of EFTA since 1970 and has thus been a beneficiary of the 1973 EFTA-EC Free Trade Agreement. The economy is primarily dependent upon the fisheries sector, with important contributions from aluminum extraction and smelting together with tourism.

(iii) Malta

Malta has been independent since 1964 and has its own currency, the lira. The value of the lira, however, is pegged to a weighted basket of currencies comprising the dollar, sterling and the ECU. Malta has had an Association Agreement with the EU since 1976 and its manufactured exports have tariff-free access to EU markets. Relations between Malta and the EU are moving toward a full customs union. The economy is primarily dependent upon manufacturing (tex-

Table A1. *Western European micro-states and autonomous regions: sovereignty and economic autonomy characteristics, 1989**

	Sovereign state	Own currency	EU currency	EU member	EU derogations
Cyprus	1	1	0	0	CU+; M
Iceland	1	1	0	0	EEA
Malta	1	1	0	0	CU+; M
Liechtenstein	1	0	0	0	0
Andorra	1	0	1	0	0
San Marino	1	0	1	0	0
Canaries	0	0	1	0	CAP; CU+; F; T
Ceuta & Melilla	0	0	1	0	CU+; F; T
Isle of Man	0	1	1	P	CU–; K; L
Guernsey	0	1	1	P	CU–; K; L; T
Jersey	0	1	1	P	CU–; K; L; T
Gibraltar	0	1	1	1	CAP; CU–; T
Madeira	0	0	1	1	FTZ
Azores	0	0	1	1	F; T
Faroes	0	0	1	1	F

* A value of "1" implies that a micro-state or autonomous region has the particular characteristic, while "0" implies that it does not.
Key:

CAP	=	Derogations on some agricultural products.
CU–	=	Derogations from customs union with EU.
CU+	=	Customs union with the EU.
EEA	=	Member of the European Economic Area.
F	=	Derogation on fisheries.
FTZ	=	Derogation on free trade zone.
K	=	Derogation on EU capital and financial regulations.
L	=	Derogation to restrict labor mobility with EU.
M	=	Free access for manufactured goods to the EU.
P	=	Effectively in partnership membership with EU via relationship with UK.
T	=	Derogation on fiscal policy autonomy (incl. excise duties).

tiles and footwear) and tourism. Since 1988, Malta has promoted itself as an offshore financial center.

(b) Sovereign states with limited economic autonomy

(i) Liechtenstein

Liechtenstein has been an independent principality since 1719. Its original customs union with the Austro-Hungarian Empire collapsed in 1919. This was replaced in 1924 by a customs union with Switzerland and includes monetary union using the Swiss franc. Liechtenstein is a member of EFTA. Banking legislation is currently harmonized with Switzerland, although this is changing as Switzerland responds to EU and US concern over bank secrecy. The principal sectors of the economy are financial services and export-platform high-technology manufacturing.

(ii) Andorra

Andorra has been independent in various forms since the 13th century. It is a coprincipality of the Bishop of Urgell (Spain) and the Head of State of France. In a referendum in March 1993, however, Andorrans voted to adopt a modern constitution which increases local autonomy. The Head of Government of Andorra is determined by a democratically elected General Council. The Budget and income taxation are denominated in Spanish pesetas but the French franc also circulates freely. It has no separate currency of its own. In spite of its seeming subordinate position with respect to France and Spain, Andorra remained outside the EU until accepting customs union in 1991 for certain goods excluding agricultural products. The economy has been primarily dependent upon tourism and duty-free sales although the financial services and energy sectors are also important.

(iii) San Marino

San Marino is an independent republic in economic and monetary union with Italy, using the Italian lira as its currency. Although San Marino is inside the customs territory of the EU it is not, however, a member state. The principal sectors in the economy are tourism (including the sale of postage stamps) and agriculture.

(c) EU areas with significant economic autonomy

(i) The Canary Islands

The Canary Islands form an autonomous self-governing region of Spain which has special status under Protocol 2 of Spain's Accession Treaty. Although originally outside the customs territory of the EU, their gradual incorporation into the Community was agreed in July 1991. Exports to the EU, however, have been exempt from the CCT, with certain derogations, and, until the advent of the Single European Market, the Canaries could set tariffs on imports independently of continental Spain. The islands have also enjoyed special derogations from the Community on fisheries and the CAP,

especially for bananas and processed tobacco products such as cigars. At the end of their period of transition into the EU customs area, the common policies for fisheries and agriculture are to be applied on the same terms as those of Spain. The economy of the Canary Islands is dependent on tourism, with some manufacturing also existing.

(ii) Ceuta & Melilla

Ceuta & Melilla are self-governing metropolitan Spanish enclaves on the Moroccan coast which are not included in the customs territory of the EU. They have special status under Protocol 2 of Spain's Accession Treaty but to a lesser extent than that given to the Canary Islands. Both enclaves enjoy derogations from the EU common policies for agriculture and fisheries. Exports to the EU are exempt from the CCT with certain exceptions and, until the advent of the Single European Market, Ceuta & Melilla could set tariffs on imports independently of continental Spain. There is a limited amount of manufacturing in the two enclaves.

(iii) The Isle of Man

The Isle of Man is an autonomous self-governing part of the British Isles which is not a full member of the EU. It has its own currency, the pound, at par with sterling. Manx sovereignty is defined in Protocol 3 of the UK's Act of Accession and comprises a customs union with the EU for goods but preserves fiscal autonomy, restrictions on labor and capital movements (except in the case of the European Monetary Union coming into existence) and the service sector. The economy is increasingly dependent on the financial sector, with some tourism and manufacturing.

(iv) The Channel Islands (Jersey and Guernsey)

These are autonomous self-governing parts (each a distinct entity from the other) of the British Isles which are not full EU members. The currency, the pound, is at par with sterling. Sovereignty is protected under Protocol 3 of the UK's Act of Accession under similar terms to the Isle of Man. Both Jersey and Guernsey are primarily dependent upon the financial sector and tourism.

(d) EU areas with limited economic autonomy

(i) Gibraltar

Gibraltar is an autonomous self-governing UK territory with full EU membership. The Gibraltar pound is at par with sterling. There are derogations on customs duties, VAT and the CAP but financial services are subject to EU regulations. The principal sectors of the economy are tourism, shipping and financial services.

(ii) Madeira

Madeira has been a self-governing island region of Portugal since 1976 and has full EU membership. A special derogation (until end 2011) allows Madeira to make tax and

customs duty concessions in its Free Trade Zone. Its offshore banking sector is subject to EU regulations. The economy is dependent upon tourism, manufacturing and financial services.

(iii) *The Azores*

These islands form an autonomous self-governing region of Portugal (since 1976). The Azores have full EU membership. The islands have minor derogations on fisheries, agri-

culture and on excise duties. The economy is dependent on tourism and agriculture.

(iv) *The Faroe Islands*

The Faroe Islands form an autonomous self-governing region of Denmark (since 1947). They have full EU membership. There is a special derogation on fisheries, which is the mainstay of the economy.

APPENDIX B: THE DATA

The data set is in two parts. First, data have been collected for 165 EU NUTS2 regions. Second, data have been collected for 15 micro-states and autonomous regions (see Table 1 for a full list). No GDP data were available for Monaco or Vatican City. These two micro-states have therefore been excluded from the analysis.

(a) *EC NUTS2 regions*

GDP per capita figures are available for NUTS2 regions for 1989 as GDP at market prices per capita (Ecu) and GDP at market prices per capita at purchasing power parities (using the EC's Purchasing Power Standard method — PPS). Three are 170 NUTS2 regions (excluding Eastern Germany). Four of these NUTS2 regions are also members of the chosen set of micro-states and autonomous regions (Ceuta & Melilla, the Canary Islands, the Azores and Madeira). This leaves 166 EC NUTS1 regions for comparison purposes. The EC NUTS2 GDP per capita figures are calculated by regionalizing national GDP estimates. National GDP figures (Ecu and PPS) are collected on a harmonized basis using ESA rules. Member states also collect regional Gross Value Added (GVA — at factor cost) data. The regional structure of these GVA data is used to regionalize national GDP at market prices.

Unemployment rates for NUTS2 regions are expressed as the numbers unemployed (April) as a percentage of the working population (employed plus unemployed). National statistics for the numbers unemployed and workforces are obtained from updates of periodic EC labor force surveys (LFS). National figures for unemployment are regionalized using the regional structure of the numbers of persons registered as unemployed at employment offices in each member state region. There is some variation from member state to member state in the eligibility to register as an unemployed person at local employment offices and this affects the reliability of the data. Sources of data: Eurostat (1990, 1991).

(b) *Micro-states and autonomous regions*

The approach adopted in collecting data for the chosen set of micro-states and autonomous regions was to seek GDP and unemployment statistics as similar as possible to the EC NUTS2 figures. A variety of data sources were utilized. OECD and IMF publications were used as were the regular statistical publications of the micro-states and autonomous regions.

In a number of cases, data were collected directly from the governments of the micro-states and autonomous regions.

GDP per capita figures for the chosen micro-states and autonomous regions were converted into nominal Ecus and also into Ecus at purchasing power parity. The crossexchange rates between each domestic currency and the Ecu were calculated using average year exchange rates for 1989 (home/dollar and dollar/Ecu) published by the IMF (*International Financial Statistics*). GDP and GDP per capita data at PPS rates for states and regions within the Community are published by Eurostat (1991, 1991). In the case of micro-states outside the EU, a different procedure was adopted. The PPS exchange rates for member state currencies derived from Eurostat were also used to calculate GDP and GDP per capita (at PPS) values for those micro-states and autonomous regions using an EU currency or whose currency is at par with an EU currency (i.e. Andorra, Azores, Faroes, Gibraltar, Guernsey, Isle of Man, Jersey, Madeira and San Marino). GDP and GDP per capita at purchasing power parities (PPP) have been calculated for Iceland and Liechtenstein using the dollar PPP exchange rates, for Switzerland in the case of the latter (OECD, 1992). PPP rates for Cyprus and Malta have been updated for relative inflation from the dollar PPP exchange rates calculated by Summers and Heston (1988).

Wherever possible, GDP and GDP per capita figures were collected for 1989 and are expressed at current market prices rather than at factor cost. The exceptions are as follows:

— Guernsey — only GNP data available (adjusted to GDP using Jersey's ratio of GDP:GNP).
— Gibraltar, Isle of Man, Jersey and Guernsey — all GDP at factor cost (i.e. underestimating GDP at market prices).
— Liechtenstein — 1988 data only (an adjustment was made to give an estimated 1989 figure by assuming that the 1988 Liechtenstein:Switzerland GDP ratio is valid for 1989 and scaling the 1988 Liechtenstein figure accordingly).
— Madeira — latest GDP data are 1986 (adjusted to 1989 by assuming 1986 Madeira:Portugal GDP ratio is valid for 1989).
— San Marino — 1987 data only (an adjustment made to give an estimated 1989 figure by assuming that the 1987 San Marino:Italy GDP ratio is valid for 1989 and scaling the 1987 San Marino figure accordingly).

(c) *Sources of data*

Andorra: GDP, population and unemployment — Credit Andorra, *Andorra 1990.*

Azores: GDP — Presidencia do Governo, Regiao Autonoma dos Acores, unpublished data; population — Eurostat, *Basic Statistics of the Community, 1990*; unemployment — Eurostat (*1990*).

Canary Islands: GDP and population — Eurostat (*1991*); unemployment — Eurostat (*1990*).

Ceuta & Melilla: GDP and population — Eurostat (*1991*); unemployment — Eurostat (*1990*).

Cyprus: GDP — International Monetary Fund, *International Financial Statistics*; population — Cyprus Planning Bureau, Central Planning Commission, *Economic and Social Indicators*; unemployment — Central Planning Commission of Cyprus, Planning Bureau, *Economic Outlook, 1991.*

Faroe Islands: GDP — Hagstova Foroya (Statistical Bureau of the Faroe Islands) unpublished data; population and unemployment — Hagstova Foroya, *Statistical Bulletin: Selected Statistics of the Faroe Islands.*

Gibraltar: GDP and population — Government of Gibraltar, *Gibraltar 1990: Abstract of Statistics, 1990*; unemployment — *World Economic and Business Review*, 1991.

Guernsey: GDP, population (constant growth of population 1986–1991 assumed) and unemployment — Advisory and Finance Committee, States of Guernsey, *Guernsey Statistics, 1992.*

Iceland: GDP — International Monetary Fund, *International Financial Statistics*; population — OECD, *Economic Surveys: Iceland 1991/2*; unemployment — United Nations, *FAO Production Yearbook, 1990; Yearbook of Labour Statistics, 1991.*

Isle of Man: GDP — Economic Affairs Division, Isle of Man Treasury, *Isle of Man National Income, 1989/90*; population (constant growth assumed 1986–1991) and unemployment — Economic Affairs Division, Isle of Man Treasury, *Census Report 1991: Volume 1.*

Jersey: GDP, population (constant growth of population 1986–1991 assumed) and unemployment — Economic Advisers Office, States of Jersey, *Statistical Digest, Jersey 1991.*

Liechtenstein: GDP — Principality of Liechtenstein, unpublished data; population and unemployment — Press and Information Office of the Principality of Liechtenstein, *The Principality of Liechtenstein.*

Madeira: GDP — Direccao Regional Para os Assuntos das Communidades Europeias, Regiao Autonoma da Madeira, unpublished data; population — Eurostat, *Basic Statistics of the Community, 1990*; unemployment — Eurostat (*1990*).

Malta: GDP — International Monetary Fund, *International Financial Statistics*; population — Malta Department of Information, *Malta Information: Main Economic Indicators*; unemployment — United Nations,

San Marino: GDP, population and unemployment — San Marino Government Statistics Office, unpublished data.