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South East Study of Sub-Divisions

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SOUTH EAST

STUDY OF SUB-DIVISIONS

THE FINAL REPORT OF A RESEARCH PROJECT
CARRIED OUT AT THE UNIVERSITY OF READING

SOUTH EAST: STUDY OF SUB-DIVISIONS

NOTE

This Study has been published as a contribution to the understanding of the South East Region and to methods of regional analysis. However, it must be emphasised that none of the Government Departments supplying data for the Study is in any way committed to the findings or opinions expressed.

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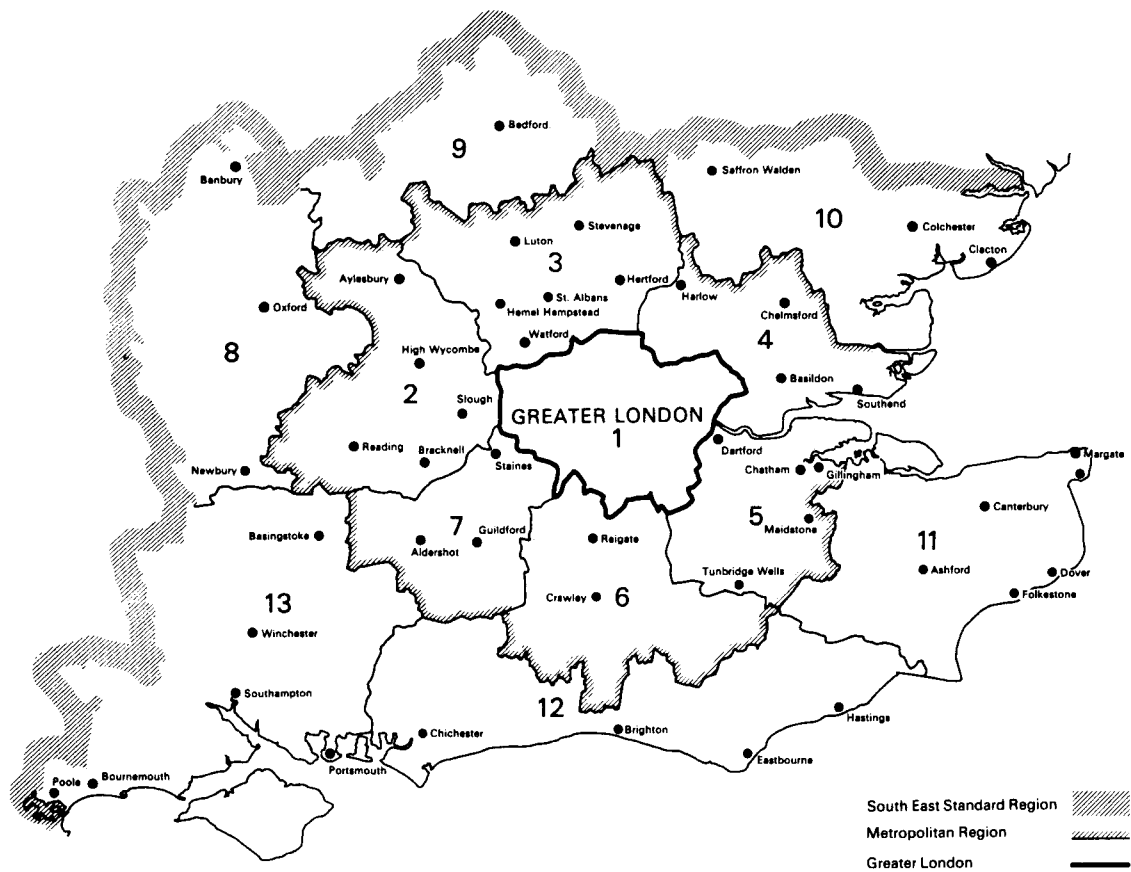Dartmouth Street
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Fig. 1. Sub-Divisions of the South East Region.

1 Greater London
2 OMA (West)
3 OMA (North)
4 OMA (East)
5 OMA (South East)
6 OMA (South)
7 OMA (South West)

8   OSE (Berks-Oxon)
9   OSE (Beds-Bucks)
10 OSE (Essex)
11 OSE (Kent)
12 OSE (Sussex Coast)
13 OSE (Solent)

SOUTH EAST: STUDY OF SUB-DIVISIONS

CONTENTS

SECTION A - SUMMARY OF FINDINGS

SECTION B - CHARACTERISTICS OF THE SUB-DIVISIONS

SECTION C - AN ANALYSIS OF STRUCTURE

TABLES

FIGURES

ACKNOWLEDGEMENTS

PREFACE

by the Chairman of the Research Group

1. In the very early stages of its work the South East Planning Council recognised that statistics on the Region as a whole would, on their own, be an inadequate basis for planning. The South East is by far the biggest Planning Region of England and Wales both in area (18 per cent of the total) and in population (35 per cent). Its forecast population growth represents nearly 30 per cent of the total projected growth of England and Wales up to 1981. Merely in order to obtain standards of comparison with smaller regions, some sub-division of this vast area and population would seem desirable.

2. But sub-division is needed too for the purpose of planning within the South East Region. As with the other regions, the work of the Planning Council is focusing increasingly on a group of interlinked questions: population growth and composition, labour supplies, industrial structure and industrial growth, resource allocation, and investment priorities in the public and private sectors. But in a Region as large as the South East, it appears certain that many of these exercises cannot usefully be done at an aggregative, Regional level. The reason is that the aggregate figures are likely to conceal differences, as between one part of the Region and another, that may be as large as the differences between the South East and any other region. Analysis or policies, which would be appropriate for one part of the Region, might be completely inapplicable to another part. And policies based merely on analysis of the regional aggregates might be equally inapplicable to each separate sub-division.

3. For this reason the Research Group decided in 1966, with the Council's agreement, that its first research priority should be an overall statistical study of sub-divisional differences within the South East Region. A two year contract was agreed in October 1966, between the Department of Economic Affairs and the University of Reading, by which Mr. Frank Stilwell of the Department of Economics in the University would work under the direction of Professor John H. Dunning (then Chairman of the Research Group). It was agreed that Mr. Stilwell's regular progress reports should be considered by the Group. This method has been followed, and it was found to be of great value. The Group owes an especial debt to the many officials from the different Government Departments principally involved, who attended the meetings of the Group so assiduously and gave freely of their technical expertise. The first results of the study, on population growth in the 13 sub-divisions, were incorporated in the 'Strategy for the South East' (HMSO 1967).

4. Thus the philosophy behind this work is that it is important and meaningful to study sub-divisional differences on roughly the scale of an average county or a little larger. Further, the concept of the document is that the first stage in the understanding of such differences is to obtain figures which indirectly measure regional output, mainly in the form of indices of prosperity, and to relate these to the more obvious differences in the use of factors of production in the different sub-divisions. Such an approach is far removed from the elaborate kind of development model which most students of regional problems would like to see developed. But in the present state of availability of information, it makes a useful start.

5. The central feature of the research is that it amalgamates, for the first time, a large body of published and unpublished, official (and semi-official) statistics relating to a single set of thirteen sub-divisions within the South East Planning Region. This work came up against serious technical difficulties. Though some sorts of data (for instance, population) are freely available for very small areas, some sorts of data (for instance, incomes) are only available for rather large, coarse areas. Since the presentation must be uniform if it were to be useful, this meant that the coarsest set of areas had to serve as the basis for all the data. Additionally, it was thought essential to preserve the conventional division, Greater London/Outer Metropolitan Area/Outer South East, which is now recognised, in many official publications; though it was felt that, in many respects the division between OMA and OSE is an artificial one, which may tend increasingly to break down. The result was a set of sub-divisions based essentially on entire administrative counties, with some division of the larger counties into OMA and OSE parts. It cannot be pretended that this is a theoretically wholly sound scheme of sub-divisions; such a scheme, which would minimise the differences within each sub-division and maximise the differences between the sub-divisions, must await better data, freely available on a fine area basis.

6.   The main conclusions of the research are summarised by Mr. Stilwell in the introduction to his report, (paragraphs 6-23). They fully confirm the supposition that very large differences do exist between one part of the region and another. Particularly notable are these findings:-

(1) Growth of population has been very uneven as between the different sub-divisions. Throughout the period 1951-1966 all the OMA sub-divisions grew at a faster rate than those in the OSE. However between 1961 and 1966 the overall differential in percentage terms was narrowing, but the absolute additions were still considerably larger in the OMA than in the OSE. Net migration has been the main cause of growth in both the OMA and OSE, but the OMA has had a faster rate of natural increase than the OSE. However, the current proposals in the Strategy and elsewhere, will greatly increase the migration element in growth in the OSE, in the period up to 1981. (Paragraphs 6-8).

(2) Growth of employment was greater in the OMA than in the OSE in the 1950s, but the differential seems to have disappeared since 1961. It is difficult to explain the differences in employment growth in terms of the composition of employment in each sub-division, but some sub-divisions are much more 'growth-based' than others. The OSE sub-divisions have poor proportions of 'growth industry' and their industries are also likely to be more liable to seasonal instability, though not to cyclical instability. There are major differences in the degree of specialisation between one area and another, particularly in the proportion of manufacturing to total employment (Paragraphs 9-11).
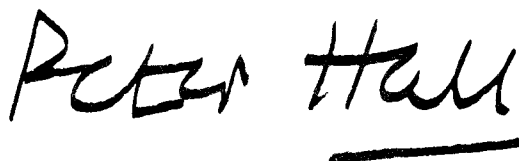
(3) Greater London has a much higher ratio of employment to population than any of the other areas; the age composition of the population, and activity rates, are particularly important reasons for this difference. Most important of all, of course, is the heavy inflow of commuters into the GLC area from outside. (Paragraphs 12-14).

(4) All sub-divisions except Greater London and OSE (Berks-Oxon) have net outflow of workers, but the magnitude varies greatly. Critical here is the dependence on Greater London, especially Central London. One in six of OMA residents in employment works in London, and this proportion rises to one in four in some sub-divisions. Retail shopping flows show a similar pattern, but the magnitudes are smaller. (Paragraphs 15-18).

(5) There are very significant differences in female activity rates, from 67 per cent in Greater London to 50 per cent in OSE (Essex). Some divisions, mainly in the OSE, have unemployment levels more than 50 per cent above regional average, though some of this represents 'unemployables'. The allocation of resources within the Region does not appear to have been satisfactory, given the high level of demand in the region as a whole. (Paragraphs 19-21).

(6) It is extremely difficult to arrive at a single satisfactory index of comparative prosperity, since indices of consumption are necessarily affected by many other factors than income. In income terms Greater London appears to be the most prosperous. Only one sub-division of the OMA falls below the regional average, while only one sub-division of the OSE rises above it. (Paragraphs 22-23).

7.   The Research Group believe that the results of this study fully justify the high priority given to it, and they support the case for more detailed work which would seek to explain the differences that emerge. Among the priorities mentioned by Mr. Stilwell (Paragraph 24) they would suggest: further examination of the pool of unemployment in different sub-divisions; an attempt to relate workplace movements with differences in prosperity; further research into the composition of employment; and research into migration movements, including examination of the motives. Though some of these further studies could be started on the basis of data currently available, many of them would need additional sub-divisional statistical information. Perhaps the most urgently needed, in the Research Group's view, is sub-divisional data on productivity in different industrial groups.

Peter Hall

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SOUTH EAST: STUDY OF SUB-DIVISIONS
SECTION A
SUMMARY OF FINDINGS

1.   The terms of reference of the study called for an analysis of population trends, employment and unemployment patterns, rateable values and retail trade in the sub-divisions of the South East Planning Region in the years since 1951. In addition to these general themes some work has also been carried out on workplace movements, income levels and comparative prosperity.

2.   The first problem was that of the delineation of the sub-divisions of the region. This is considered in detail in Chapter 1 of Section C, but for current purposes it may be suggested that the primary need is simply for a statistical breakdown of this highly complex region which will facilitate greater understanding of its development and which will serve as an initial spatial network for planning purposes. Thus, although the precise definition of the thirteen sub-divisions (shown in Figure 1) is not explicitly justified by reference to rigorous theoretical regionalisation criteria, it is appropriate in terms of the feasibility of obtaining statistical information and for general planning purposes, fitting neatly into the existing planning divisions. In fact the thirteen sub-divisions coincide exactly with those now accepted as the official planning sub-divisions of the region, except that the Outer Metropolitan Area (OMA) is split into six sub-divisions and Outer South East (Remainder) is divided into OSE (Berks-Oxon), and OSE (Beds-Bucks).

3.   The analysis of post war economic development in these thirteen sub-divisions has been based primarily on published social and economic statistics (especially the Censuses of Population of England and Wales for 1951, 1961 and 1966), and Government Departments have also been co-operative in the provision of unpublished data for local areas.

4.   Some attempt has also been made to draw all the threads together into an integrated study of the sub-divisional economies, involving analysis of the inter-relationships between these variables. In this way a more general picture is developed of comparative standards of resource utilisation, sub-divisional differences in the allocation of resources between alternative uses, and variations in rates of resource growth. (The theoretical inter-relationships between the utilisation, allocation and growth of resources in sub-divisional economies are further considered in Chapter 2 of Section C). The emphasis of this study is primarily on labour resources. This does mean that discussion of other factors relating, for example, to the availability of capital and the impact of industrial linkages and economies of scale on industrial development has been largely omitted. The paucity of appropriate statistics is the primary reason for this, but it may also be argued that since the excess demand for labour has been consistently higher in the South East than in any other region, its availability and distribution within the Region will have the greatest influence on the pattern of future economic development. The organisation of the Section C of this report demonstrates this primary concern with potential labour supplies, with chapters on population growth, employment structure, activity rates, unemployment and the demand for labour, workplace movements and so on.

5.   From this considerable volume of information and analysis a number of interesting conclusions emerge concerning the growth utilisation and allocation of resources in the thirteen sub-divisions. Some contrasts are apparent which would suggest differentials which the planning of future intra-regional resource distribution should seek to reduce. For example, there is more evidence of under utilisation of the potential labour supply in the OSE area than in the OMA, both in terms of above average unemployment and below average activity rates. It seems also that the OMA tends to specialise more in industries with a high growth potential, while the OSE area has an above average share of industries likely to suffer declines in employment at the national level. Also the OSE has a higher proportion of employment in industries liable to seasonal fluctuations in demand. Finally, it is demonstrated that average income levels and other indicators of material prosperity are rather lower in the OSE than in the OMA. Thus there would appear to be significant differences between the OMA and OSE in standards of resource utilisation and

favourability of resource allocation. Within the individual sub-divisions comprising these major areas the differences are even more marked.

6.   The principal findings are as follows:-

Population

Growth has certainly not been evenly spread between the sub-divisions. All areas except Greater London have had population increases since 1951 but the percentage growth up to 1966 has varied between 13 per cent in OSE (Kent) and over 50 per cent in OMA (North) and OMA (West). In general the OMA sub-divisions have had more rapid growth than those in OSE, but all OSE areas grew faster in the 1961-66 period than in the previous decade, so that the growth rate differential is narrowing. Nevertheless, in terms of absolute increases in numbers, the OMA sub-divisions have continued to grow more rapidly such that, whereas the OMA had almost entirely the same total population as the OSE in 1951 it was over 20 per cent larger by 1966. Every one of the OMA sub-divisions increased its share of the regional population outside Greater London while all the OSE sub-divisions had a decline in their share.

7.   The distribution of population growth between the constituent parts of the region can be initially analysed in terms of the differential effects of natural increase (excess of births over deaths) and of net migration. For the region as a whole, the proportion of total growth 1951-1966 due to the former variable is 65 per cent, net migration accounting for a further 33 per cent, the other 2 per cent being the effect of rundown of Armed Forces. However, these proportions have varied markedly between the major divisions, 70 per cent of growth in the OMA and 78 per cent of growth in the OSE being due to net migration. In general, the faster overall growth rate of the OMA sub-divisions has been due both to a faster rate of natural increase and to a greater gain from net migration. The volume of natural increase in the OMA was about three times that in the OSE and the volume of net migration twice as large. Also it is clear that the reduction in growth rates within the OMA sub-divisions in the sixties and the acceleration in growth rates in the OSE has been primarily the result of a change in the pattern of net migration. Rates of natural increase are relatively stable and depend largely upon sub-divisional differences in age composition. Hence it is fairly easy to identify the reasons underlying intra-regional variations here: in the extreme case, OSE (Sussex Coast) the age structure of the population is so biased towards old persons that the sub-division has experienced a consistent natural decrease in total population. On the other hand, the reasons underlying the pattern of net migration cannot be fully identified in the absence of more comprehensive information on the motives underlying such movements.

8.   However, it is clear that the current development proposals involve a further 'decentralisation' of the effects of net migration within the region. Thus the forecast gains from net migration up to the year 1981 are about three times larger in the OSE sub-divisions than within the OMA. The impact of this dramatic redistribution of population growth is further considered in Chapter 3 of Section C., and the effect on each of the individual sub-divisions is described in the second section of this report.

Employment and industry

9.   Employment growth over the period 1951-66 has generally been fastest in the OMA sub-divisions and slowest in Greater London, where it has fallen to negligible proportions. However, although the OMA grew considerably faster than the OSE in the decade after 1951, the average rate of growth in the 1961-66 period has been very similar. Every one of the six OSE sub-divisions has had a faster rate of growth in the 'sixties than in the 'fifties, while OMA (North) which grew extremely rapidly in the 'fifties, has since had a marked deceleration.

10.   Obviously one would expect the sub-divisional pattern of employment growth to be similar to that of population growth, but since, for various reasons explained in detail later, the ranking of the sub-divisions according to these two variables, is not identical, an independent explanation of each is attempted. However, explanation of the different rates of employment growth in the various sub-divisions in terms of differences in industrial composition appears rather unsatisfactory in that the extent of variation which can be explained in this way is much less than the effect of other ('unexplained') factors. Nevertheless such analysis does suggest significant differences between the sub-divisions in terms of the distribution of employment between industries generally declining in employment and those generally experiencing growth. The OSE sub-divisions come out relatively worst in this respect and the calculated index of growth potential is below three-quarters of the regional average in sub-division

OSE (Kent). The OSE sub-divisions also fare worst with respect to their specialisation in industries liable to seasonal instability (with the exception of OSE (Beds-Bucks)), although their industrial composition would not suggest any greater liability to unemployment of the cyclical-structural type. Greater London would appear to be better suited than most of the other sub-divisions to the avoidance of all these types of employment instability.

11. In terms of the extent (rather than the particular direction) of industrial specialisation, sub-division OSE (Berks-Oxon) would appear to be the least diversified, followed by sub-divisions OMA (North), OMA (South), OSE (Sussex Coast) and OSE (Beds-Bucks). However there is no evidence of this dependence on particular industries having caused underutilisation of resources. Clearly industrial diversification *per se* need not necessarily be a primary planning objective. However, it should be noted that the distribution of manufacturing industry between the sub-divisions is particularly uneven. The OSE sub-divisions in Kent and Sussex both have less than one quarter of their total employment in the manufacturing sector, compared with OMA (North) with a corresponding proportion in excess of one half.

Residential-employment balance

12. It has already been noted that the intra-regional patterns of employment and population growth have been similar but not identical. Such differences are indicative of trends in the general specialisation of individual sub-divisions either towards habintation or towards productive activities. Analysis of the general direction of specialisation in the sub-divisions in terms of the relative magnitude of population and employment reveals the outstanding production-orientation of Greater London. Other sub-divisions are more or less oriented towards specialisation in non-productive activities, the ratio of employment to population being only 85 per cent of the regional average in both the OMA and OSE, and below 80 per cent in five of the individual sub-divisions. Moreover this general sub-divisional specialisation has tended to increase since 1951, in that Greater London has become more production-oriented, while the majority of other sub-divisions have experienced a relatively faster rate of growth in population than in employment.

13. One can identify certain statistical variables associated with residential employment specialisation: the population age composition of each sub-division, activity rates, unemployment levels and net workplace movements from or into each sub-division. The first is of considerable importance in relation to the relative residential-employment balance of the South East sub-divisions because the age composition is the main influence on the extent to which the total population is potentially economically active. The proportion of persons of normal working age (males aged 15-64 and females aged 15-59) in 1966 varied between about 65 per cent in Greater London and below 55 per cent in OSE (Sussex Coast). Clearly, the major influence on these percentages is the number of old persons in each sub-division, although the GLC area does have a very low proportion of persons aged under 15 years. Moreover the greatest deterioration in the economic favourability of age composition has been in those sub-divisions which had the least favourable age distribution back in 1951. This tendency towards the spatial concentration of retired persons partly explains the trend towards generally increasing employment/population specialisation in the sub-divisions.

14. The second variable, economic activity rates, also shows significant intra-regional variations; the number of economically active persons as a percentage of numbers of persons of working age in 1966 varied between 82 and 73. The main cause of such variation lies in the extent of female participation and there would seem to be clear evidence of differential resource utilisation here, although this may well be a reflection of social rather than economic factors. Activity rates are clearly highest in Greater London and this of course tends to contribute to its production-orientation. The third variable, unemployment, is a less important aspect of the pattern of sub-divisional specialisation, although its importance as evidence of resuorce underutilisation means that it is crucial in another context (see Chapter 7 of Section C). Clearly the most important consequence of residential-employment balance is the pattern of net workplace movements. The GLC sub-division is outstanding as the major inflow area, and its percentage inflow is increasing while the percentage outflow of all other sub-divisions is higher than in 1951. Analysis of workplace movements constitutes the central theme of Chapter 6, which is summarised in the next section.

3

Economic inter-relationships

15.   The ratio of employment in each area to residents in employment is the best primary index of the extent to which each sub-division is a net inflow or outflow area in terms of workplace movements. Only Greater London and OSE (Berks-Oxon) feature net inflows, but the other sub-divisions vary widely in the relative magnitude of net outflows. From OSE (Solent) the net outflow is almost negligible, but at the other extreme OSE (South) has a net outflow of over 20 per cent of its economically active population. Sub-divisional variations in the ratio of employments to residents in employment are now considerably wider than in 1951.

16.   The dependence of each sub-division on Greater London is of prime importance here. One in six of the employed population of the OMA area work in the GLC sub-division, this proportion varying between nearly one in four in OMA (South) and OMA (East) and only one in ten in OMA (West). The pattern does not appear to have changed dramatically since 1961, but there do seem to have been some important changes in the share of the GLC workforce supplied by each of the sub-divisions. Movements to the Conurbation Centre seem to form about one half of these gross inflows to the GLC, but this proportion is much higher in the OSE sub-divisions and so the magnitude of these movements is of primary importance in the determination of net flows of economically active persons from these more distant areas.

17.   Tentative analysis of retail expenditure flows suggests a fairly similar pattern, although the proportion of funds leaving even the heaviest outflow sub-divisions is small relative to the proportion of persons involved in net workplace movements. Nevertheless sub-divisions OMA (South), OMA (East) and OSE (Beds-Bucks) may be generally regarded as less independent than the other subdivisions in the provision of both retail services and employment opportunities.

18.   Reduction in the extent of long-distance workplace movements is one possible planning objective, and underlies many public policies including the new town concept and also parts of the Strategy of the SE Economic Planning Council. The information on workplace movements presented in Chapter C6 of this report has immediately obvious implications for any policy based upon such objectives. However, it should be noted that such policy may be in conflict with that suggested by other planning objectives such as the maximisation of the size of the regional labour force.

Unemployment and the demand for labour

19.   Underutilisation of labour resources may reveal itself either in high levels of unemployment or in low activity rates. This study concentrates more on the former, principally for reasons of data availability but also because it is the more overt form of underutilisation. Activity rates are influenced by variables other than the demand for labour and, as such, evidence on different levels of economic participation has less direct policy implications than evidence on actual registered unemployment. Nevertheless, as already noted, preliminary investigations reveal that there are very significant differences in the level of female activity. For the region as a whole the female workforce amounts to some 60 per cent of all females of working age, but the range between sub-divisions is from 67 per cent in Greater London to only 50 per cent in OSE (Essex). Further analysis of the underlying causes, preferably at below the sub-division level is needed in order to identify whether the causes are economic, and hence amenable to policy towards the distribution of job opportunities.

20.   Analysis of registered unemployment also reveals significant variations between the sub-divisions, the average level over the period 1951-1966 being 50 per cent or more above the regional average in OMA (East), OSE (Kent), OSE (Sussex Coast) and OSE (Solent). In general this seems to reflect the uneven distribution of the aggregate demand for labour between the sub-divisions, although the bias towards demand for female employees in OSE (Sussex Coast) may also be a contributory factor to the level of male unemployment in that sub-division. However, unemployment has been lower than other regions and at least half of the spatial variation is due to the concentration in the coastal towns of unemployables (persons registered as unemployed but not forming a meaningful labour reserve). Removing estimates of the frictionally unemployed from data on registered unemployment further reduces the apparent labour reserve. It should be noted, however, that the incidence of seasonal unemployment is also greatest in the sub-divisions with the highest average mid-year unemployment levels. Thus, OSE (Kent) and OSE (Sussex Coast) are outstanding with regard to both their general level of resource underutilisation and seasonal fluctuations.

4

21. Certainly, the allocation of resources within the region has not been wholly satisfactory, given the very high pressure of demand in the region as a whole. Intra-regional variations in the level of excess demand have been significant and have shown little tendency to diminish over the post-war period. Labour resource utilisation could apparently be improved by measures to redistribute growth industries to sub-divisions (4), (11), (12) and (13), although it is not possible to specify the appropriate locations without further analysis at the intra-sub-divisional level. The balance between the demand and supply for labour in OSE (Berks-Oxon) may also require further consideration in the future: population growth is expected to be very rapid but the area contains no major employment-growth centres such as currently proposed for most of the other OSE sub-divisions.

Comparative prosperity

22. The economic viability of each sub-division may be measured in terms of various criteria related to welfare. Average income, for example, is an indication of how well the economic activities of the residents in any sub-division 'pay-off', taking into account both the prosperity of local industry and of industry in other areas with which the sub-division is functionally inter-related. Estimates of per capita incomes suggest the following conclusions:-

> (i) Greater London is outstanding as the area with the highest prosperity, incomes per person being over 20 per cent higher than some other sub-divisions of the South East.

> (ii) The OMA fares better than the OSE.

> (iii) Within the OMA the only sub-division with per capita incomes below the OSE average is OMA (South East), while within the OSE the only sub-division with incomes above the OMA average is OSE (Sussex Coast).

These observations are broadly supported by examination of statistics on consumption patterns and ownership of durable goods, although car ownership is very low in Greater London. Sub-divisional variations in housing values (as indicated by data on the rateable value of domestic property) also confirm this general picture. Thus, the multiplicity of social indicators considered in Chapter 8 of Section C do seem to provide some consensus, although each by itself may be of limited value as a measure of welfare. From the policy viewpoint, the important thing is that the general results confirm the generally lower standards of economic prosperity in sub-divisions further from London. Hence, the policy of encouraging the 'decentralisation' of development within the region would appear likely to reduce intra-regional differentials in prosperity. The development of counter-magnets at the periphery of the region (e.g. Southampton/Portsmouth, Ipswich and Milton Keynes) come in this category. As such the basic strategy for the region proposed by the South East Planning Council meets at least one possible objective of economically efficient planning.

23. These conclusions are very general and for a more detailed discussion of each point reference should be made to the relevant Chapter of Section C. In many cases the conclusions drawn are rather tentative because more detailed analysis is needed. In particular, the principal recommendations for future research are:-

> (i) Further investigation of the use of theoretical regionalisation criteria in the delineation of sub-divisions in South East England.

> (ii) More detailed analysis of standards of resource utilisation, involving further study of the extent to which the registered unemployed form a realistic labour reserve and further study of the causes for spatial variation in economic rates. In a region of general labour shortage maximisation of regional productivity rests in part upon the achievement of coherence between the spatial distribution of demand and supply of labour. Such analysis could usefully be combined with (i) in that the basic spatial framework might be defined specifically by reference to some concept of labour catchment areas.

> (iii) An attempt to integrate analysis of inter sub-divisional workplace movements with information on comparative prosperity in the sub-divisions. In this way it may be possible to derive information about social preference functions, particularly with regard to the disutility involved in making different types of journeys to work. Such knowledge is essential in the measurement of the effect on welfare of the trend towards the spatial separation of habitation and production.

> (iv) Further study of the changes in the industrial composition of employment in the sub-divisions. This could be usefully combined with analysis of intra-regional productivity differentials in an

5

attempt to identify the efficiency of resource allocation. In this way it may be possible to derive some indication of the effect on regional output of marginal changes in the distribution of resources within the region. However, such analysis requires considerably more information relating to intra-regional productivity differentials than is currently available.

(v) More research into the pattern of migration in the South East and, in particular, of the under-lying motives. The future distribution of population within the region and, to some extent, the very success of policy to influence that distribution, depends upon a greater understanding of such move-ments. This also requires more information than is currently available.

24.   Finally it is important to emphasise that this analysis of the development and structure of the sub-divisions of South East England generally treats each of the thirteen sub-divisions as single spatial units. There is very little study of intra-sub-divisional variations, and, to the extent to which each is really internally heterogeneous, this consitutes a limitation to this particular approach. For this reason sub-divisional analysis is best regarded as a first stage of spatial disaggregation: specific policy proposals require more detailed study. Thus, it may be possible to improve standards of resource utilisation in OSE (Kent) and OSE (Sussex Coast) but more detailed investigation is needed in order to identify the particular locations where the supply of labour exceeds demand. Similarly further analysis of workplace movements as suggested in (iii) above requires a more highly disaggregated framework of sub-divisions. The value of sub-divisional analysis thereby rests partly on its role in identifying particular areas requiring more detailed study.

SECTION B

CHARACTERISTICS OF THE SUB-DIVISIONS

25.   This part of the report provides a general description of the main characteristics of each of the thirteen sub-divisions. After a brief summary of the main physical features of each area (to be read in conjunction with Figure 1 and Appendix 1.A), emphasis is laid on outstanding economic characteristics, in terms of population growth and composition, employment growth and industrial structure, workplace movements and other influences on functional specialisation, utilisation of manpower resources, income levels and so on. The estimates of the future pattern of net migration in each sub-division are based on migration assumptions agreed between the General Register Office and other Government Departments.

SUB-DIVISION 1. GREATER LONDON COUNCIL AREA

26.   This area contains nearly half of the population of South East England and provides over half of the employment. It clearly dominates the region, both in terms of absolute numbers involved and also in terms of its economic inter-relationships with other areas (movement of goods, workplace and consumption movement, etc.). Hence, the economic development of this sub-division has had and will continue to have most important consequences for the other sub-divisions, particularly those in the Outer Metropolita Area. Studying the GLC area as a single spatial unit does not reveal anything about its important internal problems of resource allocation and utilisation, population distribution and housing, transportation and so on. However, it has already been suggested in Section A of this report that the major regional planning problems in terms of the accommodation of anticipated population growth have been pushed on to the other twelve sub-divisions. Greater London is the only one whose population is expected to decline. So, given the policy constraint of no further net expansion in the area, the planning problems are markedly different from those in the other sub-divisions. In a sense they still relate to dealing with pressures for expansion, and are the more complex because the policies with regard to redevelopment, industrial and office de-centralisation, transportation facilities, housing and population overspill are severely restrained by the framework of past developments.

27.   Certainly there are population growth pressures, the natural increase over the period 1951-1966 being of the order of 600 thousand persons. Thus, the decline in total population living in the area from 8.2 million in 1951 to 7.8 million in 1966 has involved a loss due to net migration of something in excess of one million persons. A static projection of the 1966 population would suggest a further natural increase of nearly 650,000 persons by 1981. Current expectations are that the loss as a result of net migration from Greater London will continue to more than offset this natural population increase. Taking account of the effect on emigration of the level of births and deaths, the overall population decrease anticipated in the fifteen years to 1981 is very similar to that which occurred in the fifteen years to 1966. Obviously, the realisation of such a decrease in the numbers within the area requires a very positive overspill policy, and one which is made all the more difficult by the secondary objective of guiding overspill to selected areas especially towards the periphery and outside the SE region.

28.   The level of employment within the GLC area, by contrast, has risen since 1951, although obviously much less than would have occurred in the absence of severe policy constraints on private development. The industrial structure of the GLC area is quite favourable in terms of national industrial growth trends, especially because of its specialisation in service trades. Insurance, Banking, and Finance and Transport and Communications are particularly well represented. However most industries have grown in employment more slowly than elsewhere. Excess demand for labour has been generally high and the diversified industrial composition coupled with the spatial proximity of employment opportunities has maintained overall labour reserves at consistently low levels over the post-war period. Activity rates have also been the highest in the region, because of the very high proportion of females who are in employment. Moreover work place inflows into the area have been increasing, particularly into the Conurbation Centre. About one fifth of the work force of Central London now lives outside the boundary of the GLC area.

29. However, the most recent trends suggest that employment growth has fallen to almost negligible proportions and that workplace inflows have accordingly ceased to increase so rapidly. Nevertheless this sub-division remains clearly the most outstanding for its very high level of production-orientation. In addition to net workplace inflows and unusually high activity rates, this is also the result of the age composition of the population. The proportion who are of normal working age is clearly the highest of any area in the South East. Although the proportion of old persons is rather above that in most of the OMA sub-divisions, the percentage of persons aged below 15 years is particularly low.

30. The very high proportion of economically active persons in the population (resulting from this favourable age structure and from the high level of activity rates) is one cause of the high level of personal prosperity in this sub-division. Evidence suggests that per capita incomes are some 16%.higher than the average level in the other sub-divisions. Moreover intra-regional price differentials do not appear to outweigh this income advantage in that ownership of durable goods (excluding cars) is very high. Values of domestic property are also the highest in the region, although household amenity standards are outstandingly low due to the above average proportions of multiple-tenancy dwellings. The high level of industrial activity forms the base of these high standards of personal prosperity (as well as contributing - via commuting - to raising levels of personal prosperity in the other sub-divisions). Such prosperity would seem to reflect, inter alia, the above average specialisation in industries with above average productivity and perhaps also the very constraints on the operation of market mechanisms in the growth of population, housing and employment.

SUB-DIVISION 2. OMA (WEST)

31. This area is the largest of the sub-divisions in the Outer Metropolitan Area. It comprises that part of the OMA to the West of the GLC area, falling mainly in the counties of Bucks and Berks but also including a small part of Oxfordshire. It is centred on the two main corridors from London to the West; Slough-Maidenhead-Reading, and Gerrards Cross-Beaconsfield-High Wycombe, the development along which forms quite a contrast to the intervening 'wedges'. In the north of the sub-division the Aylesbury area is more remote and self-contained and takes on a rather different physical character. The overall density of population is lower than average for the OMA.

32. Population growth since 1951 has averaged 2.4% p.a. This amounts to an increase of some 270,000 persons, almost exactly two-thirds of which was a result of net migration. The growth rate for the 15 years to 1981 is expected to be rather less than that in the preceding 15 years, involving a population increase of about 240,000 persons*. However, this anticipated reduction in the growth rate is much less dramatic than in most of the other OMA sub-divisions. Both the forecasted rate of natural increase and the effect of net migration are larger here than any of the other sub-divisions of the OMA. The important point is that this sub-division of the OMA is rather unusual in that its pressures of development are unlikely to be much reduced.

33. A further difference from the rest of the OMA lies in the above average production-orientation of this sub-division. Population age composition and activity rates are similar to the average, but net workplace outflows are comparatively small. The proportion of the occupied population working in Greater London is only 10%, which is the lowest of all the OMA sub-divisions. However, it now seems that the area is tending to supply an increasing share of commuters to the GLC area, so production-orientation is tending to fall towards the average level for the OMA.

34. Nevertheless employment growth has been continuing rapidly and the level of excess demand for labour in the period 1951-1966 was consistently very high. Manufacturing industries are generally well represented, particularly engineering and metal goods, food, drink and tobacco, timber,and furniture, and chemicals. This particular industrial specialisation would suggest an above average growth potential, such that demand for labour will continue to exceed its supply. The current level of revealed personal prosperity is about average for the OMA and may increase relatively as a result of the above average share of future development coupled with continuing increase of workplace movements into Greater London. However, the prospects for the sub-division depend partly upon the future of the area in the south of the sub-division (including Reading, Wokingham, and the London New Town of Bracknell) recommended by the report on 'A Strategy for the South East' for further study in conjunction with part of sub-division OMA (South West).

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* This may be a slight overstatement since it is based on the GRO projections which include Bletchley UD and Wing RD in this sub-division. See note to Table 3.6.

SUB-DIVISION 3. OMA (NORTH)

35.   This sub-division includes the whole of the county of Hertfordshire (except Bishops Stortford and Sawbridgeworth), plus part of Bedfordshire and a small area in Bucks. There is a greater concentration of transport corridors here than on any other sector, reflecting the links between London and the industrial North. Principal centres include the old established industrial towns of Luton, Watford and St. Albans but population is fairly widely spread and the area includes four of the eight London new towns: Hatfield, Hemel Hemstead, Stevenage and Welwyn Garden City. It is on sight smaller than OMA (West) and also provides quite marked contrasts, such as that between quasi-Greater London areas to the South and the rural areas in the East and especially on the North Eastern fringes. Overall the density of population is only just a little above average for the OMA.

36.   Population growth over the 15 years since 1951 has been very rapid indeed. The absolute increase of some 380,000 persons was the greatest of all the sub-divisions, although the average annual growth rate (2.8% p.a.) was rather slower than in OMA (East). This rapid growth was the result partly of a very high rate of natural increase, but two-thirds of the total population increase was the direct result of a heavy gain from net migration, much of which was associated with the New Town developments. However the rate of growth has slowed down since the 1950s, mainly because of the fall in the rate of in-migration, and is expected to fall even further. In the fifteen years to 1981 the forecast percentage change in population is only one-third of that in the fifteen years to 1966. Natural increase will continue to be fairly rapid because of the particularly young age composition of population (the percentage of persons above normal working age being lower in 1966 than in any other sub-division except OSE (Berks-Oxon)). The reduction in growth is therefore due to the anticipated effects of net migration, which is expected to add below 50,000 persons in the period 1966-1981*.

37.   In terms of employment growth there has also been a very marked slowing down since the 1950s. However dependence for employment on Greater London does not seem to have increased significantly. A wide range of industries is represented in this sub-division, particularly in manufacturing. Indeed the percentage of persons employed in manufacturing industry (53%) is clearly the highest of all the sub-divisions, and the corresponding percentage in services is the lowest. In particular the proportion of employment in distributive trades is particularly low which may explain the evidence on above average outflows of retail consumption funds from the area. Nearly all manufacturing industries have more than average representation for the region, but nearly 30% of the employment is in engineering and electrical goods, and vehicle manufacturing alone.

38.   This particular specialisation seems to have had favourable effects on the level of resource utilisation: unemployment has been negligible and excess demand consistently very high. Similarly, all the evidence on incomes, ownership patterns, housing values etc. suggests that the prosperity of the sub-division is about average for the OMA. Clearly the period to 1981 is an opportunity for the consolidation of the very rapid post-war growth and in particular for the development of further ancilliary service industries. The north western parts of the Region, particularly in the Luton-Dustable area (which was proposed as a 'study area' in the report on 'A Strategy for the South East', will presumably form a natural focus for such development, especially because of its natural linkages with the major expansion at Milton Keynes and Northampton.

SUB-DIVISION 4. OMA (EAST)

39.   This sub-division includes those parts of Essex falling within the OMA, plus a small part of Hertfordshire around Bishops Stortford. It is traversed by three major transportation corridors: Epping-Bishops Stortford, Brentwood-Chelmsford and from Greater London to Southend. The role of sub-divisional centres is adopted principally by Southend and Chelmsford and this sub-division also contains two of the largest London New Towns, Basildon and Harlow. The overall density of population is over 2.5 persons per acre, which is the highest level in all sub-divisions outside Greater London. However many predominantly rural areas remain, between the main corridors of development, especially in the Rural Districts of Epping and Ongar, Rochford, and Chelmsford.

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*   This may be a slight understatement because of small differences in the area of the sub-division described here and the one for which the GRO projections were made. See note to Table 3.6.

40.   The rate of growth in this sub-division has been faster than all other areas both during the 'fifties and 'sixties. Total population increased by 44% in the decade to 1961 and by a further 13% in the following five years, the overall increase amounting to 350,000 persons. Most of this has been due to heavy migration into the sub-division especially to the new towns of Harlow and Basildon. The rate of natural increase has been only about average for the OMA. Moreover, the falling off in immigration shows up clearly as the principal cause of the fall in the rate of population growth in the 'sixties and of the further forecast fall in the rate of population increase. In the period 1966-1981 it is currently anticipated that the gain from net migration will be only of the order of 66,000 persons. Taking natural increase into account this would suggest a probable overall growth of only 165,000 persons*, less than half of the overall growth in the fifteen years to 1966.

41.   The past record of employment growth is also outstanding, the average growth rate 1951-1966 being one of the fastest of all the sub-divisions. However the level of production-orientation remains very low, and the rate of employment within the sub-division to employed persons living within the sub-division is lower than in all other areas except OMA (South). Net workplace outflows are very heavy indeed and the number of residents working in Greater London is about one hundred thousands. This amounts to nearly one in four of the employed population in this sub-division and constitutes nearly one quarter of the total inflow to the GLC area from the SE sub-divisions. Dependence on the Greater London area for retail and other services also seems to be more than usually pronounced, service employment within the sub-division being generally less than average elsewhere in the OMA. Over 43% of local employment is in manufacturing which is greater than all other sub-divisions except OMA (North) and the engineering and electrical industry alone accounts for 19% of the total employment in the area.

42.   The excess demand for labour seems to have been rather below average and the level of registered unemployment rather high. Certainly there are concentrations of occupational pensioners, particularly in the Southend area, but even after allowing for unemployables and others frictionally unemployed there does seem to have been a small positive labour reserve over the period 1951-1966. Generally it would appear that the labour market has been less tight here than in other parts of the OMA, and general prosperity, in terms of average incomes, ownership standards, housing values and so on, would appear to be only about average for the OMA despite the high proportion of commuters living in this sub-division.

43.   Current proposals suggest that future development within the area be more narrowly contained than in the past, particularly in the growth sectors extending to Southend and along the A.12 routeway through Chelmsford. The corridor of development along the A.11 to Harlow and Bishops Stortford falls within a proposed Green Sector. The fulfilment of this policy would seem to require further industrial and service development in the more southern parts of the sub-division: otherwise economic dependence on Greater London will become even heavier than at present.

SUB-DIVISION 5. OMA (SOUTH-EAST)

44.   This area comprises that part of the OMA in the county of Kent and centres on the corridors following the A.2. out of the Medway Towns and the A.20 to Maidstone. To the South the sub-division is more consistently rural but there is a third important corridor here running from Sevenoaks to Tonbridge and Tunbridge Wells. Overall population density in this, the second smallest of the thirteen sub-divisions, is about 2.3 persons per acre which is rather above the OMA average.

45.   Population growth in the decade after 1951 was only some 74,000 persons, clearly the slowest rate of increase in the OMA. However, the growth rate increased markedly in the 'sixties and the average annual rate of 2.1% was about average for the OMA in the five years after 1961. This acceleration in growth was primarily due to increasingly rapid net migration, and this is particularly significant because this is the only one of the six OMA sub-divisions which experienced faster growth from net migration in the 'sixties than in the 'fifties. Current expectations are that the rate of growth will continue to be around the OMA average, such that over the period 1966-1981 there will be a further population increase of over 100,000 persons. This amounts to a percentage change of about 15%. The proposals of the report on 'A Strategy for the South East' would suggest that this growth be concentrated in the north-east of the sub-division along the Dartford-Medway Towns corridor, and around Maidstone. Elsewhere, particularly in the south of the sub-division little further expansion is envisaged.

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*   This may be a slight understatement because of small differences in the area of the sub-division described here and the one for which the GRO projections were made. See note to Table 3.6.

46. Employment growth in this sub-division has also been below average for the OMA, and as a result the production-orientation of the area has been decreasing further. In particular, although the net workplace outflows are only about average magnitude they are increasing with more than average rapidity. The proportion of economically active persons travelling to work within the Greater London area is rising rather more rapidly than in most other sub-divisions. However Maidstone, Chatham, Rochester and Royal Tunbridge Wells all feature significant workplace inflows and manufacturing industry is fairly well represented. The percentages of total employment in paper, printing and publishing, shipbuilding and bricks, pottery and glass are well above the regional average. Also it should be noted that the percentage of employment in extractive industries is the highest in the OMA, although still only 4% of the total.

47. The excess demand for labour in this sub-division has been generally rather below average. Moreover, although most of the persons registered as unemployed do not constitute a real labour reserve, there is also some evidence of rather low activity rates. Finally, and perhaps most outstandingly, the level of prosperity seems lower than in any of the other five sub-divisions of the OMA. Household amenity standards, housing values, and car ownership are all particularly low and per capita incomes and ownership of most consumer durables are clearly below average. Further increases in the numbers of persons commuting to London may tend to raise the average level of personal prosperity but, if equalisation of intra-regional income differentials is a specific planning objective, there would seem to be a case for the encouragement of rather more development in this particular sub-division.

SUB-DIVISION 6. OMA (SOUTH)

48. This sub-division is clearly focused on the main southerly corridor from London, running through Reigate-Redhill to Crawley and on to Brighton (which falls in OSE (Sussex Coast)). The northern part of the area also includes a fairly marked concentration of population around Epsom, Leatherhead and Dorking. In general there does not seem to be a major sub-divisional centre, since Reigate-Redhill does not really have the size or status, either for employment or service provision, of the major centres in the other OMA sectors. Horsham, East Grinstead and the New Town of Crawley adopt the role of local centres for the more southerly parts of the sub-division falling in Sussex, although the influence of Brighton is of considerable importance here.

49. Population growth was very rapid in the 'fifties; the annual growth rate averaging 2.5%. During the five years after 1961 expansion was much slower, and the growth of total population was the least rapid of all the OMA sub-divisions. Current development proposals would seem to suggest a continuation of this trend. Over the fifteen years to 1981 a growth of less than 40.000 persons is anticipated, compared with over 160 thousands in the previous fifteen years. Part of the reason for this slow rate of expansion lies in the age structure of the existing population. The proportion of persons above normal working age is the highest in the OMA. As a result of this bias in the age composition towards old persons, the excess of births over deaths has been, and is expected to be, comparatively small. Moreover, the anticipated effect of net migration is even smaller than the anticipated natural increase of the existing population. The expansion of Crawley New Town which accounted for much of the immigration in the 'fifties is nearing proposed capacity and no comparable developments are proposed for the period up to 1981. The report on 'A Strategy for the South East' does propose that the central A.23 corridor to the south of Redhill forms a sector for future growth but what this analysis would seem to suggest is that the resulting growth in population will be relatively minor. Thus, although this sub-division has the lowest overall density of population of all the OMA areas, the forecast growth of population is clearly the smallest of all sub-divisions outside Greater London, both in absolute and relative terms.

50. This current study also reveals clearly the 'extroverted' nature of this sub-division: it looks outward to other areas for the provision of employment opportunities and shopping facilities more than any of the other twelve sub-divisions. The proportion of employed persons working in Greater London is nearly 25%, which is higher than any other area, and there are also significant workplace movements into OSE (Sussex Coast). In general it is the least production-oriented of all the sub-divisions, in the sense that the ratio of employment to population is the lowest of all. This reflects the unusually low representation of manufacturing industry, the proportion of persons employed in manufacturing being the lowest in the OMA. Service employment is relatively well represented, and although this makes the industrial composition appear favourable in terms of employment stability and growth trends, it does mean that the area lacks basic industry. Thus, although the excess demand for labour has been consistently high and unemployment very low the future economic viability of this sub-division rests quite heavily on the prosperity of the other

11

sub-divisions with which it is functionally interrelated. This constitutes a case for further consideration of the possibilities of rather more expansion here, designed particularly to develop more fully one or more sub-divisional centres and diversify the industrial base of the sub-division. However in view of the chronic industrial labour shortages, especially in the Crawley area, any expansion of manufacturing capacity would need to be marked by an increase in the supply of appropriate labour.

51.   Finally, it should be noted, that despite the high proportion of persons commuting to London, the average level of personal incomes in this sub-division is below the OMA average. However, ownership of cars and other consumer durables, housing values and average household amenity standards, seem to be relatively high.

SUB-DIVISION 7. OMA (SOUTH-WEST)

52.   This area comprises the western half of Surrey plus a small part of north east Hampshire, focusing on the main corridors from Staines to Camberley (A.30) and from Esher to Guildford (A.3). It is the smallest in area of all the thirteen sub-divisions, but has considerable diversity, ranging from the fringe-Greater London areas of Staines, Weybridge and Esher,to rural areas such as those around Haslemere. Guildford would appear to form the natural centre, although its actual population is rather less than that in the Urban District of Woking. The overall population density of 2.3 persons per acre is rather above the average for the OMA.

53.   Population growth has continued fairly consistently in the post-war period, the annual growth rate averaging 2%. This means that over the fifteen years 1951-1966 the percentage increase in population was about 34% or about 190 thousand persons. About one third of this increase was due to natural increase and the rest was the result of net migration into the area. Like most of the other OMA sub-divisions, the projected growth rate is considerably slower. The combined effect of natural increase and net migration is thought likely to increase the population by only just over 100 thousand persons in the fifteen years to 1981. It is the anticipated reduction in the rate of gain from net migration to an average of only about one thousand persons a year which accounts for this slowing in what has otherwise been a consistently above average rate of growth. As a result, the anticipated overall growth rate is lower than all other sub-divisions except OMA (South), OSE (Sussex Coast) and, of course, Greater London.

54.   Production-orientation is rather below average in this sub-division, principally because of its heavy dependence for employment on Greater London. Workplace movements have increased rapidly since 1951 and now about 1 in 5 of the occupied population work within the GLC boundary. The other variables bearing on the general level of residential-employment balance, age structure and participation rates are about average for the OMA. What is interesting is the apparent reversal in the trend towards decreasing production-specialisation arising from the rapid increase in employment in the 'sixties. The annual rate of growth over the 1961-1966 period averaged 4%, which was one of the most rapid of all the sub-divisions. This compares with an average of about 1% in the 'fifties, which was well below the OMA average. The index of current employment growth potential is also above average so there is no reason to anticipate any general reduction in the very high level of excess demand for labour. Moreover, although there does seem to be an above average specialisation in industry liable to instabilty in employment, there is no evidence of employment instability in the post-war period. The pressure of demand has been consistently high.

55.   This industrial prosperity, coupled with the above average proportion of commuters living in this sub-division, also shows itself in terms of an above average level of revealed personal prosperity. Ownership of durable goods is generally high, and car ownership levels are particularly outstanding. Also housing values are above the OMA average, the proportion of properties with reateable values in excess of £200 being the highest of all the sub-divisions, including Greater London.

SUB-DIVISION 8. OSE (BERKS-OXON)

56.   This, the second largest of the thirteen sub-divisions, is basically a rural area with an outstanding concentration of population and industry at Oxford, and two less pronounced centres at Banbury in the north and Newbury in the south. The overall density of population is one of the lowest of all the sub-divisions, a very high proportion of persons living in Rural Districts. Nevertheless, the economy is rather less rural than most of the OSE sub-divisions in the sense that employment in agriculture is rather

below average, and employment in manufacturing a little above. Of particular importance is vehicle manufacturing which accounts for over 17% of the occupied population.

57.   Population growth over the period 1951-1966 has been the most rapid of all the OSE areas, although slower than all six sub-divisions of the OMA. This is primarily due to the very high rate of natural increase. The age composition of this sub-division is the most economically favourable of all the OSE areas, and the relative absence of old persons and the low average age has meant consistently large excesses of births over deaths. In the period up to 1981, the fast rate of natural increase is expected to continue: a static population projection suggests a percentage increase of nearly three times the regional average. In addition to growth arising from natural increase, net migration into the area has been increasing. This is actually the main reason for the rising rate of population growth since the 'fifties, and a further net gain of 74,000 is expected in the fifteen years to 1981. Taking account of both natural increase and net migration, a growth of almost exactly 200,000 persons can be anticipated in this period. This represents a percentage increase on 1966 of 45%, a growth rate second only to that expected in OMA (Beds-Bucks).

58.   The growth of employment has also been rapid and the area remains the most production-oriented of all the sub-divisions outside Greater London. There is even a small net inflow of workplace movements. However, the future prospects for growth of employment rest quite heavily on the particular industrial composition of the sub-division. It is the least diversified of all the sub-divisions with a particularly high proportion of employment in vehicle manufacturing. Metal manufacturing and textiles are also well represented, and a further 20% are employed in professional and scientific services. This particular direction of specialisation has caused very little fluctuation in unemployment in the past and excess demand for labour has been consistently high, although rather lower in the 'sixties than in the 'fifties. Average prosperity, in terms of incomes, ownership of cars and durable goods, amenity standards, etc. also remains about or a little above average for the OSE, although housing values are rather low.

59.   Further industrial development in the sub-division should ensure the continuation of economic prosperity, although it is important to emphasise that the maintenance of full employment may require conscious policy measures. The current forecasts of population growth imply a very rapid increase in the potential labour supply, but there are no specifically planned centres of industrial expansion as in most of the other OSE sub-divisions. (The Swindon development falls just outside the boundary of the SE region). It may therefore be necessary to adopt a rather liberal attitude to applications for idcs in order to ensure that the supply of labour does not outstrip demand.

SUB-DIVISION 9. OSE (BEDS-BUCKS)

60.   This is not a clearly defined sub-division, as it forms the southern half of the well-developed planning sub-division centred on Bletchley, Northampton and Bedford. Bletchley actually falls within the OMA and so is included in sub-division OMA (North), while Northampton lies outside the limit of the SE planning region. Bedford is clearly the major centre of this sub-division and is the only town with a population in excess of 15 thousand. Elsewhere the area is thinly populated and little urbanised and overall population density is the lowest of all thirteen sub-divisions at only 0.60 persons per acre.

61.   The rate of population growth since 1951 has been about average for the OSE, but in absolute terms the increase has been clearly the smallest of all the sub-divisions outside Greater London (only 39,000 persons). Migration into the area has been particularly low, amounting to only some 23,000 persons in fifteen years. However a dramatic reversal of this trend is anticipated, largely as the result of the development of the major growth point at Milton Keynes. Over the fifteen years to 1981 net migration into the area is expected to be well in excess of 100,000 persons. Taking account of natural increase and the further impact of this migration on natural increase, the overall growth currently forecasted is 168,000. This represents a 67% increase on the 1966 level, which is over four times as fast as in the fifteen years to 1966. Moreover it represents the highest growth rate of all thirteen sub-divisions (although not the largest increase in absolute terms).

62.   Growth of employment also seems to be increasing in that the rate of increase was significantly higher in the 'sixties than in the 'fifties. However, the industrial composition does not appear to be particularly favourable in terms of national growth trends, chiefly because of the relatively poor representation of service industries. Nevertheless, income-generating industries are in evidence and the

13

proportion of employment in manufacturing (43%) is clearly the highest of all the OSE sub-divisions. Engineering and electrical goods, bricks, pottery and glass and vehicle manufacture together make up 27% of total employment. This particular direction of specialisation seems to have had no adverse effects in terms of unemployment of labour: excess demand for labour has been consistently high, although rather lower in the 'sixties than in the 'fifties. However, the proportion of economically active persons working outside the sub-division is rather above average for the OSE and has increased significantly since 1951. Also, there is a fairly large outflow of consumption funds, suggesting that the area may be rather lacking in retail facilities.

63.   Further industrial development of the sub-division particularly the Milton Keynes expansion, should tend to make it more introspective in terms of both employment opportunities and consumption. Also the planned expansion may help to secure a higher level of prosperity. Ownership of consumer durables (excluding cars) per capita incomes and housing values and amenity standards are all currently much lower than elsewhere in the SE.

SUB-DIVISION 10. OSE (ESSEX)

64.   The parts of Essex falling in the OSE are thinly populated, especially in the western part of the sub-division which is very rural and poorly served with transport. The eastern half centres on the main A.12 corridor and in particular on the important sub-divisional centre of Colchester, which contains about one fifth of the total population. The coastal resort of Clacton and Witham, Braintree, Saffron Walden and Harwich constitute secondary centres. Overall population density is only 0.64 persons per acre, lower than all other sub-divisions except OSE (Beds-Bucks).

65.   Population growth has been generally slow, although very much faster in the 1961-1966 period than during the 'fifties. The overall growth in the fifteen years to 1966 was only of some 57,000 persons. Natural increase of population has been well below average, reflecting the bias towards older persons in the age distribution, and net migration accounted for about three quarters of overall growth. Although natural increase will continue to be slow, the volume of net migration to this sub-division is expected to increase considerably up to 1981. As a result the 1966 population is expected to increase by some 24% over this period (compared with 18% in the fifteen years to 1966). This increase in the rate of growth is primarily the result of proposed development on the A.12 corridor in conjunction with the continued expansion of Ipswich which lies just outside the regional boundary.

66.   The sub-division has become decreasingly production-oriented, reflecting the fact that growth of employment in the area relative to population expansion has been rather below the regional average. The age composition of the population is rather economically unfavourable, the percentage of persons of normal working age being below 60%. Of even greater effect is the pattern of workplace movements. Labour outflows have increased significantly since 1951, and one in twenty of the economically active population now work within the GLC area. The other determinants of the general direction of residential-employment balance, unemployment and activity rates indicate a rather higher level of resource under utilisation than in the region as a whole. Female activity rates certainly seem to be rather low. However, unemployment has been rather concentrated on the coast at Clacton, Frinton, Harwich, etc. and further analysis is needed to identify whether there is a real labour reserve here.

67.   Average incomes in this sub-division are particularly low and the evidence on ownership of durables and housing values and amenity standards would seem to confirm a generally below average level of prosperity. This may well be related to the particularly rural nature of the economy: the percentage of persons employed in agriculture, forestry and fishing is higher than in any other sub-division of the SE region. Further industrial development should serve to raise the general level of prosperity and also to make the sub-division more introspective in terms of workplace movements. This, of course, rests on the explicit assumption that the industrial growth of this Outer Essex sub-division benefits rather than suffers as a result of proximity to the growth point at Ipswich. Clearly, the linkages with the Ipswich expansion are of great importance. Development of the whole area as a city region would have considerable impact on the particular functional specialisation of this sub-division as well as on its rate of population and employment growth.

SUB-DIVISION 11. OSE (KENT)

68.　The Outer Kent sub-division is marked by a strongly peripheral concentration of population along the coast, in towns such as Hythe, Folkestone, Dover, Deal, Ramsgate and Margate. However, none of the coastal towns is, in itself, powerful enough to assume the status of a sub-divisional centre, and at the moment the nodal county town of Canterbury partly fills this role. The development at Ashford, in conjunction with the building of the Channel Tunnel could be expected to have an impact on this hierarchical structure, although the overall influence on the sub-divisional economy may be fairly small. A detailed study of the area has been produced by the Planning Council, so the description here is presented only in comparatively general terms.

69.　Overall population density is currently around the OSE average of 1.0 persons per acre, but has been increasing less slowly than all other sub-divisions in both the OMA and OSE sub-divisions. The average annual rate of population growth in the decade to 1961 was only 0.5%, but this increased to an average of 1.6% in the following five years, which was about the OSE average. Natural increase has been consistently very low, reflecting the high proportion of old persons in the population. It was an increase in the rate of gain from net migration which wholly accounted for the faster growth in the 'sixties: in fact the absolute magnitude of net inflow in the five years after 1961 was nearly *twice* that which occurred in the *ten* years before 1961. The rate of gain from net migration is not expected to increase very much more, involving an influx of over 160 thousands in the fifteen years to 1981. Taking into account the effect of this migration on natural increase the anticipated change in population 1966-1981 is some 32% (compared with only 14% 1951-1966). Of course, these expectations depend very largely upon the development of Ashford as proposed in the report on 'A Strategy for the South*East'. In the absence of such development, population growth may continue to be comparatively small.

70.　Employment growth was also very slow in the 'fifties and accelerated in the 'sixties to a rate comparable with the OSE average. Nevertheless the sub-division remains very poorly represented in manufacturing industries. Only 23.5% of the occupied population are employed in this way and the percentage of employment in most types of manufacturing industry is well below the regional average. By contrast, both service and extractive industries are relatively well represented. The proportion of employment in agriculture, forestry and fishing is second only to OSE (Essex) and a further 3% are employed in mining and quarrying.

71.　This comparative lack of industry reveals itself in a low level of production-orientation. The ratio of employment to population is less than 80% of the regional average, and has decreased significantly since 1951. One contributory factor is the economically unfavourable age composition of the population: only 57% are of normal working age. The proportion of persons above normal working age (21%) is second only to OSE (Sussex Coast), and has increased considerably since 1951. Net workplace outflows are also a little above the OSE average and dependence for employment on Greater London is significantly increasing, especially in the north of the sub-division. The final determinant of the general level of residential-employment balance is the usage of potential labour resources, and here there is certain evidence of under-utilisation. There is a consistent liability to seasonal unemployment and there also seems to be a tendency for unemployment to persist even in the summer months. Tentative investigations suggest that this constitutes at least in part, a real labour reserve. Certainly, the average level of excess demand for labour has been the lowest of all the sub-divisions, and the volume of unemployment has frequently been in excess of the number of unfilled vacancies.

72.　The general level of personal prosperity is below the regional average, and although incomes and general durables ownership standards are about the average of the OSE, housing values and, in particular, car ownership are well below. For the Ashford development and the less specific plans for expansion in the northern sector to increase the prosperity and general economic viability of this sub-division, strong emphasis must be put on the development of employment opportunities. That is to say, there must be explicit recognition of the difference between the balance of labour supply and demand in this sub-division and that in most other areas of SE England.

73.　Moreover, the existing industrial composition is not particularly favourable in terms of national trends, the calculated index of growth potential being the lowest of all thirteen sub-divisions.

SUB-DIVISION 12. OSE (SUSSEX COAST)

74.   A densely populated part of the fringes of the SE, this area is dominated by the line of seaside resorts and has an exceptionally homogeneous economic base and social structure. The major towns are, reading from west to east, Chichester, Bognor Regis, Littlehampton, Worthing, Brighton and Hove, Newhaven, Eastbourne, Bexhill, Hastings and Rye. Of these, Chichester, Worthing, Brighton, Eastbourne and Hastings appear to be outstanding both in terms of their population size and influence on surrounding areas. The overall population density of 1.4 persons per acre is higher than all other OSE sub-divisions except OSE (Solent). Moreover, this is the only sub-division of the OSE with an average density in excess of its adjoining OMA sub-division - OMA (South).

75.   The most striking feature of the population in this sub-division is the preponderance of old persons. Nearly 28% of the population in 1966 were above the normal working age, which is over 6% more than in any other sub-division of the SE. As a result, this sub-division has had a consistent excess of deaths over births which would have tended to cause a decrease in population of over 40,000 persons in the period 1951-1966 (or over 5% of the 1951 level). However, there has been a continued net migration into the area such that over the 1951-1966 period the total population actually grew by 124 thousands. This represents an overall growth rate of only just below average for the OSE. Much of this migration into the area is of the kind associated with retirement, and the proportion of old persons in the population has been rising more quickly than most other parts of the region. So the sub-division must expect a continuing natural decrease in population, and a static projection of the 1966 population suggests that this could amount to over 70,000 persons by 1981. However net migration into the area is expected to continue to be heavy, and the current GRO projections suggest that this will more than outweigh the natural decrease. Thus the 1981 population is expected to be nearly 80,000 larger than in 1966. Nevertheless, the overall forecasted growth rate is smaller than any other sub-division except OMA (South), the anticipated percentage increase in all other OSE sub-divisions being at least twice as large. This reflects the absence of any current proposals for the establishment of major growth points or sectors within the sub-division, although expansion around Hastings has been recommended for further consideration.

76.   Employment growth continues to be among the slowest in the region and the representation of manufacturing industry is the smallest of all the sub-divisions. Not one of the main manufacturing groupings has a higher proportion of total employment than in the region as a whole. Nearly two-thirds of the employment is in services, which is a level even in excess of that in Greater London. Distributive trades, professional and scientific services, and miscellaneous services (including catering and holiday trades) together provide 50% of total employment. Clearly, this bias in the employment structure leads to a restricted range of occupational opportunities. Moreover, although the specialisation in service trades would appear favourable in terms of national growth trends, it does mean that the economic viability of the region depends upon continuing inflows of funds associated with net migration for retirement and the holiday business. Nevertheless the current level of personal prosperity is very high. Average per capita incomes and housing values even compare favourably with Greater London, while ownership of durable goods is above average for the OSE.

77.   The level of production-orientation is just about the lowest of all the sub-divisions of the OSE, primarily because of the particular age structure of the population: below 55% are of normal working age. Moreover this particular direction of residential-employment balance is further increased by net workplace outflows, and the proportion of the occupied population working in Greater London remains the highest of all the OSE sub-divisions. Finally, there is evidence of resource under utilisation, registered unemployment being well above the regional average. Of course there are concentrations of 'occupational pensioners', but excess demand for labour has been generally rather low, and there is some evidence of a bias towards a demand for female employees which would suggest a consistent excess supply of male labour. In addition, there is a consistent liability to seasonal unemployment associated with the holiday trade.

78.   The future of this sub-division requires careful examination. Increasing numbers of retired persons pose problems in terms of general economic viability and there is also some doubt as to whether increasing specialisation in habitation for old persons and continuing attractiveness to holiday-makers are compatible.

SUB-DIVISION 13. OSE (SOLENT)

79.   This area comprises that part of the OSE in Hampshire, plus the Isle of Wight and the Dorset area of Poole MB. The outstanding concentration of population is in the Southampton-Portsmouth area and the sub-division will be dominated by the planned expansion of the area proposed in the South Hampshire Study. The other focus of population agglomeration is in the South West: Christchurch-Bournemouth-Poole, and further study of the growth potential of this area is also recommended in 'A Strategy for the South East'. Inland population densities are lower and only Winchester, Basingstoke and Andover stand out as important secondary centres. This is clearly the largest of all the sub-divisions and in many ways is rather too large to be regarded as a single spatial unit for the purposes of analysing economic character- istics. The character of the northern part of the area is quite different and population densities are quite low. Nevertheless, the average density in the whole sub-division remains the highest of all the OSE sub- divisions at 1.5 persons per acre.

80.   In absolute terms the growth of population since 1951 has been over 260,000 persons, which is clearly the largest increase of all the OSE sub-divisions. Of this some 111,000 occurred in the five years after 1961 and this was the largest increase of all sub-divisions in both the OMA and OSE in that period. However the average annual *rate* of growth 1951-1966 of 1.3% was below that of all the OMA sub- divisions, although second only to OSE (Berks-Oxon) within the OSE. Net migration and natural increase have accounted for growth approximately in the ratio of 1:1. Natural increase will continue to be above average for the OSE, and the effect of net migration 1966-1981 is expected to add something like a further 180,000 persons. Thus the anticipated growth in total population is something like 280,000. This is clearly the largest increase of all the sub-divisions, although slower than about five of the other sub- divisions in terms of the relative percentage change. It should, of course, be emphasised that this fore- cast depends heavily upon the achievement of the proposed rate of expansion in the Southampton- Portsmouth area.

81.   Employment growth has been continuing at a rate about average for the OSE, and as a result this sub-division has been maintaining its approximate balance between employment within the area and residents in employment. Net workplace outflows are relatively small. Nevertheless the sub-division does tend towards a below average level of production-orientation, and here the most important influence is the age composition of the population. This is not as economically unfavourable as those parts of the OSE in Kent and Sussex but the proportion of the total population of normal working age has now fallen below 60%. Utilisation of these potential labour resources also seems a little below average and although many of the registered unemployed do not constitute a real labour reserve, there is evidence of some shortage in the demand for labour. Certainly the volume of unemployment has been in excess of the number of un- filled vacancies for significant periods since 1951, and the mean level of excess demand has been well below the regional average. Moreover there is evidence of some liability to seasonal unemployment.

82.   In part this relative instability in the level of employment appears due to the particular industrial composition of the sub-division. Nevertheless there is considerable diversity of occupational opportu- nities, and the reliance on basic extractive industries (agriculture, forestry and fishing, mining and quarrying) is the lowest of all the OSE sub-divisions. The percentage of employment in manufacturing is about the regional average, but only shipbuilding and vehicle manufacturing have a particularly high representation, although chemicals (the Fawley Oil refinery and its associated complex) are of local importance. Service employment accounts for some 55% of the occupied population.

83.   As for the future direction of industrial expansion, the proposed development of a city region in the Southampton-Portsmouth area is of prime importance, and the formulation of more specific proposals is urgently required if this development is to proceed as rapidly as advocated in the report on 'A Strategy for the South East'.

17

SECTION C
AN ANALYSIS OF STRUCTURE
CHAPTER 1   DELINEATION OF SUB-DIVISIONS

84.   The definition of the regional sub-division is recognised as a crucial problem in an exercise of this kind. Any delineation must to a certain extent be arbitrary but as far as possible it should be:

    (a) appropriate for the purposes of the exercise in question,

    (b) practicable in terms of obtaining the necessary statistical data and

    (c) meaningful with respect to theoretical regionalisation criteria.

As regards the first criterion, what is appropriate is influenced by the particular characteristics of the region. Most obvious is the outstandingly nodal position of Greater London. Elsewhere, the region still has rural densities of population with relatively isolated towns, the intervening distances generally being greater towards the periphery of the region. These towns provide most of the jobs for the surrounding areas and most of the shopping facilities and other services. However, over the whole pattern of spatial inter-communications, the influence of London is of major importance. The commuting pattern, for example, can be considered as a set of radial movements, superimposed over a vast network of movements around more local centres. The relative importance of these commuting links, shopping and cultural inflows to the capital diminish generally with distances from London, such that towards the periphery spatial inter-communications are relatively minor.

85.   Given these general characteristics, the sub-divisional delineation proceeds by identifying the major centres of population and of employment and the main lines of communication. Towards the edges of the region, the towns being more self-contained, they form definite sub-divisional centres. Communications with other areas are of less importance, and the sub-divisions can be considered relatively intro-spective, the major towns being relatively central and the borders generally rural and only slowly developing. Closer to London, the emphasis must be more on spatial linkages. The towns tend to be arranged like beads on a string along the main radial corridors e.g. Slough-Maidenhead-Reading and Dartford-Gravesend-Rochester-Chatham. Between these corridors are more static, negative areas with rural densities of population, few jobs and poor access to transport, especially for commuting.

86.   These general characteristics suggest a scheme of sub-divisional delineation based upon proximity to London, direction of interconnection and location of sub-divisional centres. Schematically, this would seem to suggest sub-dividing the Region by a set of rings and radials, the rings reflecting declining inter-relationships with London and the radials being located with reference to the main lines of communication and the location of the sub-centres.

87.   It is at this point that it becomes necessary to consider the second criterion, practicality in terms of obtaining the necessary statistical data. The GLC and OMA boundaries are used as the rings, since these are now recognised planning units. Both are to a certain extent arbitrary, although the GLC boundary does follow a fairly clearly defined break between the built-up area and the Green Belt. The OMA was originally defined by reference to two criteria, the outer limit of significant commuting to London and the zone of rapid population growth around the Green Belt. The boundary is no longer very meaningful on either count, since population growth has moved out even further from London, and commuting centres are now well established on the Sussex, Outer Essex and North Kent coasts well over 45 miles from London. Nevertheless, it remains a crude approximation to the area which is characterised by corridors of development, as opposed to the remainder (or OSE) which features more obviously self-contained centres. Moreover, Government Departments are now familiar with the three-fold division of the Region and produce statistics on this uniform basis.

88. Within the OSE six sub-divisions are distinguished, three of which have very clear sub-divisional centres, OSE (Berks-Oxon) centred on Oxford, OSE (Beds-Bucks) centred on Bedford, and OSE (Essex) centred on Colchester. The other three sub-divisions have peripheral coastal concentrations of population, although in OSE (Kent) Canterbury does occupy a markedly nodal location. OSE (Sussex Coast) is dominated by the line of seaside resorts from Bognor to Hastings, and, finally, OSE (Solent) centres on the concentration of population in the Southampton-Portsmouth area, the future growth of which depends largely upon the implementation of the proposals in the 'South Hampshire Study'. These sub-divisions coincide with the areas now adopted by the Government for planning and some statistical purposes, except that OSE (Berks-Oxon) and OSE (Beds-Bucks) are lumped together to form the OSE (remainder). Separation is to be preferred in that two sub-divisional centres can clearly be identified in what would be an otherwise rather heterogeneous (and oddly-shaped) area.

89. No official sub-divisions of the OMA exist, but it is felt that this area is too large for the purpose of planning intra-regional resource allocation. Given that one of the main characteristics of places in the OMA is the impact on their development of proximity to London and the transportation links with London, the radials are located with reference to the major corridors of development. The sub-divisions are sited as follows:

(2) *OMA (West)* on two main corridors, Slough-Reading (GWR and M.4/A.4) and Beaconsfield-Wycombe (GWR and A.40),

(3) *OMA (North)* on a multiplicity of parallel transport routeways connecting London with the Midlands and North, most important of which are the LMR and A.41, LMR and M.1/A.6, and GNR and A.1,

(4) *OMA (East)* on three main corridors, Epping-Stortford (GER and A.11), Brentwood-Chelmsford (GER and A.12) and from Greater London out to Southend (Tilbury Line, A.13 and A.127),

(5) *OMA (South East)* on the major corridors out to the Medway towns (SR and A.2) and to Maidstone (SR and A.20), and a secondary corridor through Sevenoaks to Tunbridge Wells,

(6) *OMA (South)* centred on the Redhill-Crawley corridor (SR and A.23), and

(7) *OMA (South West)* on the Esher-Guildford (SR and A.3) and Staines-Camberley (SR branch and A.30) corridors.

90. Given these major corridors as the focal centres of the sub-divisions, the sub-divisional boundaries are located in the more static areas between the major routeways. It is necessary to adhere to the boundaries of Local Authority areas in order not to conflict with the regionalisation criterion concerning practicality of obtaining statistics. The full 13 sub-divisions are shown in Figure 1, and their definition in terms of Local Authority areas presented as an appendix to this chapter.

91. Although specific reference has not been made to the third criterion concerning theoretical regionalisation approaches, it is felt that the proposed delineation of the sub-divisions does not obviously violate any of the usual theoretical criteria. Boudeville* classifies regional types according to the concepts of homogeneity, polarisation or finality. Thus regions may be delineated with reference to:

(a) the spatial distribution of any specified variable or variables,

(b) the hierarchial interdependence between spatial units, or

(c) the areas under the jurisdiction of the bodies responsible for spatial planning.

92. It is suggested that the basic 'ring and radial' basis on which the thirteen sub-divisions have been delineated is generally consistent with the second of these types of regional classification (while recognising that no explicit measure of interdependence such as workplace movements actually forms the basis of the actual location of sub-divisional boundaries). Moreover, by adhering to Local Authority area boundaries and (where possible) County boundaries, the minimum violence is done to the third regionalisation criterion.

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* J. R. Boudeville - Problems of Regional Economic Planning, Edinburgh, 1966.

93.   However, it should be emphasised that the theory of economic regionalisation is still in the process of development and offers no certain method of procedure. The most advanced work comes from Poland (Cf. Dziewonski and A. Wrobel, 'Regional Structure and Economic Regions of Poland' in Geographia Polonica 1964), in which the following guidelines to regional delineation are suggested:

(1) The distribution of physical resources e.g. population, raw materials, capital equipment.

(2) Spatial economic differentiation e.g. distribution of industry, pattern of urbanisation, types of rural economy.

(3) Spatial interrelations e.g. movement of goods or people, influences of centres for services, education, etc.

94.   The main point of this work is that the appropriate spatial framework varies with the particular regionalisation criterion, but in so far as a unique set of sub-divisional boundaries is necessary for practical planning purposes, this approach does provide a fair catalogue of potentially relevant guidelines. These have been borne in mind as well as the special problems relating to the SE Region e.g. position of London and structure of communications, in delineating the sub-divisions. It is for these reasons that one can suggest that the final solution represents rather more than a simple statistical breakdown of the region: in so far as theoretical regionalisation criteria can be considered in formulating static sub-divisional boundaries, the proposed scheme of sub-divisional delineation is not obviously inconsistent with those theoretical criteria. The main problem would seem to be connected with size, but increasing the number of sub-divisions has its own cost in terms of feasibility of estimating the values of economic variables (population, incomes, etc.) from small samples, and, more generally, in terms of usefulness for the purposes of formulating broad regional development strategies. It is felt that the thirteen-fold deline-ation is a reasonable compromise.

APPENDIX 1A. DEFINITION OF SUB-DIVISIONS

Sub-divisions	*Local Authority areas*
1. Greater London	Greater London Council

2. OMA (West)	*Berks* (part):-
	Reading CB
	Maidenhead MB
	New Windsor MB
	Wokingham MB
	Bradfield RD
	Cookham RD
	Easthampstead RD
	Windsor RD
	Wokingham RD
	Oxon (part):-
	Henley-on-Thames MB
	Henley RD
	Bucks (part):-
	Aylesbury MB
	Beaconsfield UD
	Chesham UD
	Eton UD
	High Wycombe MB
	Marlow UD
	Slough MB
	Amersham RD
	Aylesbury RD
	Eton RD
	Wycombe RD

3. OMA (North)	All *Herts* areas except:
	Bishops Stortford UD
	Sawbridgeworth UD
	Beds (part):-
	Luton CB
	Dunstable MB
	Leighton-Linslade UD
	Luton RD
	Bucks (part):-
	Bletchley UD
	Wing RD

4. OMA (East)

Essex (part):-

Southend-on-Sea CB
Basildon UD
Benfleet UD
Brentwood UD
Canvey Island UD
Chelmsford MB
Chigwell UD
Epping UD
Harlow UD
Rayleigh UD
Thurrock UD
Waltham Holy Cross UD
Chelmsford RD
Epping & Ongar RD
Rochford RD

Herts (part):-

Bishops Stortford UD
Sawbridgeworth UD

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5. OMA (South East)

Kent (part):-

Chatham MB
Dartford MB
Gillingham MB
Gravesend MB
Maidstone MB
Northfleet UD
Rochester MB
Royal Tunbridge Wells MB
Sevenoaks UD
Southborough UD
Swanscombe UD
Tonbridge UD
Dartford RD
Maidstone RD
Malling RD
Sevenoaks RD
Strood RD
Tonbridge RD

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6. OMA (South)

Surrey (part):-

Banstead UD
Caterham & Warlingham UD
Dorking UD
Epsom & Ewell MB
Leatherhead UD
Reigate MB
Dorking & Horley RD
Godstone RD

Sussex (part):-

Burgess Hill UD
Cuckfield UD
East Grinstead UD
Cuckfield RD
Uckfield RD
Crawley UD
Horsham UD
Horsham RD

7. OMA (South West)	*Surrey* (part):-
	Chertsey UD
	Egham UD
	Esher UD
	Farnham UD
	Frimley & Camberley UD
	Godalming MB
	Guildford MB
	Haslemere UD
	Staines UD
	Sunbury-on-Thames UD
	Walton & Weybridge UD
	Woking UD
	Bagshot RD
	Guildford RD
	Hambledon RD
	Hants (part):-
	Aldershot MB
	Farnborough UD
	Fleet UD
	Hartley Wintney RD

8. OSE (Berks-Oxon)	All *Oxon* areas except:-
	Henley-on-Thames MB
	Henley RD
	Berks (part):-
	Abingdon MB
	Newbury MB
	Wallingford MB
	Wantage UD
	Abingdon RD
	Faringdon RD
	Hungerford RD
	Newbury RD
	Wallingford RD
	Wantage RD

9. OSE (Beds-Bucks)	*Beds* (part):-
	Ampthill UD
	Bedford MB
	Biggleswade UD
	Kempston UD
	Sandy UD
	Ampthill RD
	Bedford RD
	Biggleswade RD
	Bucks (part):-
	Buckingham MB
	Newport Pagnell UD
	Wolverton UD
	Buckingham RD
	Newport Pagnell RD
	Winslow RD

10. OSE (Essex)

Essex (part):-

Braintree & Bocking UD
Brightlingsea UD
Burnham on Crouch UD
Clacton UD
Colchester MB
Frinton & Walton UD
Halstead UD
Harwich MB
Maldon MB
Saffron Walden MB
West Mersea UD
Witham UD
Wivenhoe UD
Braintree RD
Dunmow RD
Halstead RD
Lexden & Winstree RD
Malden RD
Saffron Walden RD
Tendring RD

11. OSE (Kent)

Kent (part):-

Canterbury CB
Ashford UD
Broadstairs & St. Peter's UD
Deal UD
Dover MB
Faversham MB
Folkestone MB
Herne Bay UD
Hythe MB
Lydd MB
Margate MB
New Romney MB
Queenborough-in-Sheppey MB
Ramsgate MB
Sandwich MB
Sittingbourne & Milton UD
Tenterden MB
Whitstable UD
Bridge-Blean RD
Cranbrook RD
Dover RD
East Ashford RD
Eastry RD
Elham RD
Hollingbourne RD
Romney Marsh RD
Swale RD
Tenterden RD
West Ashford RD

12. OSE (Sussex Coast)	*Sussex* (part):-
	Brighton CB
	Eastbourne CB
	Hastings CB
	Bexhill MB
	Hove MB
	Lewes MB
	Newhaven UD
	Portslade-by-Sea UD
	Rye MB
	Seaford UD
	Battle RD
	Chailey RD
	Hailsham RD
	Arundel MB
	Bognor Regis UD
	Chichester MB
	Littlehampton UD
	Shoreham-by-Sea UD
	Southwick UD
	Worthing MB
	Chanctonbury RD
	Chichester RD
	Midhurst RD
	Petworth RD
	Worthing RD

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13. OSE (Solent)	All *Hants* areas except:-
	Aldershot MB
	Farnborough UD
	Fleet UD
	Hartley Wintney RD
	All *Isle of Wight* areas
	Dorset (part):-
	Poole MB

Note: For the purposes of analysing DEP data on employment, unemployment and unfilled vacancies, the sub-divisions have been defined in terms of roughly equivalent DEP Employment Exchange areas.

CHAPTER 2 PRELIMINARY THEORETICAL CONSIDERATIONS

95.   The objective of this study is to compare and contrast the sub-divisions in terms of their relative economic viability, with particular reference to patterns of labour resource utilisation, allocation and growth. Conceptually the distinctions between resource utilisation, allocation and growth are quite clear in the closed economy. Consider Diagram 2.1. Here, for simplicity, we assume only two industrial sectors, say manufacturing and services. If the total manpower supply (OA) is employed in the former the economy is represented by the point A. Of course OA = OB, and B indicates an economy whose labour force is employed wholly in services. Some intermediate position is probable such as Z. The study of *allocation* of resources can thus be considered as the process of determining the exact specialisation of the economy: A, B, Z, or whatever.

96.   Of course, there is no guarantee that full employment will prevail, in which case the economy will be schematically represented by a point such as U, within the employment possibility curve. At such a point the total volume of unemployment is CD. Research into resource *utilisation* thereby involves the measurement of the relative magnitudes of CD/OA in different economies. Finally *resource growth* is represented by outward shifting of the total employment possibility line from AB to EF. Now this growth may have effects on resource utilisation and allocation. If it is not accompanied by growth in the demand for labour, the proportion of persons unemployed will rise from CD/OA to CG/OE. Also, if the additional labour supply is absorbed wholly in manufacturing industry (e.g. a shift from point Z to W) the resource allocation ratio will change (from ZA/ZB to WE/WF).

Diagram 2.1

Employment in manufacturing
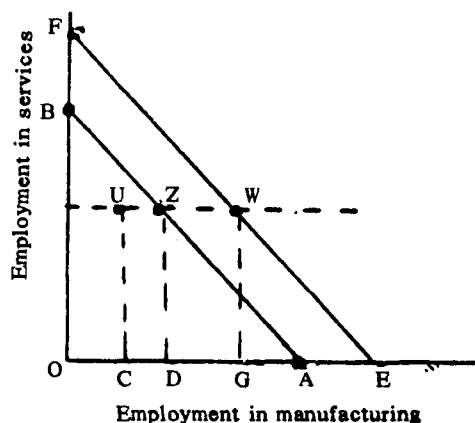
97.   Although this distinction between utilisation, allocation and growth is relatively clear for the closed economy, it is much more complicated for an economy open to interregional trade and workplace movements. In particular, inequality between the demand and supply of resources does not necessarily lead to unemployment of resources. Consider the simple case shown in Diagram 2.2 where total labour supply in the region is OA (= OB). Actual employment in the Region could be at a point represented by R, the net workplace movements into the Region being represented by the line NR. Or actual employment could be at S without there being unemployment, if the net workplace movements from the Region amounted to NS.

98.   Also, we should note that in an open regional economy the allocation of resources between industries is not determined by the consumption requirements of its residents, as is the case in the closed economy. The open economy can specialise industrially and engage in interregional trade.

Diagram 2.2

Employment in manufacturing
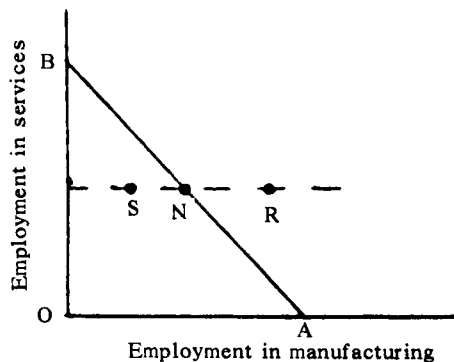
99.   Thus, in Diagram 2.3, where the line HH represents one of a set of indifference curves of the residents of the Region, the allocation of resources between alternative uses need not be that which results in the employment of OK in manufacturing and OL in services. This, of course, would be the optimum allocation of resources in the closed economy, but the open regional economy might produce OM manufactures and OP services and trade interregionally.

Diagram 2.3

Employment in manufacturing
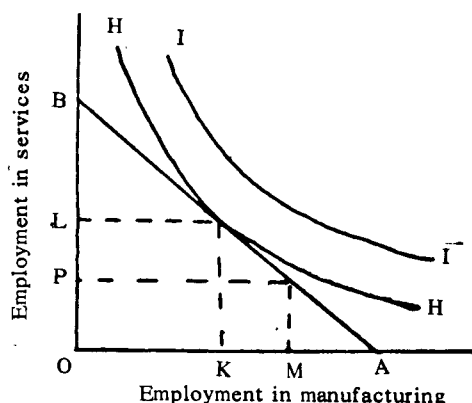
If the surplus of manufactured goods represented by KM can be exchanged for more services than could have been locally produced, the residents of the region can attain a higher level of consumption (say at some point on II) than if interregional exchange could not occur. This is, of course, a well known theorem of international and interregional trade, but it does serve to demonstrate the importance of studying interrelationships between spatial units rather than studying each in isolation. The point to be emphasised is simply that the importance of economic interrelationships increases with the level of spatial disaggregation.

100.   Given then, the importance of sub-divisional interdependence to the pattern of resource allocation, utilisation and growth, we proceed in the following chapters of this report in a topic-by-topic organisation starting with population and employment. The general idea is not to study each area in isolation in terms of, say, population growth, but to examine how the growth of the whole region has been allocated between sub-divisions. As far as possible we attempt further to explain such patterns and identify possible causes for one sub-division attracting growth at the expense of another. The importance of sub-divisional interdependence is demonstrated even more clearly in discussing population/employment interrelationships and inter sub-divisional workplace movements.

101.   In general, discussion of normative aspects of intra-regional planning is avoided: the choice between objectives is essentially a value judgment and one in which economic statistics in themselves can be of little assistance. The role of the statistical information is rather to indicate the policy appropriate to the achievement of particular objectives. We may take the following as some *possible* objectives of planning:

(1) minimisation of resource underutilisation

(2) minimisation of commuting

(3) increased equality of average incomes between the sub-divisions

(4) encouraging greater equality between the sub-divisions in terms of overall population density

(5) maximisation of resource use efficiency (i.e. securing that intra-regional distribution of resources which is conducive to maximum growth of regional productivity).

This last objective is clearly the most extreme economic objective and hence, one might argue, the one most likely to conflict with social objectives. Because of lack of data on productivity, we do not investigate the planning implications of such an objective. However, the implications of the others are revealed and it will be seen that they are frequently in conflict with each other. Hence the need for some relative weighting of objectives. This report is primarily concerned with description and analysis; and a normative assessment of the various objectives is required if it is to be of direct value in the formulation or modification of intra-regional planning strategies.

CHAPTER 3 POPULATION

POPULATION TRENDS 1951-1966

102. Detailed information on the volume and rates of population growth in the period 1951-66 is shown in Table 3.1. The most striking features are:

(1) The absolute magnitude of population growth in the region; about 1.13 millions between 1951 and 1961 (averaging 0.7% per annum) and 0.66 millions between 1961 and 1966 (averaging almost 0.8% per annum). This represents about one half of the total growth of England and Wales in the former period and more than one-third in the latter period. Thus the South East Region's share of the national population rose from 34.7% in 1951 to 35.4% in 1966.

(2) The different experience of growth of the three major areas. Over the whole period population fell in Greater London, but rose in both the OMA and OSE. However, the rate of growth has been considerably faster in the OMA, especially in the 1951-1961 period. The result is that whereas the OMA had almost exactly the same population as the OSE in 1951, it was over 20% larger by 1966.

(3) The average annual growth rate was slightly faster in the 'sixties than in the 'fifties. This was primarily due to rising expansion rates in the OSE: every one of the six OSE sub-divisions experienced faster growth than in the previous decade, and in three cases the absolute increase in population 1961-66 was actually larger than in the previous *ten* years. This acceleration of growth in the OSE was somewhat offset by an increase in the rate of population decline in Greater London and also by some slowing down of growth in the OMA. Expansion slowed down significantly in the OMA (North), (East) and (South). Growth was still generally faster in the OMA than in the OSE, but the differential between these major areas in growth rates was considerably less than in the period 1951-1961.

(4) Taking the period as a whole the ordering of the thirteen sub-divisions according to percentage increase in total population is as follows:

	Sub-division	
4.	OMA (East)	(Over 60%)
3.	OMA (North)	(Over 50%)
2.	OMA (West)	(Over 40%)
6.	OMA (South)	(Over 30%)
7.	OMA (SW)	(Over 30%)
5.	OMA (SE)	(Over 20%)
8.	OSE (Berks-Oxon)	(Over 20%)
13.	OSE (Solent)	(Over 20%)
10.	OSE (Essex)	(Over 10%)
9.	OSE (Beds-Bucks)	(Over 10%)
12.	OSE (Sussex Coast)	(Over 10%)
11.	OSE (Kent)	(Over 10%)
1.	GLC	(Decrease)

(This information is presented diagramatically in Figure 3.1). Thus the rate of growth was markedly different in the individual sub-divisions, being over four times as rapid in OMA (East) as in OSE (Kent).

103. Clearly, it is most important to attempt some explanation of these differences. The obvious first step here is to differentiate between natural increase (the excess of births over deaths) and other causes of population (principally net migration). Estimates of the relative effects of these components of change over the whole period 1951-1966 and the two-sub-periods 1951-1961 and 1961-1966 are shown in Table 3.2 (a), (b) and (c). Also presented are details on the changes in the Armed Forces stationed in the area and the resulting gain to the civilian population. However the impact of this last factor on the overall pattern of population change is very small in comparison with the effects of natural increase and net migration. We deal first of all with natural increase of the population.

104. The percentage change in the population of each sub-division 1951-1966 resulting from natural increase is as follows:

Sub-division		
3.	OMA (North)	16.9
4.	OMA (East)	14.7
8.	OSE (Berks-Oxon)	14.5
2.	OMA (West)	14.4
7.	OMA (SW)	12.1
5.	OMA (SE)	10.3
9.	OSE (Beds-Bucks)	10.3
6.	OMA (South)	7.8
13.	OSE (Solent)	7.3
1.	GLC	7.2
10.	OSE (Essex)	4.9
11.	OSE (Kent)	3.0
12.	OSE (Sussex Coast)	- 5.3

Clearly, the faster rate of natural increase in the OMA sub-divisions was one reason for their increasing share of the regional population. Natural increase in the OSE sub-divisions was comparatively slow, with the main exception of OSE (Berks-Oxon). In the extreme case, OSE (Sussex Coast) there was a consistent excess of deaths over births.

105. Turning now to the pattern of net migration, a similar classification of sub-divisions according to the percentage effect on the 1951 population is presented as follows:

Sub-division		
4.	OMA (East)	48.7
3.	OMA (North)	33.8
2.	OMA (West)	29.7
6.	OMA (South)	28.8
7.	OMA (SW)	22.3
12.	OSE (Sussex Coast)	21.4
5.	OMA (SE)	16.1
10.	OSE (Essex)	14.6
13.	OSE (Solent)	13.3
8.	OSE (Berks-Oxon)	12.1
11.	OSE (Kent)	11.7
9.	OSE (Beds-Bucks)	11.1
1.	GLC	-12.5

Once again, the favourable experience of the OMA sub-divisions in terms of population growth is in evidence. Net migration into the OSE sub-divisions has been much less rapid, although there has been a continuing inflow (largely associated with retirement) into the Sussex Coast area which has more than offset its natural decline in population. Greater London, of course, has experienced consistent net emigration, the absolute volume over the fifteen years to 1966 being well in excess of one million persons. It is interesting to look more closely at these net migration patterns, and examination of differences between the experience of sub-divisions in the two sub-periods 1951-1961 and 1961-1966 is particularly illuminating. The rate of gain from net migration into some areas has increased while the influx into others has fallen quite dramatically. Into the latter category fall the OMA sub-divisions (North), (East) and (South). Clearly their very heavy net inflow was largely in the 1950s, particularly associated with the rapid development of their New Towns. By contrast, the rate of net in-migration into most of the OSE sub-divisions increased in the '60s, and in three areas, OSE (Berks-Oxon), OSE (Kent) and OSE (Essex) the absolute volume of net inflow was greater in the five years after 1961 than in the previous ten years.

106. It would appear that the pattern of net migration has been the most important influence on the share of total regional population in each sub-division. The rank correlation between sub-divisions according to rate of total growth and rate of net migration is rather higher than that between the rate of total growth and the rate of natural increase. Moreover the sheer volume of net migration into the region (excluding

Greater London) is that much larger than the volume of growth due to natural increase. Nevertheless, it should be emphasised that in explaining the pattern of population growth attempts must be made to identify the causes underlying sub-divisional differences in both phenomena.

107. The rate of natural increase in any area is a function of age specific birth and death rates and the age composition of the population. Variations between the sub-divisions of the South East can be mostly explained in terms of this latter factor. Certainly the higher rates of natural increase in the OMA sub-divisions are the result of its younger age composition. Moreover, within the OSE the sub-divisions with the highest rate of natural increase are those with the lowest proportion of old persons. One would hardly expect otherwise! As for the determinants of the migration pattern, more research is needed. In general, three types of migration can be identified: (1) migration to an area involving employment in that area, (2) migration to an area involving travel to work elsewhere, (3) migration associated with retirement. One suspects that the composition of migrants according to such categories varies significantly as between the sub-divisions. The proportion of migrants of type (3) is probably well above average in most of the OSE sub-divisions, and type (2) may well be better represented than usual in the population moving into the OMA. However, there is no firm evidence here, and data availability thereby hampers further research into the explanation of differences between sub-divisions in population growth.

108. Finally, we should note that while analysis of population growth at the sub-divisional level is a convenient first step in the identification of intra-regional differentials, it is important to supplement such analysis by further research into trends at less highly aggregative levels. None of the sub-divisions is internally homogeneous with respect to population growth. Examination of the 1966 Ordnance Survey map of Population Change 1951-1961 mapped by Wards and Civil Parishes reveals clearly the extent of hetero-geneity. All sub-divisions featured some areas of overall decline principally in central areas of the major towns (Southend, Reading, Watford, Portsmouth, Brighton, etc.). Actual population growth is frequently markedly concentrated, especially in those sub-divisions which contain London New Towns but also in areas closely adjoining the major towns, such as Havant and Waterlooville (near Portsmouth) and Woodley and Earley (near Reading). Finally, sub-divisions also vary internally in the extent to which natural in-crease and net migration account for the population growth: obviously there is a considerable volume of population movement within each sub-division which is specifically internal in that it does not involve the crossing of sub-divisional boundaries. The next part of this chapter is concerned with the distribution of population within each of the sub-divisions, as distinct from the absolute level of that population.

URBANISATION

109. The purpose here is to integrate the information on population in each sub-division with factors related to land-use. In particular we seek to determine:

(a) differences between the sub-divisions in the degree of urban and rural habitation;

(b) the extent to which population growth has been occurring in predominantly urban or rural areas.

110. This involves the identification and measurement of an index of urbanisation. Three broad approaches are possible:

(1) to examine the changing pattern of land utilisation in each sub-division;

(2) to measure the average density of population in each sub-division and changes in density in the post-war period;

(3) to identify the proportion of persons in each sub-division living in urban areas and the propor-tion in predominantly rural areas in selected years.

111. The first approach would seem to be the most general, but land use studies are notoriously complex and the magnitude of effort involved in assembling the relevant information renders this outside the scope of this research project. Suffice it to say that the current Land Use Survey (undertaken under the direction of Dr. Alice Coleman at King's College, London) is generating very detailed information which could be compared with the results of the First Land Use Survey of the 1930s. In this way it would be possible to derive some picture of changing land-use patterns in the post-war period. A sub-divisional analysis of this might be well worthwhile in terms of deriving information on comparative trends in urbanisation.

32

112. However, it has been suggested that information on the proportion of land under urban uses can be estimated from population figures (according to the method used by Dr. R. H. Best in Geographical Journal, March 1965). The basic assumption is that urban land provision per thousand population is the same in the South East as in England and Wales. (Urban land provision is considered as the area occupied by residential, industrial, educational usages, other town usages such as roads, waterworks, cemeteries and public buildings, and isolated dwellings and roads and railways in the open countryside). For the nation as a whole the level of urban land provision was 82.3 acres per thousand population in 1950-1951 and 86.1 in 1960-1961. Applying this proportion to data on population and acreage in the whole of the South East Region we obtain for 1951 the estimated proportion of land in urban use as 18.5% and for 1961 the figure of 20.8%. Making the further assumption that the national level of urban land provision increased at a similar rate in the period 1961-1966 (i.e. to 88.0 acres per thousand population) we obtain the 1966 estimate for the South East Region as 22.2%.

113. This suggests that only about 4% of the total land area of the Region fell under new urban usage in the period 1951-1966. Now, in principle this same method could be applied to each of the thirteen sub-divisions. However, the central assumption - that urban land provision per thousand population is the same as at the national level - becomes increasingly dubious as the size of the spatial units considered diminishes. The assumption may be justified for the whole region because of its large size and great variety of settlement type: it is probably unjustified for small sub-divisions. In fact the urban land usage in the GLC area would come out over 100%, an obviously nonsensical result. Moreover, it can be seen that the main influence on the results is the density of population in each area.

114. Therefore we adopt the second principal approach to studying urbanisation in the sub-divisions and present simple figures on population density (in Table 3.3) without drawing inferences about land usage patterns. The variation in 1966 can be seen to be between 19.45 persons per acre in the GLC area and 0.60 in OSE (Beds-Bucks). Perhaps most interesting is the clear distinction which can be drawn between the OMA and OSE sub-divisions: all the former with the exception of OMA (South East) have a density above every OSE sub-division. The critical level would seem to be about two persons per acre.

115. However, population density measures may not be ideal indices of urbanisation. There would seem to be two main limitations:

(a) no account is taken of the *distribution* of the population *within* the region. For example this index would imply that the extent of urbanisation is the same in two regions with the same total population and area but a different distribution between urban and rural districts. (i.e. a difference in the degree of 'agglomeration');

(b) measuring the *change* in urbanisation over a period by the density index simply results in a figure of rate of population growth. No indication is given of the extent to which those extra people are living in established towns or rural districts.

116. An alternative index of urbanisation, which to some extent alleviates these difficulties, is based on the proportion of people living in each sub-division who live in a certain type of local authority area, (i.e. all CBs, MBs and UDs, or all CBs, MBs and UDs over a certain size). This is termed an index of agglomeration in that it demonstrates whether population distribution in each area is 'bunchy' or widely spread.

117. Such an index was calculated for the thirteen SE sub-divisions, taking five different size definitions of what constitutes an urban area. The rank correlations between the results of each of the five were calculated as follows:-

(a)				
.984	(b)			
.929	.962	(c)		
.764	.808	.857	(d)	
.319	.335	.286	.610	(e)

(a) % population living in all CBs, MBs and UDs.

(b) "   "   "   " " " " "   " over 10,000 pop.

(c) "   "   "   " " " " "   "   " 20,000 "

(d) "   "   "   " " " " "   "   " 40,000 "

(e) "   "   "   " " " " "   "   " 60,000 "

High correlations would indicate either:

(1) that each sub-division has a uniform structure in terms of town sizes;

(2) that some sub-divisions have a highly urbanised structure while others are predominantly rural and with no large towns. (This would not seem to be the case in the SE sub-divisions since even the most rural areas have at least one large town, e.g. Oxford in (8), Bedford in (9), and Colchester in (10)).

118. Generally speaking, the correlations are insufficiently high to suggest that there is much uniformity of structure. Hence one cannot justifiably use any one of the indices of agglomeration as a proxy for another. However, the correlation between (a) and (b) is very good and these would seem to be the most readily justifiable general indices of the extent of urban dwelling. It turns out that the values of index (b) in the thirteen sub-divisions tend to come out generally higher in 1966 than in 1961 and higher in 1961 than 1951, indicating apparent decreases in agglomeration over time. This seemingly implausible result is partly the result of Greater London's declining share of the Region's population, but even for the South East minus the GLC area the index is static rather than rising as one would suspect. The explanation would seem to lie in the arbitrariness of existing Local Authority area boundaries. In particular:

(1) small towns are sometimes regarded as separate UDs (e.g. Woodstock, Oxon), and sometimes included in RDs (e.g. Fawley, Hants, included in New Forest RD, or, even more dramatic, Bracknell New Town in Easthampstead RD);

(2) urbanisation may take place within RDs, either in the expansion of small towns or villages, or (important) growth around MBs, CBs and UDs, (e.g. growth of Reading taking place largely in Bradfield and Wokingham RDs).

119. For these reasons attempts have been made to devise alternative indices of agglomeration which do also take account of urbanisation within RDs. The result is an index based on the proportion of persons in each sub-division living in all CBs, MBs and UDs plus all civil parishes within Rural Districts which have a density of population above a certain level. Taking this critical level at 2 persons per acre we obtain the results for 1961 shown in Table 3.4 (similar calculations for 1966 are not feasible in the absence of Census of Population data classified by parish). It must be strongly emphasised that these results are to be treated with caution and that not too much be read into small differences between the sub-divisions. However, they do seem generally sensible and concure with general expectations, e.g. the low values in sub-divisions (8), (9) and (10) where population retains many rural characteristics, and the higher values in OMA sub-divisions and also in OSE sub-divisions (12) and (13) where agglomeration of population (in the string of coastal Sussex towns and in the Southampton-Portsmouth and Bournemouth-Poole areas) is quite pronounced.

120. Also shown in Table 3.4 is the corresponding area of urban places (i.e. area covered by CBs, MBs, UDs and civil parishes within RDs with a population density in excess of 2 per acre) as a percentage of the total area. It is interesting to note that for the region as a whole the proportion comes out at 23.6% which is remarkably close to the estimate of 20.8% derived by the method explained earlier in this chapter, and perhaps this may be taken as lending further credibility to this index of agglomeration. Nevertheless, extreme care must be taken in the interpretation of these figures, and the calculated change in the index over the period 1951-1961 is not presented, because the figures are too small to be significant. Hence, we have not been able to answer the question posed at the outset concerning the urban/rural nature of the distribution of population *growth*. What has been achieved is a more static description in terms of density and agglomeration indices. Of course, these two are highly associated (the rank correlation between the sub-divisions in 1961 according to the two indices is + 0.846.); one would expect high density areas to be characterised by urban rather than rural dwelling! However, there are certain interesting differences, such as in OMA (West) which ranks 6th in density terms but only 10th in terms of the agglomeration index. Also the difference between the OMA and OSE sub-divisions is rather less marked in the case of the latter index of urbanisation.

POPULATION PROJECTIONS

121. We conclude this chapter by presenting details on the expected changes in the population in the thirteen sub-divisions over the period 1966-1981. Such projection is of crucial importance in the planning of intra-regional resource allocation in that it facilitates the identification of areas in particular need of investment in housing, transportation facilities and services in general.

122. The General Register Office has produced population projections for the South East region and its constituent sub-divisions*. First of all, we examine the anticipated pattern of natural increase in the thirteen sub-divisions. Static population projections demonstrate the expected natural increase of the existing population taking into account its age composition and forecasted birth and death rates. Such projections to 1971 and 1981 are shown in Table 3.5. Taking the whole period 1966-1981 we can see that the anticipated increase is only above 1% p.a. in sub-division OSE (Berks-Oxon), ranging down to sub-division OSE (Kent) with almost negligible growth and OSE (Sussex Coast) where the age distribution of population is such that a negative growth is expected. The most general classification is as follows:

Natural increase of 1966 population expected to exceed 1% p.a.:

      8.   OSE (Berks-Oxon)

Natural increase expected to be 0.5-1.0% p.a.:

      2.   OMA (West)
      3.   OMA (North)
      9.   OSE (Beds-Bucks)
      5.   OMA (South East)
      7.   OMA (South West)
      4.   OMA (East)

Natural increase expected to be below 0.5% p.a.:

      1.   GLC
     13.   OSE (Solent)
     10.   OSE (Essex)
      6.   OMA (South)
     11.   OSE (Kent)

Natural decrease expected:

     12.   OSE (Sussex Coast)

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* The projections are based on a 1966 starting population estimated by GRO before the full results of the 1966 Census of England and Wales became available. The revisions to the estimated starting populations would, of course, affect the population projections, but the resulting differences would be very small in nearly every case. However, the difference is quite large in one case, that of Greater London, where the estimated 1966 population on which the projections were based was 7,914 thousands, compared with the corresponding Census figure of 7,836 thousands. For this reason, as well as for reasons of uncertainty about future overspill policy, the projections presented for the GLC area should be interpreted with caution.

Rather more interesting are the anticipated effects of net migration, as shown in Table 3.6.

123. For the Region as a whole the effect of net migration is expected to be relatively minor. This is primarily because of:

(a) regional policy designed to divert growth to the Development Areas,

(b) the plans to develop London overspill areas outside the South East Region (e.g. at Swindon, Peterborough, and Ipswich).

Thus, the expectation is certainly not of a large net influx of immigrants into the region*. On the contrary, a small net emigration is thought probable in the period up to 1971, while the effect of population movements in the following decade is likely to add only some 18 thousand persons per annum to the population of the region. This amounts to only 11% of the total anticipated growth for the period 1966-1981, the other 89% resulting from the natural increase of the existing population.

124. However, examination of the pattern of expected migration in the three major areas of the Region shows that, while the level of net migration may have a relatively minor impact on the total regional growth, the patterns of migration between these areas are likely to produce a dramatic redistribution of population. Greater London will experience continuing net emigration. The actual volume of the outflow is largely a function of housing policy within the GLC area, so any forecasts clearly depend upon assumptions concerning such policy variables. The GRO projections shown in Table 3.6 (and based on pre-census estimates of the population in 1966) suggest that the value of net emigration over 15 years to 1981 may be anything up to 1 million persons. By contrast, both the OMA and OSE are expected to experience net immigration, the total net inward movement being 954 thousand persons. The effect of this influx on population growth, after taking account of the impact of the population movements on natural increase, is estimated at 1,107 thousand persons. Hence the net increase for the whole region of 169 thousands: a net loss of 938 thousands from Greater London and a net gain of 1,107 thousands in the rest of the Region.

125. As for the split of these net immigrants between the OMA and the OSE, the expected share is approximately three to one in favour of the OSE sub-divisions: the effect of net migration on the OMA will be an increase of rather less than 300 thousands, while the effect on the OSE is expected to be well in excess of 800 thousands. Examination of the expected impact on each of the constituent sub-divisions reveals that the projected net migration effect is larger in all six OSE sub-divisions than every sub-division of the OMA in terms of the percentage growth of population involved. The effect of estimated net migration 1966-1981 as a percentage of the 1966 population is as high as 55% in sub-division (9) and the lowest of the OSE sub-divisions with 16.6% is higher than the highest of the OMA sub-divisions, OMA (West), in which the corresponding growth effect is only 10.7%. Of course, this is the effect of the current policy proposals to develop counter-magnets towards the periphery of the Region. The point about these figures is that they demonstrate what a dramatic effect this policy is expected to have on the redistribution of population within the Region. Comparison with the pattern of net migration in the sub-divisions 1951-1966 as discussed earlier in this chapter shows the importance of such policy in almost completely reversing the ordering of the sub-divisions in terms of the growth resulting from net migration.

126. The following classification of sub-divisions seems most appropriate:

(a) Effect of net migration 1966-1981 to increase population by over 25%:

9. OSE (Beds-Bucks) (Effects of Bedford-Milton Keynes development largely here)
10. OSE (Kent) (Effects of Ashford development here)

(b) Effect of net migration 1966-1981 to increase population by 10-25%:

8. OSE (Berks-Oxon)
10. OSE (Essex) (Effects of Colchester expansion here)
13. OSE (Solent) (Effects of major Southampton-Portsmouth development)
12. OSE (Sussex Coast) (Continuing immigration associated with retirement)
2. OMA (West) (Some effects of Milton Keynes development here)

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* The projections presented here do not reflect the anticipated reduction in immigration from outside England and Wales, which would, of course, further reduce the magnitude of expected population growth.

(c) Effect of net migration 1966-1981 to increase population by less than 10%:

    4. OMA (East)
    3. OMA (North)
    5. OMA (South East)
    7. OMA (South West)
    6. OMA (South)

(d) Effect of net migration 1966-1981 expected to reduce population:

    1. GLC

127. Finally we combine the projections of net migration and natural increase effects to derive estimates for the overall growth of population. These are shown in Table 3.7. The figures in the final column of that table indicate the expected percentage growth in the population of each sub-division over the period 1966-1981. This is below 10% only in sub-divisions OMA (South), OSE (Sussex Coast) and of course, in Greater London. Clearly OSE (Beds-Bucks) faces the largest relative increase, reflecting the planned Bedford-Milton Keynes development, but in absolute terms, other sub-divisions can expect rather greater expansion. In fact the differences between sub-divisions in projected overall growth are rather less than the difference in terms of either the static projections or the natural increase effects. This reflects the fact that, in general, the gain from net migration is expected to be the least in those sub-divisions with the highest projected natural increase of the existing population. Thus the majority of the growth in all OMA sub-divisions is expected to arise from natural increase, while the majority of total growth in all OSE areas (except sub-division 8) is expected to result from net migration.

128. We conclude this chapter with a brief comment on Table 3.8 which shows the projected age distribution of population in each sub-division in 1981. The final column of that table is most interesting. Comparison with the information on population age distribution in 1951 and 1966 presented in Tables 5.2 and 5.2(a), shows that the trend towards an increasingly economically unfavourable age structure is expected to continue. For the Region as a whole the percentage of persons of working age will have fallen from its 1951 level of 64.4% to below 60% by 1981. The other important point to note is that the variation between sub-divisions in this percentage is likely to become less. The range between the highest and lowest sub-divisional values is 64.5-54.4 in 1964 but only 63.5-57.3 in 1981. This anticipated narrowing of differentials is partly the result of the distribution of expected net migration, since the gain from net migration is likely to be greatest in the sub-divisions with the least economically favourable age composition (e.g. the coastal OSE sub-division). Given the generally younger age composition of migrants, a narrowing of inter-sub-divisional differentials in the favourability of population age composition is to be expected.

Table 3.1 Home population in the sub-divisions of the SE Standard Region at mid-year 1951, 1961 and 1966

Sub-division	Home population at mid-year			Home population changes								
				1951-61			1961-66			1951-66		
	1951 '000	1966 '000	1966 '000	Total change '000	Percentage change %	Annual growth rate %	Total change '000	Percentage change %	Annual growth rate %	Total change '000	Percentage change %	Annual growth rate %
1. GLC Area	8,209	7,985	7,836	-224	- 2.7	-0.3	-149	- 1.9	-0.4	-373	- 4.5	-0.3
2. OMA (West)	627	800	901	+173	+27.7	+2.4	+101	+12.6	+2.4	+274	+43.7	+2.4
3. OMA (North)	732	1,008	1,113	+276	+37.7	+3.2	+104	+10.3	+2.0	+381	+52.1	+2.8
4. OMA (East)	558	804	910	+246	+44.2	+3.7	+106	+13.2	+2.5	+352	+63.1	+3.3
5. OMA (SE)	586	660	734	+ 74	+12.6	+1.2	+ 74	+11.2	+2.1	+148	+25.3	+1.5
6. OMA (South)	437	562	597	+125	+28.5	+2.5	+ 36	+ 6.2	+1.2	+160	+36.6	+2.1
7. OMA (SW)	565	684	754	+119	+21.1	+1.9	+ 70	+10.2	+2.0	+189	+33.5	+2.0
OMA : TOTAL	3,505	4,518	5,009	+1,013	+28.9	+2.6	+491	+10.9	+2.1	+1,503	+42.9	+2.4
8. OSE (Berks-Oxon)	390	442	487	+ 52	+13.3	+1.3	+ 46	+10.5	+2.0	+ 97	+24.9	+1.5
9. OSE (Beds-Bucks)	213	230	252	+ 17	+ 8.0	+0.8	+ 22	+ 9.6	+1.8	+ 39	+18.3	+1.1
10. OSE (Essex)	305	329	363	+ 24	+ 7.7	+0.7	+ 34	+10.4	+2.0	+ 57	+18.8	+1.2
11. OSE (Kent)	521	546	591	+ 25	+ 4.8	+0.5	+ 46	+ 8.4	+1.6	+ 71	+13.6	+0.9
12. OSE (Sussex Coast)	783	859	914	+ 76	+ 9.8	+0.9	+ 55	+ 6.4	+1.2	+131	+16.7	+1.0
13. OSE (Solent)	1,290	1,443	1,554	+153	+11.8	+1.1	+111	+ 7.7	+1.5	+264	+20.4	+1.3
OSE : TOTAL	3,502	3,848	4,161	+346	+ 9.9	+0.9	+314	+ 7.9	+1.5	+660	+18.8	+1.2
SE : TOTAL	15,216	16,351	17,006	+1,134	+ 7.5	+0.7	+656	+ 4.0	+0.8	+1,790	+11.8	+0.7

Source: General Register Office

Note: 1966 Figures adjusted in the light of the results of the 1966 Census

Table 3.2(a) Components of population change in the
SE sub-divisions 1951-1966

thousands

SE England sub-division	Total change in home population	Natural increase	Change in Armed Forces stationed in area	Gain to civilian pop. from AF rundown	Balance (mainly net migration)
1. Greater London : TOTAL	-372.6	595.1	-12.3	67.5	-1,022.9
2. OMA (West)	285.9	93.5	- 6.0	5.9	192.5
3. OMA (North)	376.4	123.2	- 0.3	7.0	246.5
4. OMA (East)	343.8	79.4	- 4.0	5.3	263.0
5. OMA (SE)	147.7	60.1	-11.9	5.1	94.2
6. OMA (South)	160.1	34.0	- 3.6	4.0	125.7
7. OMA (SW)	189.0	68.4	-10.7	5.1	126.2
OMA : TOTAL	1,503.0	458.6	-36.3	32.5	1,048.1
8. OSE (Berks-Oxon)	97.2	56.4	- 9.8	3.5	47.1
9. OSE (Beds-Bucks)	39.0	21.8	- 8.1	1.8	23.5
10. OSE (Essex)	57.4	14.9	- 4.9	2.6	44.7
11. OSE (Kent)	71.1	15.5	-10.0	4.4	61.1
12. OSE (Sussex Coast)	131.0	-41.3	- 2.4	6.7	167.9
13. OSE (Solent)	263.8	93.9	-13.5	11.3	172.1
OSE : TOTAL	659.3	161.3	-48.5	30.2	516.4
SE ENGLAND : TOTAL	1,789.9	1,215.0	-97.0	130.2	541.7

Note: The boundaries of three of the sub-divisions used here are not precisely the same as those used
in the remainder of this report. The migration assumptions used by GRO are based upon a slightly
different sub-divisional delineation used by the Ministry of Housing and Local Government;
Bishops Stortford UD and Sawbridgeworth UD are in sub-division(3)(and not in 4) and Bletchley
UD and Wing RD are included in sub-division(2)(rather than in 3).

Source: General Register Office.

Table 3.2(b) Components of population change in the
SE sub-divisions 1951-1961

thousands

SE England sub-division	Total change in home population	Natural increase	Change in Armed Forces stationed in area	Gain to civilian pop. from AF rundown	Balance (mainly net migration)
1. Greater London : TOTAL	-223.3	333.4	-10.4	58.9	-605.2
2. OMA (West)	177.7	47.9	- 2.8	5.0	127.6
3. OMA (North)	277.0	65.8	0.2	5.9	205.1
4. OMA (East)	239.3	42.1	- 3.3	4.5	196.0
5. OMA (SE)	73.8	30.5	-13.8	4.4	52.6
6. OMA (South)	124.5	18.4	- 2.8	3.4	105.5
7. OMA (SW)	119.2	36.9	-10.1	4.4	88.0
OMA : TOTAL	1,011.6	241.6	-32.5	27.6	774.8
8. OSE (Berks-Oxon)	51.7	32.6	- 6.4	3.0	22.5
9. OSE (Beds-Bucks)	17.0	11.2	- 7.9	1.6	12.1
10. OSE (Essex)	23.3	7.1	- 2.3	2.2	16.3
11. OSE (Kent)	25.0	10.4	- 9.4	3.8	20.2
12. OSE (Sussex Coast)	76.3	-25.9	- 2.4	5.8	98.7
13. OSE (Solent)	152.6	53.3	-13.8	9.7	103.4
OSE : TOTAL	345.8	88.8	-42.1	26.0	273.1
SE ENGLAND : TOTAL	1,134.1	663.8	-84.9	112.5	442.7

Note: The boundaries of three of the sub-divisions used here are not precisely the same as those used
in the remainder of this report. The migration assumptions used by GRO are based upon a slightly
different sub-divisional delineation used by the Ministry of Housing and Local Government;
Bishops Stortford UD and Sawbridgeworth UD are in sub-division(3)(and not in 4) and Bletchley
UD and Wing RD are included in sub-division(2)(rather than in 3).

Source: General Register Office.

Table 3.2(c) Components of population change in the
SE sub-divisions 1961-1966

thousands

SE England sub-division	Total change in home population	Natural increase	Change in Armed Forces stationed in area	Gain to civilian pop. from AF rundown	Balance (mainly net migration)
1. Greater London : TOTAL	-149.3	261.7	- 1.9	8.6	-417.7
2. OMA (West)	108.2	45.6	- 3.2	0.9	64.9
3. OMA (North)	99.4	57.4	- 0.5	1.1	41.4
4. OMA (East)	104.5	37.3	- 0.7	0.8	67.0
5. OMA (SE)	73.9	29.6	1.9	0.7	41.6
6. OMA (South)	35.6	15.6	- 0.8	0.6	20.2
7. OMA (SW)	69.8	31.5	- 0.6	0.7	38.2
OMA : TOTAL	491.4	217.0	- 3.8	4.9	273.3
8. OSE (Berks-Oxon)	45.5	23.8	- 3.4	0.5	24.6
9. OSE (Beds-Bucks)	22.0	10.6	- 0.2	0.2	11.4
10. OSE (Essex)	34.1	7.8	- 2.6	0.4	28.4
11. OSE (Kent)	46.1	5.1	- 0.6	0.6	40.9
12. OSE (Sussex Coast)	54.7	- 15.4	-	0.9	69.2
13. OSE (Solent)	111.2	40.6	0.3	1.6	68.7
OSE : TOTAL	313.5	72.5	- 6.4	4.2	243.3
SE ENGLAND : TOTAL	655.8	551.2	-12.1	17.7	99.0

Note: The boundaries of three of the sub-divisions used here are not precisely the same as those used in the remainder of this report. The migration assumptions used by GRO are based upon a slightly different sub-divisional delineation used by the Ministry of Housing and Local Government; Bishops Stortford UD and Sawbridgeworth UD are in sub-division(3)(and not in 4) and Bletchley UD and Wing RD are included in sub-division(2)(rather than in 3).

Source: General Register Office.

Table 3.3 Density of population in the SE sub-divisions

SE England sub-division	Acreage (thousands)	Average number of persons per acre		
		1951	1961	1966
1. Greater London : TOTAL	394	20.78	20.27	19.45
2. OMA (West)	502	1.23	1.57	1.75
3. OMA (North)	501	1.45	2.00	2.18
4. OMA (East)	350	1.61	2.31	2.57
5. OMA (SE)	321	1.79	2.05	2.25
6. OMA (South)	444	0.98	1.25	1.32
7. OMA (SW)	312	1.80	2.15	2.34
OMA : TOTAL	2,429	1.43	1.84	2.02
8. OSE (Berks-Oxon)	712	0.53	0.61	0.67
9. OSE (Beds-Bucks)	408	0.51	0.56	0.60
10. OSE (Essex)	565	0.53	0.58	0.64
11. OSE (Kent)	601	0.86	0.90	0.97
12. OSE (Sussex Coast)	656	1.20	1.31	1.38
13. OSE (Solent)	1,009	1.27	1.41	1.50
OSE : TOTAL	3,950	0.88	0.96	1.03
SE ENGLAND : TOTAL	6,774	2.23	2.40	2.46

Source: Census of England and Wales 1951, 1961 and 1966.

Table 3.4 Indices of agglomeration in the SE sub-divisions

SE England Sub-division	Index of agglomeration* 1961	Area of urban places* as % of total area
1. Greater London : TOTAL	100.0	100.0
2. OMA (West)	71.2	20.8
3. OMA (North)	85.8	28.6
4. OMA (East)	90.6	47.5
5. OMA (SE)	75.1	20.7
6. OMA (South)	76.9	22.0
7. OMA (SW)	82.8	39.0
OMA : TOTAL	81.0	28.8
8. OSE (Berks-Oxon)	50.1	4.9
9. OSE (Beds-Bucks)	52.4	8.4
10. OSE (Essex)	58.6	11.7
11. OSE (Kent)	71.3	14.9
12. OSE (Sussex Coast)	78.9	14.0
13. OSE (Solent)	82.6	18.3
OSE : TOTAL	72.5	12.7
SE ENGLAND : TOTAL	88.4	23.6

* The index of agglomeration is defined as the proportion of home population living in urban places (which constitute County Boroughs, Municipal Boroughs, Urban Districts, and all Civil Parishes with a population density in excess of two persons per acre).

Source: Census of England and Wales 1961

Table 3.5 Static projections of population in the SE sub-divisions

thousand persons

SE England sub-division	Mid-1966 estimate (starting population)	Static projection		Percentage change 1971-1981
		1971	1981	
1. Greater London : TOTAL	7,914	8,139	8,561	+ 8.2
2. OMA (West)	931	979	1,071	+15.0
3. OMA (North)	1,106	1,154	1,246	+12.7
4. OMA (East)	882	913	973	+103.
5. OMA (SE)	734	762	817	+11.3
6. OMA (South)	599	608	625	+ 4.3
7. OMA (SW)	757	785	839	+10.8
OMA : TOTAL	5,009	5,200	5,572	+12.4
8. OSE (Berks-Oxon)	448	510	551	+23.0
9. OSE (Beds-Bucks)	251	261	281	+12.0
10. OSE (Essex)	362	368	380	+ 5.0
11. OSE (Kent)	590	591	594	+ 0.7
12. OSE (Sussex Coast)	907	882	833	- 8.2
13. OSE (Solent)	1,551	1,582	1,645	+ 6.1
OSE : TOTAL	4,149	4,194	4,283	+ 3.2
SE ENGLAND : TOTAL	17,072	17,532	18,416	+ 7.9

Note: The boundaries of three of the sub-divisions used here are not precisely the same as those used in the remainder of this report. The migration assumptions used by GRO are based upon a slightly different sub-divisional delineation used by the Ministry of Housing and Local Government; Bishops Stortford UD and Sawbridgeworth UD are in sub-division(3) (and not in 4) and Bletchley UD and Wing RD are included in sub-division(2)(rather than in 3).

Note: These projections are based on mid-1966 population estimates which do not take into account the revisions produced in the light of the results of the 1966 Census of Population of England and Wales.

Source: General Register Office.

Table 3.6 Anticipated effects of net migration on the total population in the SE sub-divisions

thousand persons

SE England sub-division	Mid-1966 estimated population	Effect of net migration 1966-1971	Effect of net migration 1966-1981	Effect of net migration 1966-1981 as percentage of 1966 population
1. Greater London : TOTAL	7,914	- 326	- 938	- 11.8
2. OMA (West)	931	+ 46	+100	+10.7
3. OMA (North)	1,106	+ 26	+ 49	+ 4.4
4. OMA (East)	882	+ 37	+ 73	+ 8.3
5. OMA (SE)	734	+ 12	+ 29	+ 4.0
6. OMA (South)	599	+ 3	+ 10	+ 1.7
7. OMA (SW)	757	+ 9	+ 22	+ 2.9
OMA : TOTAL	5,009	+132	+285	+ 5.7
8. OSE (Berks-Oxon)	448	+ 22	+ 98	+21.9
9. OSE (Beds-Bucks)	251	+ 25	+138	+55.0
10. OSE (Essex)	362	+ 18	+ 70	+19.3
11. OSE (Kent)	590	+ 38	+182	+30.8
12. OSE (Sussex Coast)	907	+ 42	+151	+16.6
13. OSE (Solent)	1,551	+ 40	+183	+11.8
OSE : TOTAL	4,149	+185	+822	+19.8
SE ENGLAND : TOTAL	17,072	- 7	+169	+ 1.0

Note: The boundaries of three of the sub-divisions used here are not precisely the same as those used in the remainder of this report. The migration assumptions used by GRO are based upon a slightly different sub-divisional delineation used by the Ministry of Housing and Local Government; Bishops Stortford UD and Sawbridgeworth UD are in sub-division(3)(and not in 4) and Bletchley UD and Wing RD are included in sub-division(2)(rather than in 3).

Note: These projections are based on mid-1966 population estimates which do not take into account the revisions produced in the light of the results of the 1966 Census of Population of England and Wales.

Source: General Register Office.

Table 3.7 Overall projections of population in the SE sub-divisions

thousand persons

SE England sub-division	Mid-1966 estimated population	With-migration projections		Percentage change	
		1971	1981	1966-71	1966-81
1. Greater London : TOTAL	7,914	7,814	7,623	- 1.3	- 3.7
2. OMA (West)	931	1,024	1,172	+10.0	+25.9
3. OMA (North)	1,106	1,180	1,295	+ 6.7	+17.1
4. OMA (East)	882	950	1,047	+ 7.7	+18.7
5. OMA (SE)	734	774	847	+ 5.4	+15.4
6. OMA (South)	599	611	636	+ 2.0	+ 6.2
7. OMA (SW)	757	794	861	+ 4.9	+13.7
OMA : TOTAL	5,009	5,333	5,857	+ 6.5	+16.9
8. OSE (Berks-Oxon)	448	532	649	+18.8	+44.9
9. OSE (Beds-Bucks)	251	286	419	+13.9	+66.9
10. OSE (Essex)	362	386	450	+ 6.6	+24.3
11. OSE (Kent)	590	629	776	+ 6.6	+31.5
12. OSE (Sussex Coast)	907	924	984	+ 1.9	+ 8.5
13. OSE (Solent)	1,551	1,622	1,828	+ 4.6	+17.9
OSE : TOTAL	4,149	4,379	5,106	+ 5.5	+23.1
SE ENGLAND: TOTAL	17,072	17,526	18,585	+ 2.7	+ 8.9

Note: The boundaries of three of the sub-divisions used here are not precisely the same as those used in the remainder of this report. The migration assumptions used by GRO are based upon a slightly different sub-divisional delineation used by the Ministry of Housing and Local Government; Bishops Stortford UD and Sawbridgeworth UD are in sub-division (3)(and not in 4) and Bletchley UD and Wing RD are included in sub-division (2)(rather than in 3).

Note: These projections are based on mid-1966 population estimates which do not take into account the revisions produced in the light of the results of the 1966 Census of Population of England and Wales.

Source: General Register Office.

Table 3.8 Projected age distribution of the population in the SE sub-divisions 1981

thousand persons

SE England sub-division	Persons 0-14	Males				Females				Total persons of working age * and percentage of total pop.	
		15-29	30-44	45-64	65+	15-29	30-44	45-59	60+		
1. GLC	1,843	704	781	787	453	689	841	570	955	4,372	57.4
2. OMA (West)	305	132	107	128	58	126	107	100	108	700	59.7
3. OMA (North)	318	153	124	146	64	141	122	108	120	794	61.3
4. OMA (East)	247	123	101	122	54	113	98	90	99	647	61.8
5. OMA (SE)	216	95	79	94	39	92	80	73	79	513	60.6
6. OMA (South)	138	78	62	73	33	72	63	56	60	404	63.5
7. OMA (SW)	206	98	82	97	45	94	82	74	82	528	61.3
OMA : TOTAL	1,431	678	555	660	293	638	552	502	547	3,586	61.2
8. OSE (Berks-Oxon)	171	71	71	64	30	74	62	54	51	396	61.0
9. OSE (Beds-Bucks)	120	47	42	42	15	49	39	38	27	257	61.3
10. OSE (Essex)	113	48	43	46	28	48	39	38	48	262	58.2
11. OSE (Kent)	192	93	66	81	40	90	66	67	81	463	59.7
12. OSE (Sussex Coast)	215	107	84	101	62	102	89	82	143	565	57.4
13. OSE (Solent)	443	203	182	186	100	197	168	145	203	1,081	59.1
OSE : TOTAL	1,254	569	488	520	275	560	463	424	553	3,024	59.2
SE ENGLAND : TOTAL	4,527	1,951	1,824	1,967	1,021	1,887	1,856	1,496	2,055	10,982	59.1

* Males aged 15-64 plus females aged 15-59.

Note: The boundaries of three of the sub-divisions used here are not precisely the same as those used in the remainder of this report. The migration assumptions used by GRO are based upon a slightly different sub-divisional delineation used by the Ministry of Housing and Local Government; Bishops Stortford UD and Sawbridgeworth UD are in sub-division(3) (and not in 4) and Bletchley UD and Wing RD are included in sub-division(2)(rather than in 3).

Note: These projections are based on mid-1966 population estimates which do not take into account the revisions produced in the light of the results of the 1966 Census of Population of England and Wales.

Source: General Register Office.

Percentage change

Fig. 3.1 HOME POPULATION CHANGE IN THE SUB-DIVISIONS OF THE SOUTH EAST STANDARD REGION, 1951-1966

The height of the columns represents the percentage change in home population over the period 1951-1966. For detailed figures see Table 3.1.

CHAPTER 4 EMPLOYMENT AND INDUSTRY

129. In this section we examine both the growth and industrial composition of employment in the thirteen sub-divisions, paying particular attention to the relationship between sub-divisional specialisation and growth.

GROWTH OF TOTAL EMPLOYMENT

130. Detailed information on the rates of employment growth in each sub-division is shown in Table 4.1. These figures are based on Department of Employment and Productivity estimates compiled from local employment exchange registers. This source is preferred to the Census of Population of England and Wales because the bias in the 1966 Census figures causes difficulties in attempting to use them for the purposes of identifying rates of change in employment. However, it must be strongly emphasised that the DEP estimates are to be treated with caution since they too are liable to certain margins or error. In particular the 1951 figures were adjusted on a rather arbitrary basis to accord with Planning Region boundaries. The figures were not adjusted for employees travelling out of the areas for employment, and the unlocated employees were distributed outside London on a basis proportionate to numbers in employment. As a result the figures on employment growth 1951-1961 can be regarded as no more than approximations. Regional boundary adjustments were carried out more accurately in 1961 and the distribution of unlocated employees was on the same, albeit rather arbitrary, basis in both 1961 and 1966. Certain other limitations also exist relating, for example, to the allocation of post office employees and civil servants. Such discrepancies are not likely to be of great significance when figures are taken for large areas, but may introduce distortion into sub-divisional estimates, particularly for the 1951-1961 period. For this reason, no significance can be read into small differences in the figures and we draw only very general conclusions, as under:-

>(1) The rate of growth shows notable differences between the three major areas. The OMA seems to have had clearly the fastest increase, being something like twice as rapid as in the OSE in the decade after 1951. During the 'sixties, growth has increased rapidly in the OSE such that in this latter period the rate of growth has been very similar to that in the OMA. As for Greater London, growth has been slower than in any of the other sub-divisions. Moreover, while employment in Greater London grew by some 350 thousand in the 1951-61 period, the growth during the 1960s has been negligible. In general this reduction in the GLC's growth rate seems to have more than offset the increasingly rapid growth in the OSE such that the rate of employment growth in the Region as a whole has fallen slightly since the 1950s.

>(2) In individual sub-divisions the variety of experience is even greater, both in terms of the average rate of employment growth and the change in that average rate between 1951-1961 and 1961-1966. We deal with the former point first by classifying the sub-divisions as under:

>>Employment growth 1951-1966 over 3% p.a.:

>>>3. OMA (North)
>>>4. OMA (East)
>>>6. OMA (South)

>>Employment growth 1951-1966 between 2 and 3% p.a.:

>>>2. OMA (West)
>>>8. OSE (Berks-Oxon)
>>>9. OSE (Beds-Bucks)
>>>10. OSE (Essex)

Employment growth 1951-1966 between 1 and 2% p.a.:

    5. OMA (South East)
    7. OMA (South West)
  11. OSE (Kent)
  12. OSE (Sussex Coast)
  13. OSE (Solent)

Employment growth 1951-1966 below 1%:

    1. GLC

131. As for changes in the experience of the individual sub-divisions between the two sub-periods studied, conclusions must be particularly tentative. Nevertheless, it seems that most sub-divisions have experienced a faster rate of growth in the 'sixties than in the 'fifties. The outstanding exceptions are OMA (East) where the growth rate appears about the same, OMA (North) which had the fastest growth in the 1951-1961 period but seems to have been second slowest in the latter period, and Greater London. As already noted these reductions in employment growth, particularly in Greater London, seem to have more than offset the increases in other sub-divisions, such that the growth of employment in the 1960s has been a little slower than in the 1950s for the Region as a whole. Growth in the 1951-1961 period exceeded 900 thousand jobs, and amounted to about 400 thousand in the five years 1961-1966.

132. Of course, it will be noticed that the ordering of sub-divisions according to employment growth is very similar to that in the previous chapter relating to the growth of total population 1951-1966. However, the correlation is not perfect, and the reasons underlying such imperfections (changes in age structure, activity and unemployment rates, and net workplace movements) form the subject of the following chapter. Suffice it to say for the moment that employment growth is obviously bound to be fairly closely spatially associated with population growth, especially in a region in which the demand for labour generally exceeds its supply. However, the direction of causation is not clear, and it would seem worthwhile to attempt some *independent* explanation of the sub-divisional variations in the growth of employment.

133. The most useful first step in explaining employment growth in sub-divisional economies, is to separate out the structural effects by the method known as shift and share analysis. This is a particular standardisation technique which can be used to divide the growth of any region's or sub-divisions employment into three parts:

(a) The regional share (or national growth) component: this is the amount by which total employment in the region would have grown during the period studied if it had grown at precisely the same rate as that of total employment in the nation as a whole.

(b) Proportionality shift (or industrial mix) component: this may be thought of as the extra amount by which employment in the region has grown as a result of the region specialising in nationally fast-growing, or slow-growing and declining industries. This shift will be positive for a region with above average proportions of employment in nationally fast growing industries, and negative for a region specialising in nationally static or declining industries.

(c) The differential shift (or regional) component: this third item reflects the regional extra amount of employment growth from employment in each industry in the region growing at a faster or slower rate than its national growth rate (the difference in the regional and national growth rates of the relevant industries). A region in which employment grew faster than its industrial mix suggests, would feature a positive differential shift, while the shift would be negative in the case of a region in which employment grew more slowly than its industrial mix indicates.

134. The sum of the two shifts represents a net gain or loss to the region over and above the regional share of national growth. The three components, therefore, are exhaustive of the actual regional growth of total employment. Algebraically we may consider the model as follows:

Let E_{ij} = no. employed in the ith industry in region j

$\sum_{i} E_{ij}$ = "   "   "   all   "   "   "

$\sum_{j} E_{ij}$ = "   "   "   "   ith   "   " all regions

$\sum_{i}\sum_{j} E_{ij}$ = "   "   "   all   "   "   "

Let subscript o indicate the base year and subscript t denote the terminal year of the period studied. To simplify the notation, the following analysis omits the i,j subscripts which should be attached to each E. However, they are shown beneath the Σ sign to indicate the range of summation.

(1)   Total growth in region j = $\sum_{i} E_t - \sum_{i} E_o$

(2)   Regional share   = $\sum_{i} E_o \left(\sum_{i}\sum_{j} E_t / \sum_{i}\sum_{j} E_o\right) - \sum_{i} E_o$

(3)   Total shift   = $\sum_{i} E_t - \sum_{i} E_o \left(\sum_{i}\sum_{j} E_t / \sum_{i}\sum_{j} E_o\right)$

(4)   Proportionality shift   = $\sum_{i} E_o \left\{ \left(\sum_{j} E_t / \sum_{j} E_o\right) - \left(\sum_{i}\sum_{j} E_t / \sum_{i}\sum_{j} E_o\right) \right\}$

(5)   Differential shift   = $\sum_{i} \left\{ E_t - E_o \left(\sum_{j} E_t / \sum_{j} E_o\right) \right\}$

135.   Applying this technique to Census data[*] on employment in 1951 and 1961 we obtain the values for the sub-divisions which are all presented in Table 4.2[/] as a percentage of the relative 1951 employment level. Perhaps the simplest way of interpreting this information is by summarising as in the following diagram:

	Other factors very advantageous	Other factors advantageous	Other factors slightly advantageous	Other factors disadvantageous
Very advantageous industrial structure	(3)OMA(North)			(1)GLC
advantageous industrial structure	(2)OMA(West) (4)OMA(East) (6)OMA(South)		(5)OMA(SE)	
slightly advantageous industrial structure		(7)OMA(SW) (8)OSE(Berks-Oxon)	(12)OSE(Sussex)	
disadvantageous industrial structure		(13)OSE(Solent) (10)OSE(Essex)	(9)OSE(Beds-Bucks)	(11)OSE(Kent)

[*]   We use Census data on employment growth rather than DEP data because information of the industrial composition of employment in the sub-divisions for a base year (1951) is available only from the former source. It will be noted that the revealed growth rates do differ from those estimated by DEP. However, the ordering of the sub-divisions in terms of rates of employment growth is very similar.

[/]   It should be noted that these results are based on an application of the shift and share method to data classified at the SIC Order level. Analysis at finer levels of industrial classification (e.g. MLH) is generally to be preferred, although empirically it is doubtful that this would significantly affect the general results in this case.

136. Proportionality shifts (representing the favourability or unfavourability of industrial structure in terms of national trends) were highest in Greater London and the OMA, particularly OMA (North). Industrial structure in all the OSE sub-divisions was relatively unfavourable, because of greater specialisation in nationally static or declining industries such as agriculture, shipbuilding and holiday trades. Sub-divisions OSE (Essex) and OSE (Kent) come out worst. The result of all this is that the 'expected' growth of employment (regional share *plus* proportionality shift) over the period 1951-61 varied between over 10% in OMA (North) and below 2% in OSE (Essex). The regional average comes out at 8.3% compared with the national average of 5.9% suggesting that the industrial composition of employment in the South East in 1951 was generally well suited to the national trends of the following decade. In fact, employment grew even faster than 'expected' as indicated by a positive differential shift of 1%. The experience of differential growth in the sub-divisions is, however, very varied indeed. The growth of employment in Greater London was some 5% less than 'expected', while employment in the OMA grew by over 17% more than the initial industrial structure would have suggested. Indeed in sub-division OMA (North) differential growth exceeded 33%. By contrast, employment in the OSE grew by only some 3% more than 'expected', and there was actually negative differential growth in OSE (Kent).

137. The important point to emphasise in all this is that, in attempting to *explain* sub-divisional variations in employment growth, it would seem useful to isolate the effects of industrial structure and concentrate in explaining the residual. The obvious parallel is the removal of natural increase effects in explaining population changes, although of course, it is recognised that 'employment growth due to industrial structure' is by no means such a unique concept as the shift and share method implicitly suggests (see for example, D. I. Mackay 'Industrial Structure and Regional Growth, A Methodological Problem', Scottish Journal of Political Economy, June 1968).

138. Also, there is a further problem in that it is not possible to apply such analyses to employment growth in the 1960s because of the lack of information on industrial structure for a base year. 1961 Census information on employment by SIC Order comparable to that used for 1951 is not available in a form which can be aggregated to sub-divisional level. Also this paucity of data on industrial structure, coupled with the change in Standard Industrial Classification in 1958, renders impossible the isolation of a third effect, the 'proportionality modification shift' (see'Regional Growth and Structural Adaptation', University of Reading Discussion paper in Economics No. 5) which provides an estimate of the extent to which sub-divisions are improving their industrial composition. Thus, the analyses of employment growth are restricted by lack of data.

139. Board of Trade Industrial Development Certificate (idc) statistics were examined, in order to find out whether there was any consistent relationship between approvals and the growth of employment in the sub-divisions. There is however little correlation between employment resulting from the granting of an idc and total employment growth: idcs relate only to manufacturing, and even within this sector they deal only with new plant. The figures are also misleading in that they do not balance employment growth in expanding firms with employment in declining firms, nor do they account for increases in employment not associated with new building. For these reasons the relationships obtained were not meaningful.

INDUSTRIAL STRUCTURE OF EMPLOYMENT

140. How do the sub-divisions differ in terms of their industrial composition? Are there significant differences in the degree of specialisation, and is there any evidence of the extent and direction of such specialisation causing under utilisation of resources? We seek to answer such questions by reference to details of the industrial structure of employment in 1966 supplied by the Department of Employment and Productivity.

141. At the outset it should be noted that this information is subject to certain deficiencies as a measure of the allocation of resources between industries. Because the totals for the sub-divisions are the aggregation of DEP Employment Records, the figures do not include civil servants without national insurance cards nor 'unlocated' employees. However, for sub-division (1) (GLC) these comments do not apply because adjusted figures have been estimated by the DEP. Nevertheless, the safest conclusion is that no significance should be read into small differences in the figures, and all figures have been correspondingly rounded. Also, for disclosure reasons, the actual numbers of persons employed in each industry in each sub-division have not been presented, but rather the percentage

distribution of employment by industry in each sub-division. Next, it should be noted that the industrial classification used is that of SIC Order. Analysis at a finer level such as MLH would be preferable in that SIC Orders are far from homogeneous, but the statistics for such an analysis were not available.

142. Finally, it should be emphasised that the data relate to numbers employed and not to output. To suggest that the industrial mix of output in each sub-division is reflected by the industrial mix of employment, one needs to make doubtful assumptions about spatial variations in the labour intensity of production. If capital/labour ratios in each industry vary in different locations (because of differential cost and availability of capital and labour, etc.) it is not possible to use the industrial mix of employment as a measure of the industrial mix of output*. Given these deficiencies, in what ways can the information be utilised to describe the industrial allocation of the region's manpower resources?

143. Looking at the industrial mix of employment *from the viewpoint of the sub-divisions,* the questions we would seek to answer are:-

1. What percentage of the total employment in each sub-division is in each industry?

2. Which sub-divisions have a more than average proportion of which industries?

3. Which sub-divisions are the most highly specialised and which the most diversified?

4. Which sub-divisions have the most favourable structure of employment (in the light of expected trends of national employment in each industry, stability of employment, productivity, etc.)?

144. Looking at the situation *from the viewpoint of industries* rather than the sub-divisions, we also seek to answer:-

5. What percentage of the total employment in each industry is in which sub-division?

6. Which industries are the most spatially localised and which the most dispersed?

7. Which sub-divisions have the highest rates of female to male employment? Are the variations between sub-divisions in the ratio of female to male employment a satisfactory reflection of the relative availability of male and female labour?

We answer each of these questions in turn:-

1. *What percentage of the total employment in each sub-division is in each industry?*

   The data with which to answer this is shown in the body of Table 4.3.

2. *Which sub-divisions have a more than average proportion of which industries?*

   Table 4.4 presents the same information as in Table 4.3 in the form of *location quotients***. This simplifies interpretation since a LQ in excess of unity indicates a more than average specialisation in that industry while a LQ below unity indicates a less than average specialisation. The following section is accordingly devoted to an identification of the industries in which each sub-division has a significantly more than average specialisation.

Sub-division (1) (GLC)

145. This is an 'awkward' case, since it provides more than half of the total employment in the SE Region. The regional totals are thereby heavily weighted by the industrial structure of employment in the GLC area, so that one would not expect to find LQs in this sub-division which are greatly different from unity. An above average specialisation is found in Services as a whole, and in Insurance, Banking and Finance, and Transport and Communications in particular. Within the manufacturing sector, there is specialisation in Leather, Leather Goods and Fur, Clothing and Footwear, and Food, Drink and Tobacco. Conspicuously low LQs are found, of course, in Extractive Industries and also in Shipbuilding, Bricks, Pottery and Glass, and (oddly enough) in Vehicles.

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* Statistics on the value of output in each industry in Census of Production Districts of SE England, have been made available for 1958 by the Board of Trade Census Office (and may eventually become available for 1963). But there are a number of problems in the analysis of this data, particularly with regard to the lack of comparability of Census Districts with the sub-divisions, and to the extent of aggregation across industries (for reasons of disclosure). Also the figures relate only to manufacturing industry.

** The LQ of industry X in sub-division Y = percentage of employees in sub-division Y in industry X ÷ percentage of employees in the SE Region as a whole in industry X.

146. The specialisation here is in manufacturing rather than service industries. The latter group feature LQs of unity and below except in the following cases: Gas, Electricity and Water (in sub-division OMA (SE)); Misc. Services (sub-divisions OMA (South) and OMA (SW)); and Professional and Scientific Services (in all areas except sub-division OMA (North)). Transport and Communications, Insurance, Banking and Finance, Distributive Trades, and Public Administration are all thinly represented, presumably because the OMA relies on Greater London for much of these services.

147. Within the manufacturing sector, differences between the sub-divisions in the industries in which they specialise are more pronounced. The following chart summarises the situation.

Sub-division	LQ > 2 (specialisation more than twice the Regional average)	2 > LQ > 1.5 (specialisation of over 50% more than the Regional average)
2	Metal Manufacture. Timber and Furniture	Chemicals. Textiles. Metal Goods n.e.s. Other Manufacturing Food, Drink and Tobacco
3	Vehicles	Chemicals. Paper, Printing and Publishing. Metal Manufacture Textiles. Other Manufacturing Bricks, Pottery and Glass
4	Bricks, Pottery and Glass	Engineering and Electrical
5	Shipbuilding. Bricks, Pottery and Glass. Paper, Printing and Publishing	-
6	-	Metal Goods n.e.s. Bricks Pottery and Glass
7	Vehicles. Other Manufacturing	-

148. Extractive industries show more than average representation in the OMA (mainly because of the high weighting of the GLC which has low proportions of employees in this category). The highest specialisation is in sub-divisions (5) and (6) but even here only some 4% of employees fall within this category.

Outer South East

149. Service industries take up the same proportion of employees as in the Region as a whole, but, within this category, Gas, Electricity and Water and Professional and Scientific Services are more heavily represented than elsewhere; while Transport and Communications and Insurance, Banking and Finance are less well represented (although LQs are higher than in the OMA). Sub-division (12) (Sussex Coast) differs from the others in that it shows a representation above average for the OSE of Service

Industry especially in Distributive Trades, Misc. Services (Catering and hotels?), and Insurance, Banking and Finance. The other points of note relate to sub-division (8) (Berks-Oxon) which has a very high proportion of employees in Professional and Scientific Services (over 20% of the total employees). Also it is the only OSE sub-division with LQ below unity for employment in Gas, Electricity and Water.

150. Manufacturing industry is less well represented in the OSE than in the OMA (except in sub-division (9) (Berks-Bucks)) and particularly poorly represented in sub-divisions (11) and (12) (Kent and Sussex Coast). But in all sub-divisions except for these latter two, there are notable concentrations of particular industries. Vehicle production (employing 17.6% of the working population in sub-division (8) (Berks-Oxon)) is the most obvious example, and the proportion of employees engaged in shipbuilding in sub-division (13) (Solent) is over seven times the regional average. The following chart may be a useful summary:

Sub-division	LQ > 2 (specialisation more than twice the Regional average)	2 > LQ > 1.5 (specialisation of over 50% more than the Regional average)
8	Vehicles	Metal Manufacture. Textiles
9	Metal Manufacture. Shipbuilding. Leather, Leather Goods and Fur. Bricks, Pottery and Glass	Vehicles
10	Metal Manufacture. Metal Goods n.e.s. Textiles	-
11	-	Bricks, Pottery & Glass. Other Manufacturing
12	-	-
13	Shipbuilding	Vehicles

151. Finally, the above average specialisation of the OSE in Extractive Industries must be noted. This applies to all sub-divisions except (13) (Solent) which has a lower proportion of employees engaged in these primary industries than some OMA areas. Specialisation is most marked in sub-divisions (10) (Essex) and (11) (Kent), the latter being the only area with any significant volume of employment in Mining and Quarrying.

3. Which sub-divisions are the most highly specialised and which the most diversified?

152. We can identify which sub-divisions are the most highly specialised and which have the most diversified industrial base by calculating the values of specialisation coefficients* for the 13 sub-divisions as shown in Table 4.5. Similar coefficients for other Standard Regions of Britain in 1966 show values of between 9 in Scotland and 21 for the West Midlands. So all three major areas of the South East (GLC, OMA and OSE) occupy intermediate positions. The region as a whole derives its specialisation coefficient almost wholly from its above average representation of services: the percentage of employment in each of the seven service categories is above the national average. This is not true of all the major areas and the OMA has rather less employment in services than the national average, and above average proportions in manufacturing, particularly in Engineering, Vehicles and Paper, Printing and Publishing. Of course, at the level of the 13 sub-divisions specialisation coefficients are higher and the range of values greater. The Greater London Area and OSE (Solent) appear to be most diversified. This is partly to be expected, especially in the former case, because of their size in terms of population numbers relative to the other sub-divisions. The larger the area, the lower would you expect to be the specialisation coefficient. Two reasons can be identified:-

(a) The weighting of the national total. If the region constitutes a large part of the nation, its specialisation coefficient is bound to be low because the regional distribution will heavily weight the national distribution. Comparison with the industrial distribution of employment in Great Britain rather than just the SE Regional total reduces but does not remove this bias. Greater London still provides about 20% of the total employment in Britain.

(b) The great spatial possibilities of development in larger regions. *Reductio ad absurdium*, industry in a whole region is bound to be more highly diversified than industry in an area which is only large enough to contain one factory.

153. The more interesting results, therefore, are the high coefficients as found in sub-divisions OMA (North), (South), and OSE (Berks-Oxon), (Beds-Bucks), and (Sussex Coast). In part these may result from the size of the areas, since two at least are comparatively small in terms of numbers of employees, but since equally small areas such as OSE (Essex), feature lower coefficients, it seems that we may legitimately regard these five sub-divisions as being unusually specialised.

154. One might suggest that such areas would benefit from some diversification of their industrial structure and that regional planning controls should be specifically directed toward such ends. However, it should be emphasised that diversification is not a worthy objective *per se* since it conflicts with the advantages which stem from specialisation based on comparative advantage. It should only become a planning objective, therefore, when those advantages can be shown to have been outweighed by other particular disadvantages such as liability to recession. But there is no evidence that the sub-divisions with the greater industrial specialisation are prone to above average levels of unemployment. A simple rank correlation between the sub-divisions ordered according to specialisation coefficients and according to average unemployment levels (see Table 7.3) actually works out negative, and four of the five most highly specialised sub-divisions had mean unemployment levels *below* the Regional average. Nor is there any positive correlation between specialisation coefficients and the absolute *variability* of unemployment levels in the sub-divisions. This lack of association may be because:

(1) the specialisation is in SIC Orders which, over the period studied have not been liable to recession. This appears partly true but there are local concentrations of industries which nationally, have suffered fluctuations e.g. Vehicles (sub-divisions 3, 7 and 8), Shipbuilding (sub-divisions 5 and 13), Metal Manufacture (sub-divisions 2, 8, 9 and 10), and Textiles (sub-divisions 8 and 10);

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* A measure of the imbalance between the industrial distribution of employment in each sub-division and the distribution in the whole nation (see W. Isard, Methods of Regional Analysis, Ch. 7). A coefficient approaching 100 indicates an area whose industrial mix is most dissimilar to the nation's while a coefficient approaching zero denotes an area with a very similar composition. *Note* however, that the extent of diversification of an area will seem to depend upon the fineness of classification of industries. Areas may be strongly specialised *within* any particular SIC group, in which case our calculations will understate the extent of specialisation. Where this specialisation within SIC groups is less marked the understatement of the extent of specialisation is less pronounced. Small differences between sub-divisions in the coefficient of specialisation should therefore be ignored.

(2) the specialisation is in MLH's within those SIC Orders which have been less liable to recession. This hypothesis is not verifiable with the data available;

(3) the firms in the South East may be less liable to recession than firms in the same line of business operating in other regions. This may result either from locational advantage or to other (managerial?) factors with no causal association with location.

4. *Which sub-divisions have the most favourable structure of employment?*

155. The economic viability of an area depends on the direction of industrial specialisation as well as the extent of specialisation. This dualism in the concept of industrial balance is emphasised by J. H. Dunning (Economic Planning and Town Expansion), who defines a well balanced pattern of industry as one which incorporates:

'a range of manufactures, which offers favourable growth prospect, a minimum risk of employment instability, a diversity of occupational opportunities and a proper balance of work for men, women and juveniles.'

156. The comparative favourability of the sub-divisions can be assessed in terms of such criteria by standardisation techniques. Consider the following four possible criteria:

(a) extent of specialisation in industries which are growing, or will be expected to grow rapidly at the national level;

(b) extent of specialisation in industries which are least liable to fluctuations in demand at the national level;

(c) extent of specialisation in industries which have an above average productivity at the national level;

(d) extent of specialisation in industries which have above average profitability at the national level.

157. The favourability of the SE sub-divisions may be studied in terms of each of these criteria, and, indeed, in terms of any other for which we know the value by industrial group at the national level. The method used is known as standardisation. One point which should be noted is that, since our information on individual mix in the SE sub-divisions is in terms of employment statistics, standardisation is more appropriate to criteria (a), (b) and (c) above than criterion (d). It is conceptually unsound to standardise in terms of employment for a variable with a base other than employment, such as (d) which has assets as its base. Therefore, we concentrate on the first three criteria.

(a) Favourability in terms of expected employment growth rates

158. The purpose here is to identify those sub-divisions which have a specialisation in industries expected to grow rapidly at the national level and those which specialise in the nationally static and declining industries. An attempt has been made to reconcile the three published forecasts of the future growth of employment in the main industry groups in the UK, the result of which is a broad classification of industries into three groups; growth industries, stable industries and declining industries, as follows:-

(a) *Growth Industries*	*Estimates of future growth of employment p.a.(%)*
Professional and Scientific Services	+ 3.0
Insurance, Banking and Finance	+ 2.2
Other Manufacturing	+ 1.6
Engineering and Electrical Goods	+ 1.4
Gas, Electricity and Water	+ 1.1
Distributive Trades	+ 1.0
Public Administration	+ 0.9
Misc. Services	+ 0.8
Paper, Printing and Publishing	+ 0.8
Metal Goods n.e.s.	+ 0.8

(b) *Stable Industries*

Vehicles	+ 0.7
Construction	+ 0.5
Timber and Furniture	+ 0.5
Metal Manufacture	+ 0.5
Chemicals	+ 0.1
Clothing and Footwear) Leather, Leather Goods and Fur)	+ 0.1
Food, Drink and Tobacco	- 0.2
Bricks, Pottery and Glass	- 0.2

(c) *Declining Industries*

Transport and Communications	- 0.7
Shipbuilding	- 0.9
Textiles	- 1.4
Agriculture, Forestry and Fishing	- 2.8
Mining and Quarrying	- 4.4

These estimates of annual growth are derived from a combination of the figures used in the National Plan and estimates made by the Department of Applied Economics, Cambridge and by the National Institute of Economic and Social Research. The Cambridge figures are published in 'Exploring 1970: Some Numerical Results' (July 1965) and the National Institute figures appear in 'The British Economy in 1975'. The classification used as the basis for the calculations is SAM (Social Accounting Matrix). The method of calculation was to subtract the average of the National Plan and National Institute estimates of future productivity change from the average of the National Plan, National Institute and Cambridge estimates of future change in output. The SAM categories were then converted into SIC categories. (SIC gives 24 orders, SAM 31 orders). Where the SIC and SAM classifications are the same, they have been used without change. Where the SIC Order includes two or more SAM orders the employment growth estimates for SAM have been weighted by employment to give an average applicable to the SIC order. Where the SAM order comprises two or more SIC Orders, this cannot be done. In these cases the estimates used are from the National Plan.

159. Given this classification of industries, we show (in Table 4.6) the proportion of total employees in each sub-division in 1966 in each category. The highest proportion of growth industries is found in the two sub-divisions to the south of London: (6) OMA (South) and (12) OSE (Sussex Coast), followed by Greater London itself. The lowest proportion is found in OSE areas (8) (Berks-Oxon), (9) (Beds-Bucks) and (11) (Kent). The last named has outstandingly the highest proportion of declining industries, followed by sub-divisions (10) OSE (Essex) and (13) OSE (Solent).

160. In order to summarise the favourability of the industrial structure of each sub-division (in terms of the forecasted national rates of growth of industry) we have presented in the final column of Table 4.6 an *index of employment growth potential**. The OMA and GLC areas both come out above average, and the OSE well below. Within the latter area only sub-division (12) (Sussex Coast) would appear to have an industrial structure well suited to future growth (by comparison with the rest of the Region rather than with the rest of the UK). Sub-division (11) (Kent) appears particularly unfavourable. Of the OMA areas sub-divisions (6), (7) and (2) register high indices, while (3) is rather below average.

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* This is calculated as follows. A weighted sum of the three industrial groups is calculated, the weights selected being: growth industries plus 1, stable industries zero, and declining industries minus 1. Dividing the result for each sub-division by the corresponding result for the whole SE Region we obtain a standardised index for each sub-division.

161. However, these results should be treated with caution. While the industrial structure of an area may be some indication of its growth potential, empirically it is found to be not a good guide. The exercise in the earlier part of this chapter, in which the growth of employment 1951-61 in each of the SE sub-divisions was analysed into proportionality (industrial mix) and differential (other local) effects, is a case in point. Differential shifts were, in general, quantitatively more important than the proportionality shifts. Moreover, the rank correlation between actual rates of growth in the sub-divisions and 'expected' rates of growth (given the initial industrial mix in each sub-division and the national average growth rates of each industry over the period) was only + 0.512. Therefore, analysis of industrial composition cannot be regarded as a completely satisfactory method of *ordering* the areas according to their growth potential, let alone of predicting the *magnitude* of growth in each area. Superior results might be achieved by refining the industrial classification used. Within an SIC Order (e.g. Vehicles) there may be both growth industries (motor cars) and declining industries (railway locos, and stock). Motor car production may be concentrated in one sub-division and railway stock manufacture in another. Both areas would be seen to have similar growth potential if the analysis were conducted at a SIC Order level, but this conclusion is presumably unlikely to prove valid. Analysis at the level of MLH would therefore be preferable, but that data is not available.

(b) Favourability in terms of specialisation in stable or unstable industries

162. The purpose here is to identify those sub-divisions which have a specialisation in industries liable to fluctuations in prosperity at the national level and those which specialise in more nationally stable industries. Instead of looking at expected trends in employment growth, as in the previous section, we are now examining the magnitude of fluctuations around those trends. Instability may arise either from cyclical, irregular or seasonal variations in demand. It is conceptually and empirically difficult to identify the separate effects of the former two, but the effects of seasonal variations may be more easily isolated. Moreover it is useful to do so, because the policy appropriate to the reduction of unemployment in any given area will depend upon the nature of that unemployment. The causes, and hence the remedies, for seasonal unemployment are frequently different from the causes of cyclical and irregular unemployment.

163. We first consider instability of the latter type. The first step is to give each industry an index representing its liability to cyclical-structural fluctuations at the national level. Now, June 1961 and June 1966 were representative of periods of generally high prosperity in the UK, while June 1963 and June 1967 were months of recession (figures on numbers employed by industry are published by the Department of Employment and Productivity only for June of each year). The change between these years of prosperity and recession in the volume of unemployment in each industry was taken as indicative of its stability. Firstly, the average percentage of employees registered as unemployed in each industry was calculated for the two boom years, and then for the two recession years. The average level of unemployment in all industry in Britain was 1.2% in the boom years and 2.2% in the recession years (excluding those unemployed persons not classified by industry in the DEP statistics). Industries in which the increase in the percentage unemployed was less than 0.7 were given an index of 1, those in which the increase was between 0.7 and 0.9 an index of 2, those in which the increase was between 0.9 and 1.1 an index of 3, those in which the increase was between 1.1 and 1.3 an index of 4, and those in which the increase was over 1.3 an index of 5. Low indices denote stable industries; high indices denote unstable industries. The index of cyclical instability for each of the SE sub-divisions was derived as follows. The proportion of employees in each sub-division in each industry was multiplied by the appropriate index for that industry. This was repeated for all industries in that sub-division, and the total thereby obtained was divided by the total obtained by applying this procedure for the SE Region as a whole. In this way we obtain an index of stability in each sub-division, as shown in Table 4.7.

164. The sub-divisions which appear to specialise most in the typically unstable industries are sub-divisions OSE (Essex), OSE (Beds-Berks), OMA (SW) and OMA (North). However, there is no clear division here between sub-divisions with high indices and those with low indices. Therefore, it is difficult to isolate particular sub-divisions likely to suffer from employment instability. The South East Region is generally, quite free from concentration in the most unstable industries, such as Metal Manufacture, Shipbuilding and Textiles. Indeed, the values of the instability index in the sub-divisions depend largely on the relative magnitude of employment in manufacturing and service trades. Stability is more typical of the latter group (except Construction), so that the sub-divisions demonstrating the lowest indices of instability tend to be those with the highest proportions of their employment in services, such as (GLC) and OMA (South). The policy implications of this are uncertain. One might recommend the

development of more stable industries (services?) in those areas specialising most in the less stable industries. However, such a policy would seem rather superfluous in that there is no definite correlation between this 'expected' instability of employment in the sub-divisions and the *actual* instability. The rank correlation of sub-divisions ordered according to the index of 'expected' cyclical-structural instability and according to the coefficient of variation in the percentage of unemployment 1951-1966 (see Table 7.3) is + 0.236. This is of the expected sign but not of sufficient magnitude to suggest any definite relationship between the instability of employment in the sub-divisions and their individual composition.

165. Next, we study the extent of specialisation in industries typically liable to seasonal fluctuations in demand. Each industry has been given an index to represent its liability to seasonal fluctuations at the national level. The method is similar to that used in calculating the index of cyclical-structural instability. Calculations were made for each industry of:

(a) unemployment in January 1965, as a percentage of unemployment in June 1965;

(b) unemployment in January 1966 as a percentage of unemployment in June 1966;

(c) unemployment in January 1967 as a percentage of unemployment in June 1967;

(d) the average of the results obtained in (a), (b) and (c) above.

For all industries, the value of (d) was 130, indicating that unemployment was on average some 30% higher in January than in June. Industries in which the value of (d) was less than 115 were given an index of 1, 115-125 an index of 2, 125-135 an index of 3, 135-145 an index of 4, and over 145 an index of 5. Low indices denote industries least liable to seasonal fluctuations; high indices denote seasonally unstable industries. The index of seasonal instability for each of the SE sub-divisions was derived from these industrial indices by exactly the same standardisation technique as used in the derivation of sub-divisional values for liability to cyclical-structural instability.

166. The four coastal OSE areas demonstrate a fairly high index of 'expected' seasonal instability, as their above average dependence upon the holiday trades would lead us to expect. Also there are above average proportions of construction workers in these areas, and this is another industry usually liable to marked seasonal fluctuations. However, the highest index of instability is found in OSE (Berks-Oxon), this being largely due to the importance of employment in vehicle manufacture, which also features above average instability. Low indices of 'expected' seasonal instability are found in GLC, all OMA areas with the exception of OMA (SW), and OSE (Beds-Bucks). The full results are shown in the second column of Table 4.7.

167. As in the case of 'expected' levels of liability to cyclical-structural unemployment, it is useful to compare 'expected' differences between the sub-divisions in seasonal unemployment with *actual* differences. Only if the relationship is very close could one suggest that sub-divisional differences in seasonal unemployment are a result of differences in industrial structure. In fact, examination of the ordering of sub-divisions according to actual seasonal unemployment (see Chapter 7) and to 'expected' liability to seasonal unemployment, reveals a fairly high association (rank correlation + 0.657). Sub-divisions (8), (10), (11), (12) and (13) can certainly be regarded as having an industrial composition which tends to cause some under utilisation of labour resources.

(c) Favourability in terms of specialisation in high or low productivity industries

168. The purpose here is to determine which sub-divisions specialise in industries with typically high productivity and which specialise in industries with typically low productivity. For this purpose productivity is measured as value of net output per head. This partial productivity measure is usually considered less useful than measures which recognise other inputs as well as labour. However, since our information of the industrial structure of the SE sub-divisions relates to employment only, it is more proper to apply standardisation techniques to data on productivity which uses only labour input as a denominator.

169. Information on productivity in the manufacturing sector at the national level is available from the provisional results of the 1963 Census of Production. As for the service and extractive sectors, there is no Census information but estimates of productivity in 1964 have been made by G. D. N. Worswick and

G. C. Fane (District Bank Review, March 1967). 'Splicing' these two sets of data together, we derive estimates for productivity in all industries at the national level, in terms of which we can apply standardisation techniques for the sub-divisions. However, the results so obtained show very little sub-divisional variation. The GLC area seems to have an above average favourability of industrial mix in terms of this criterion, but all the other differences are very slight. Note, however, that it is not possible to deduce from this that intra-regional productivity differentials are insignificant. These 'expected' differences between the sub-divisions in net output per head are probably not good indicators of actual differences in productivity. Variations between sub-divisions in the capital intensity of production are likely to be of greater magnitude than these variations in 'expected' output-labour ratios. Therefore the ranking of sub-divisions according to labour productivity is probably a poor guide to variations in overall productivity.

5. *What percentage of the total employment in each industry is in each sub-division?*

The data with which to answer this is shown in the body of Table 4.8.

6. *Which industries are the most spatially localised and which the most evenly dispersed?*

170. The usual solution to such questions is derived by calculating coefficients of localisation for each industry. These are measures of the imbalance between the spatial distribution of employment in any one industry and the distribution of total employment (see W. Isard, Methods of Regional Analysis, Ch. 7). A high coefficient (approaching 100) is indicative of an industry which is spatially localised, while a low coefficient (approaching zero) indicates a more even distribution of the particular industry between the sub-divisions. Calculation of such measures reveals a range of values between 56 (Shipbuilding) and 6 (Distribution, Miscellaneous Services). However, these results are not presented here, in particular because of a persistent bias which results from the unequal size of the sub-divisions in terms of numbers employed. The calculation of the coefficient of localisation has an implicit weighting procedure, whereby the most important influence on the final coefficient is the degree of representation of the industry in Greater London. This largely accounts for the high localisation coefficients found in extractive industries: although fairly evenly distributed within the remainder of the region, their relative absence from the GLC area assures them of high coefficients.

171. Moreover, it is improper to assert that those industries revealing low coefficients of localisation are potentially mobile, and hence amenable to re-location. Similar arguments have been used by R. J. Nicholson (Economic Journal 1956) and others in identifying industries suitable for expansion in areas needing diversification of industry. But spatially dispersed industries may be those serving a purely local market whose product, either because of a high transport/unit cost or by their very nature (e.g. Service Industries), are not transportable. These industries will be the ones where location is determined. Potentially mobile industries will be those serving a larger market area, which may be geographically concentrated for historical and economic reasons. This approach is thus of little value in identifying industries suitable for re-location in any policy of industrial diversification in the SE sub-divisions.

7. *What inter sub-divisional variations exist in the proportion of female to male employees? Are such variations a satisfactory reflection of the relative availability of male and female labour?*

172. The actual proportions of female to total employees (F/T) in each sub-division are shown in the first column of *Table 4.9*. It can be seen that significant variations between sub-divisions do exist, the F/T ratio being below 35% in sub-divisions 8 and 9 and being as high as 42% in sub-division 12.

173. The association of this ratio with the relative *availability* of male and female labour is most important. A close relationship would indicate sensitivity of industry to local labour supply conditions, while lack of such a close relationship may result in unemployment of either males or females. Possibly even more important, female activity rates may be low if the sex structure of employment opportunities is unfavourable in relationship to the sex structure of the potential working population.

174. A primary test of this relationship is to relate the F/T employment ratio in each sub-division to the *F/T ratio of persons of working age in each sub-division*. A close relationship would suggest that imbalance in the sexual structure of employment within the Region was not a prime cause of sub-divisional differentials in the level of unemployment and activity rates. In fact, the rank correlation between sub-divisions is very high at + 0.830. The sub-divisions with the highest F/T employment ratios (12, 6, 11, 1 etc.) are generally those with the highest F/T proportion of persons of working age. Similarly those with low F/T employment ratios (8, 9, 10, 3 etc.) were those with low proportions of females to males in the working age groups. (The one odd sub-division was (2) OMA (West), which had a rather higher proportion of female to male employment than the sex structure of the working-age population would suggest). In general, this primary test suggests that differences between sub-divisions in the sex structure of employment reflect quite closely differences in the sex structure of the population of working age. However, the important question is whether any misalignment, albeit relatively small, causes increased unemployment or reduced activity rates. A test which takes explicitly into account the relative pressure of demand for female and male labour, involves the comparison of the F/T employment ratio and the sexual imbalance of the vacancies/unemployment ratio (see Chapter 7.) The rank correlation between sub-divisions comes out at + 0.599 which suggests that the proportion of females in the work force was generally highest where the pressure of demand was for female rather than male labour. So, activity rates do seem to be affected. Moreover, unemployment may result from a bias in the sex structure of employment. In sub-division (12), for example, the level of male unemployment may reflect to some extent this bias towards a demand for female employees.

175. Finally, we examine whether the differences between sub-divisions in the F/T employment ratio result from *differences in their industrial mix* or from *differences in the relative use of males and females* in a given set of industries. Do sub-divisions demonstrate their sensitivity to the relative availability of males and females by:

(1) adjusting their industrial composition so as to specialise in industries with generally either high or low F/T ratios, or

(2) adjusting the proportion of females to males employed in given industries?

176. For this purpose the difference between the Regional average F/T ratio and the F/T ratio in each sub-division has been analysed into (I) *proportionality* effects and (II) *differential* effects.

177. The procedure is as follows:

(I) Calculate the overall F/T ratio in each sub-division which would be 'expected' given:

(a) the industrial composition of the sub-division (as shown in Table 4.4).

(b) the F/T ratio in each industry at the regional level (as shown below);

Ratio of female employees to all employees in the main industry groups in SE England 1966

I	Agriculture, Forestry and Fishing	0.24
II	Mining and Quarrying	0.13
	Total Extractive Industries	0.23
III	Food, Drink and Tobacco	0.40
VI	Chemicals and Allied Industries	0.37
V	Metal Manufacture	0.20
VI	Engineering and Electrical Goods	0.30
VII	Shipbuilding and Marine Engineering	0.06
VIII	Vehicles	0.12
IX	Metal Goods n.e.s.	0.31
X	Textiles	0.49
XI	Leather, Leather Goods and Fur	0.45
XII	Clothing and Footwear	0.70
XIII	Bricks, Pottery, Glass, Cement etc.	0.18
XIV	Timber, Furniture etc.	0.20
XV	Paper, Printing and Publishing	0.32
XVI	Other Manufacturing Industries	0.46
	Total Manufacturing Industries	0.32

XVII	*Construction*	0.07
XVIII	Gas, Electricity and Water	0.13
XIX	Transport and Communication	0.17
XX	Distributive Trades	0.52
XXI	Insurance, Banking and Finance	0.45
XXII	Professional and Scientific Services	0.63
XXIII	Misc. Services	0.54
XXIV	Public Administration	0.32
	Total Service Industries	0.46
	Total All Industries and Services	0.38

Source: Department of Employment and Productivity.

(II) Subtract from the 'expected' F/T ratio in each sub-division the actual F/T ratio in the Region as a whole. This is the *proportionality effect*. If positive, the sub-division tends to specialise in industries which usually employ above average proportions of females; if negative, the specialisation is in industries which are male dominated in the Region as a whole.

(III) Subtract the 'expected' F/T ratio in each sub-division from the actual value of the F/T ratio in that sub-division. This is the *differential effect*. If positive, the sub-division has a higher proportion of female to male employment than its industrial composition would suggest: if negative, that proportion is :lower than the industrial composition would lead one to expect.

178. The sum of the proportionality and differential effects equals the difference between the overall F/T ratio in the sub-division and the overall F/T ratio in the Region as a whole.

179. The results are shown in Table 4.9 from which it can be seen that the proportionality effects are generally larger, suggesting that sub-divisions adjust to the relative avaiiability of male and female labour by modifying their industrial structure. But this tendency should not be exaggerated. In 7 of the 13 sub-divisions the proportionality and differential effects have opposite signs, indicating that the adjustment to labour market conditions is certainly not consistent. Greater London, for example, has an above average proportion of female employees, but not as much above average as its industrial composition (especially its concentration on service industries) would suggest.

180. Perhaps the most important outcome of this particular exercise relates to sub-division OSE (Sussex Coast), which has outstandingly the highest F/T employment ratio. This is accommodated partly by the industrial mix effect (i.e. it specialises in industries usually employing high proportions of females), and partly by the relative magnitude of female employment being greater than the industrial mix would suggest. Female activity rates in this sub-division are the highest in the OSE and the pressure of demand for more female labour is very much stronger than for male labour. And the level of male unemployment is the highest in the South East. Thus, emphasis on the development of male-intensive industry would seem to be desirable in order to reduce resource under utilisation in this sub-division.

FUTURE TRENDS

181. In the last chapter, projections of the population of each sub-division were presented, together with some estimates of the composition of population in terms of broad age groups. From this information can be derived estimates of the supply of labour. Of course, this involves the hazardous business of making projections of activity rates (the proportions of the working age population actually seeking work). This is likely to be particularly difficult at the sub-divisional level, but by considering alternative possibilities it may be possible to derive ranges of the estimated supply of labour. Thus, in the report on 'A Strategy for the South East' such projections suggest that, for the Region as a whole, the supply of labour in 1981 will probably be fairly similar to the current level. The suggested upper limit of plausible values is a growth of 180,000 economically active persons, and the lower limit a decline of 120,000 persons from the 1966 level.

182. Given such estimates of the supply of labour it may be useful to derive estimates of the demand for labour, in order that, by comparison, one can identify areas where there is likely to be a surplus of demand over supply, or a surplus of supply over demand. For the Region as a whole, the estimate published in 'A Strategy for the South East' is that this shortage will be of the order of at least 1 million persons by 1981. This estimate is based partly upon an extrapolation of employment trends, and, as such, it has certain deficiencies. If we accept that employment growth in the 'sixties has been constrained by labour shortages, it follows that the growth in the demand for labour is rather underestimated by this procedure. Nevertheless, the important point is that the excess demand for labour in the Region is expected to intensify. This may be regarded as a rather happier situation than that of regions such as the Northern, in which extrapolation of past trends would suggest a growing balance of labour supply over labour demand. However, it does mean that there must be some spatial coherence in the allocation of the demand and supply of labour. Maximisation of output and minimisation of unemployment rest upon the labour supply and demand being in some sort of spatial proximity. Perhaps even more important is the fact that lack of such proximity leads to increasing workplace movements which cause additional strains on the transportation facilities of the Region.

183. Hence it is important to develop some projections of the demand for labour in each sub-division. However, as already noted, simple extrapolation of past trends in numbers employed is unsatisfactory, because employment and labour demand are not synonymous in an area where there has been a general shortage of manpower. Thus, it is considered more useful here to make thorough analyses of levels of unemployment and unfilled vacancies (see Chapter 7.) in order to identify whether the demand and supply have been spatially maladjusted in the past, whether such maladjustment is tending to increase or decrease and whether it has led to any significant under utilisation of resources. The analysis of residential-employment balance and, in particular, of workplace movements (see Chapters 5. and 6.) also gives some indication of the possibilities of there being consistent spatial maladjustment without there being unemployment. Thus, a more sophisticated approach to the identification of trends in employment is suggested. The formulation of concrete projections of the demand for labour is not conceptually sound, particularly because of the interdependence with the supply of labour. Activity rates and even the distribution of population growth itself depend to a certain extent upon the spatial patterns of demand for labour. Moreover, in a region with an overall labour shortage, the distribution of labour supply has a strong influence on the intra-regional location of industrial expansion. Thus, in section B of this report the comments on likely trends in the balance of labour supply and demand are extremely tentative. Nevertheless it is suggested that OSE (Berks-Oxon) and OSE (Kent) may require more flexible attitudes towards the encouragement of further growth of industrial demand in the period up to 1981. A very rapid increase in labour supply is anticipated in both sub-divisions, but employment may not necessarily rise at exactly the same rate. OSE (Berks-Oxon) is conspicuous among the OSE sub-divisions for its absence of proposed 'counter magnets', while OSE (Kent) has had consistently the lowest pressure of demand for labour of all the OSE sub-divisions in the post-war period.

Table 4.1 Growth of employment in the SE sub-divisions 1951-1966

SE England sub-division	1951-61		1961-66		1951-1966	
	Percentage change	Growth rate	Percentage change	Growth rate	Percentage change	Growth rate
1. Greater London : TOTAL	8.2	0.8	0.2	Negligible	8.3	0.5
2. OMA (West)	25.1	2.3	19.7	3.6	49.8	2.7
3. OMA (North)	61.3	4.9	4.9	1.0	69.2	3.6
4. OMA (East)	42.7	3.6	18.5	3.5	69.1	3.6
5. OMA (SE)	13.9	1.3	10.3	2.0	25.7	1.5
6. OMA (South)	38.3	3.3	21.5	4.0	68.0	3.5
7. OMA (SW)	10.0	1.0	21.0	4.0	33.1	1.9
OMA : TOTAL	33.1	2.9	14.2	2.7	52.0	2.8
8. OSE (Berks-Oxon)	23.0	2.1	13.7	2.6	39.9	2.2
9. OSE (Beds-Bucks)	14.5	1.4	19.7	3.6	37.0	2.1
10. OSE (Essex)	19.4	1.8	15.2	2.9	37.6	2.1
11. OSE (Kent)	8.1	0.8	13.5	2.6	22.7	1.3
12. OSE (Sussex Coast)	10.0	1.0	7.7	1.5	18.5	1.1
13. OSE (Solent)	16.1	1.5	13.3	2.5	31.5	1.8
OSE : TOTAL	14.7	1.4	12.8	2.5	29.4	1.7
SE ENGLAND : TOTAL	13.8	1.3	5.3	1.0	19.9	1.2

Note: these estimates are subject to the limitations as described in the text.

Source: Department of Employment and Productivity.

65

Table 4.2 Analysis of employment growth in the SE sub-divisions 1951-1961

SE England sub-division	Actual % increase employment 1951-1961	Regional share	Total shift	Proportionality shift	Differential shift
1. Greater London : TOTAL	+ 4.4	+ 5.8	- 1.4	+ 3.8	- 5.2
2. OMA (West)	+ 26.8	+ 5.8	+ 21.0	+ 1.0	+ 20.0
3. OMA (North)	+ 36.2	+ 5.8	+ 30.4	+ 4.4	+ 26.0
4. OMA (East)	+ 40.3	+ 5.8	+ 34.5	+ 1.3	+ 33.2
5. OMA (SE)	+ 9.1	+ 5.8	+ 3.3	+ 1.6	+ 1.7
6. OMA (South)	+ 24.4	+ 5.8	+ 18.6	+ 1.1	+ 17.5
7. OMA (SW)	+ 10.7	+ 5.8	+ 4.9	+ 0.2	+ 4.7
OMA : TOTAL	+ 24.8	+ 5.8	+ 19.0	+ 1.8	+ 17.2
8. OSE (Berks-Oxon)	+ 11.6	+ 5.8	+ 5.8	+ 0.5	+ 5.3
9. OSE (Beds-Bucks)	+ 4.5	+ 5.8	- 1.3	- 2.1	+ 0.8
10. OSE (Essex)	+ 6.2	+ 5.8	+ 0.4	- 4.1	+ 4.5
11. OSE (Kent)	+ 0.9	+ 5.8	- 4.9	- 3.0	- 1.9
12. OSE (Sussex Coast)	+ 8.7	+ 5.8	+ 2.9	+ 0.2	+ 2.7
13. OSE (Solent)	+ 10.9	+ 5.8	+ 5.1	- 0.2	+ 5.3
OSE : TOTAL	+ 8.3	+ 5.8	+ 2.5	- 0.9	+ 3.4
SE ENGLAND : TOTAL	+ 9.3	+ 5.8	+ 3.5	+ 2.5	+ 1.0
England and Wales : TOTAL	+ 5.8	+ 5.8	0	0	0

Note: The full meaning of each item is explained in the text of this chapter. Briefly we can describe the regional share as that amount by which employment in each area would have increased if growth had been at the national average rate. The total shift is the actual growth over and above this share. This is split into two parts, the proportionality shift, which shows that part of growth resulting from the particular favourability of industrial mix, and the differential shift which reflects the combined effect on growth of all other factors.

Source: Census of England and Wales 1951 and 1961.

Table 4.3 Percentage distribution by main industry group of employees in each SE sub-division 1966

SE England sub-division	Agriculture Forestry etc.	Mining & Quarrying	Extractive : Total	Food Drink & Tobacco	Chemicals	Metal Manufacture	Engineering & Electrical	Shipbuilding	Vehicles	Metal Goods n.e.s.	Textiles	Leather, Fur etc.	Clothing & Footwear	Bricks, Pottery, Glass	Timber, Furniture	Paper, Printing, Publishing	Other Manufacturing	Manufacturing : Total	Construction	Gas, Electricity, Water	Transport & Communications	Distributive	Insurance, Banking etc.	Prof. & Scientific Services	Misc. Services	Public Administrative	Services : Total	Ind. not specified	Total
1. GLC	0.1	0.1	0.3	3.2	2.1	0.6	9.7	0.2	1.9	1.7	0.4	0.4	2.4	0.7	1.5	4.0	1.5	30.5	6.3	1.8	9.5	15.3	5.9	10.3	12.9	7.2	62.9	0.1	100
2. OMA (West)	2.1	0.2	2.3	4.3	3.4	1.5	14.6	0.1	2.6	3.2	0.7	0.1	0.7	0.8	3.8	3.9	2.6	42.1	6.5	1.5	3.4	11.3	2.5	15.0	10.5	4.0	48.3	0.9	100
3. OMA (North)	2.0	0.2	2.2	1.9	3.5	1.1	16.1	0.1	13.4	1.6	0.8	0.1	2.1	1.7	1.6	6.1	3.1	53.1	6.2	1.4	2.9	9.5	1.8	11.4	7.7	3.3	38.1	0.5	100
4. OMA (East)	2.4	0.1	2.5	3.1	2.2	0.4	18.8	0.4	4.7	1.4	0.2	0.1	2.5	2.4	1.9	3.8	1.7	43.4	8.2	1.9	4.7	11.2	1.9	13.0	8.0	4.8	45.5	0.4	100
5. OMA (SE)	3.8	0.2	4.0	1.7	2.4	0.4	10.8	2.1	1.7	1.6	0.1	0.1	0.3	3.7	1.3	10.5	1.4	38.1	7.6	2.3	4.9	12.0	2.3	12.8	9.0	6.5	49.9	0.3	100
6. OMA (South)	3.3	0.3	3.6	1.2	2.5	1.0	15.8	0.1	0.7	3.2	0.1	0.1	0.5	1.8	1.2	1.7	1.4	31.3	7.8	1.3	4.8	11.0	4.1	17.7	14.6	3.5	57.1	0.3	100
7. OMA (SW)	2.6	0.2	2.7	1.8	1.3	0.2	14.5	0.2	7.5	1.9	0.6	0.1	0.5	1.4	1.6	2.4	3.4	37.3	8.5	1.6	2.7	11.8	2.2	13.4	14.1	5.6	51.3	0.1	100
OMA : TOTAL	2.6	0.2	2.7	2.5	2.7	0.8	15.2	0.4	6.1	2.1	0.5	0.1	1.2	1.9	2.0	5.0	2.4	43.0	7.3	1.7	3.8	11.0	2.3	13.5	10.0	4.5	46.6	0.4	100
8. OSE (Berks-Oxon)	4.4	0.3	4.7	2.4	0.1	1.3	3.3	0.1	17.6	0.2	0.8	0.1	0.6	0.8	1.5	3.7	0.3	32.7	8.0	1.4	3.9	10.3	1.5	20.9	10.5	6.1	54.5	0.1	100
9. OSE (Beds-Bucks)	4.7	0.1	4.8	3.1	0.7	1.7	13.0	2.8	5.9	0.8	0.1	0.9	1.5	8.2	1.0	2.7	0.7	42.9	7.2	2.1	3.1	10.9	1.6	15.0	7.2	4.7	44.6	0.5	100
10. OSE (Essex)	7.4	0.4	7.8	3.1	0.9	1.8	11.5	0.7	0.3	4.3	1.4	0.0	1.5	0.6	2.3	2.7	0.9	31.9	8.5	2.1	4.8	12.7	1.6	13.4	11.7	5.2	51.6	0.2	100
11. OSE (Kent)	7.1	3.1	10.2	2.7	2.3	0.5	4.1	0.4	1.5	0.7	0.5	0.2	1.4	1.7	1.4	3.8	2.5	23.5	8.8	2.3	7.4	12.6	2.2	14.0	13.4	5.3	57.1	0.3	100
12. OSE (Sussex Coast)	4.1	0.2	4.3	2.0	0.6	0.3	8.0	0.3	0.6	1.4	0.3	0.1	1.1	1.0	1.6	1.7	1.4	20.3	8.7	2.5	4.8	16.1	3.8	16.0	17.6	5.7	66.4	0.3	100
13. OSE (Solent)	2.5	0.1	2.6	2.4	2.3	0.2	11.0	4.0	5.1	1.0	0.3	0.1	1.0	0.8	1.2	2.0	1.2	32.6	9.1	2.7	6.3	13.1	2.5	11.9	13.3	6.0	55.5	0.2	100
OSE : TOTAL	4.2	0.6	4.8	2.5	1.4	0.6	8.6	1.9	5.1	1.2	0.5	0.1	1.1	1.4	1.4	2.5	1.2	29.5	8.7	2.3	5.5	13.1	2.4	14.5	13.3	5.7	56.9	0.3	100
SE ENGLAND : TOTAL	1.4	0.2	1.6	2.9	2.1	0.7	10.8	0.6	3.4	1.7	0.4	0.3	1.9	1.1	1.6	4.0	1.7	33.1	7.0	1.9	7.5	13.9	4.5	11.7	12.3	6.3	58.2	0.2	100

Source: Department of Employment and Productivity.

67

Table 4.4 Location Quotients* of employment by main industry groups in the SE sub-divisions

SE England sub-division	Agriculture Forestry etc.	Mining & Quarrying	Extractive : Total	Food Drink & Tobacco	Chemicals	Metal Manufacture	Engineering & Electrical	Shipbuilding	Vehicles	Metal Goods n.e.s.	Textiles	Leather, Fur etc.	Clothing & Footwear	Bricks, Pottery, Glass	Timber, Furniture	Paper, Printing, Publishing	Other Manufacturing	Manufacturing : Total	Construction	Gas, Electricity, Water	Transport & Communications	Distributive	Insurance, Banking etc.	Prof. & Scientific Services	Misc. Services	Public Administrative	Services : Total	Ind. not specified	Total
1. GLC	0.1	0.6	0.2	1.1	1.0	1.0	0.9	0.4	0.6	1.0	1.0	1.4	1.3	0.7	1.0	1.0	0.9	0.9	0.9	1.0	1.3	1.1	1.3	0.9	1.1	1.1	1.1		1.0
2. OMA (West)	1.5	0.8	1.4	1.5	1.6	2.3	1.4	0.1	0.8	1.9	1.6	0.4	0.3	0.8	2.4	1.0	1.6	1.3	0.9	0.8	0.5	0.8	0.6	1.3	0.9	0.6	0.8		1.0
3. OMA (North)	1.5	0.7	1.4	0.7	1.6	1.6	1.5	0.1	4.0	1.0	1.8	0.4	1.1	1.6	1.0	1.5	1.9	1.6	0.9	0.8	0.4	0.7	0.4	1.0	0.6	0.5	0.7		1.0
4. OMA (East)	1.7	0.6	1.5	1.1	1.0	0.6	1.7	0.8	1.4	0.8	0.5	0.3	1.3	2.1	1.2	0.9	1.0	1.3	1.2	1.0	0.6	0.8	0.4	1.1	0.6	0.8	0.8		1.0
5. OMA (SE)	2.8	1.0	2.5	0.6	1.1	0.6	1.0	3.8	0.5	0.9	0.2	0.5	0.2	3.3	0.8	2.6	0.9	1.2	1.1	1.2	0.7	0.9	0.5	1.1	0.7	1.0	0.9		1.0
6. OMA (South)	2.4	1.1	2.2	0.4	1.2	1.4	1.5	0.2	0.2	1.9	0.3	0.5	0.3	1.6	0.7	0.4	0.9	0.9	1.1	0.7	0.6	0.8	0.9	1.5	1.2	0.6	1.0		1.0
7. OMA (SW)	1.9	0.7	1.7	0.6	0.6	0.3	1.3	0.3	2.2	1.1	1.4	0.4	0.2	1.3	1.0	0.6	2.1	1.1	1.2	0.9	0.4	0.9	0.5	1.1	1.1	0.9	0.9		1.0
OMA : TOTAL	1.8	0.8	1.7	0.8	1.3	1.2	1.4	0.8	1.8	1.2	1.1	0.4	0.6	1.7	1.2	1.3	1.4	1.3	1.0	0.9	0.5	0.8	0.5	1.2	0.8	0.7	0.8		1.0
8. OSE (Berks-Oxon)	3.2	1.6	2.9	0.8	0.0	1.9	0.3	0.1	5.2	0.1	1.8	0.5	0.3	0.7	0.9	0.9	0.2	1.0	1.1	0.8	0.5	0.7	0.3	1.8	0.9	1.0	0.9		1.0
9. OSE (Beds-Bucks)	3.4	0.4	3.0	1.1	0.4	2.5	1.2	4.9	1.8	0.5	0.2	3.4	0.8	7.4	0.6	0.7	0.4	1.3	1.0	1.1	0.4	0.8	0.4	1.3	0.6	0.7	0.8		1.0
10. OSE (Essex)	5.3	1.9	4.8	1.1	0.4	2.6	1.1	1.3	0.1	2.5	3.1	0.0	0.8	0.5	1.5	0.7	0.6	1.0	1.2	1.1	0.6	0.9	0.4	1.2	1.0	0.8	0.9		1.0
11. OSE (Kent)	5.1	14.1	6.4	0.9	1.1	0.7	0.4	0.7	0.4	0.4	1.2	0.7	0.7	1.5	0.8	1.0	1.5	0.7	1.3	1.2	1.0	0.9	0.5	1.2	1.1	0.8	1.0		1.0
12. OSE (Sussex Coast)	3.0	1.0	2.7	0.7	0.3	0.4	0.8	0.5	0.2	0.8	0.8	0.5	0.6	0.9	1.0	0.4	0.9	0.6	1.2	1.3	0.6	1.2	0.9	1.4	1.4	0.9	1.1		1.0
13. OSE (Solent)	1.7	0.5	1.6	0.8	1.1	0.3	1.0	7.2	1.5	0.6	0.7	0.2	0.5	0.7	0.7	0.5	0.7	1.0	1.3	1.4	0.8	0.9	0.6	1.0	1.1	0.9	1.0		1.0
OSE : TOTAL	3.0	2.6	3.0	0.8	0.7	0.9	0.8	3.4	1.5	0.7	1.1	0.5	0.6	1.2	0.9	0.6	0.7	0.9	1.2	1.2	0.7	0.9	0.6	1.2	1.1	0.9	1.0		1.0
SE ENGLAND : TOTAL	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0

* calculated as follows: LQ of industry X in sub-division Y = % employees in sub-division Y in industry X ÷ % employees in whole SE Region in industry X.

Source: Department of Employment and Productivity.

Table 4.5 Co-efficients of industrial specialisation in the SE sub-divisions 1966

SE England sub-division	Co-efficient of specialisation*
1. Greater London : TOTAL	15
2. OMA (West)	18
3. OMA (North)	24
4. OMA (East)	17
5. OMA (SE)	18
6. OMA (South)	23
7. OMA (SW)	20
OMA : TOTAL	17
8. OSE (Berks-Oxon)	30
9. OSE (Beds-Bucks)	22
10. OSE (Essex)	16
11. OSE (Kent)	18
12. OSE (Sussex Coast)	23
13. OSE (Solent)	14
OSE : TOTAL	15
SE ENGLAND : TOTAL	11

*Note: derived as follows:-

(1) Calculate for each industry its percentage share of total employment in the whole of Great Britain.

(2) Calculate for each industry its percentage share of total employment in sub-division Y (as shown in rows in Table 4.4).

(3) Subtract (2) from (1) for each industry.

(4) Add all positive differences for sub-division Y (or all negative differences, since the percentage distributions are such that the sum of total plus and minus deviations is zero). The limiting values are zero and 100. If employment in sub-division Y is allocated between industries in exactly the same proportions as in the nation as a whole, the co-efficient will be zero. In contrast, if all employment in the sub-division is in one (regionally small) industry, the value will approach 100.

Source: Department of Employment and Productivity.

Table 4.6 The favourability of the industrial structure of employment in the
SE sub-divisions 1966 (in terms of forecasted national growth rates)

SE England sub-division	Percentage of employment in			Index of employment* growth potential
	growth industries	stable industries	declining industries	
1. Greater London : TOTAL	70.3	18.9	10.8	102
2. OMA (West)	69.1	24.4	6.5	107
3. OMA (North)	62.1	31.9	6.0	96
4. OMA (East)	66.3	25.7	7.9	100
5. OMA (SE)	69.3	19.4	11.3	99
6. OMA (South)	74.4	16.9	8.7	113
7. OMA (SW)	70.7	22.9	6.4	110
OMA : TOTAL	67.5	24.9	7.5	103
8. OSE (Berks-Oxon)	58.2	32.3	9.6	83
9. OSE (Beds-Bucks)	58.6	29.8	11.6	84
10. OSE (Essex)	66.2	19.1	14.7	88
11. OSE (Kent)	60.8	20.5	18.7	72
12. OSE (Sussex Coast)	74.1	16.0	9.9	110
13. OSE (Solent)	64.5	22.3	13.2	88
OSE : TOTAL	64.8	22.3	12.8	89
SE ENGLAND : TOTAL	68.7	20.9	10.4	100

* This is calculated as follows: A weighted sum of the three industrial groups is calculated, the weights selected being: growth industries + 1, stable industries 0, and declining industries - 1. Dividing this sum for each sub-division by the corresponding sum for the whole SE Region we obtain the standardised index of growth potential.

Source: Department of Employment and Productivity.

Table 4.7 The favourability of the SE sub-divisions in terms of their specialisation in
nationally stable and unstable industries

SE England sub-division	Index of cyclical-structural instability	Index of seasonal instability
1. Greater London : TOTAL	96	98
2. OMA (West)	106	100
3. OMA (North)	108	101
4. OMA (East)	107	96
5. OMA (SE)	99	98
6. OMA (South)	90	100
7. OMA (SW)	109	107
OMA : TOTAL	106	99
8. OSE (Berks-Oxon)	101	116
9. OSE (Beds-Bucks)	110	100
10. OSE (Essex)	112	106
11. OSE (Kent)	100	110
12. OSE (Sussex Coast)	102	111
13. OSE (Solent)	108	105
OSE : TOTAL	105	108
SE ENGLAND : TOTAL	100	100

Note: The bases from which these indices are compiled are explained in the text of this chapter. A low index denotes specialisation in generally stable industries: a high index specialisation in generally unstable industries.

Source: Department of Employment and Productivity.

Table 4.8 Percentage distribution by sub-division of employees in each main industry group 1966

SE England sub-division	Agriculture Forestry etc.	Mining & Quarrying	Extractive : Total	Food Drink & Tobacco	Chemicals	Metal Manufacture	Engineering & Electrical	Shipbuilding	Vehicles	Metal Goods n.e.s.	Textiles	Leather, Fur etc.	Clothing & Footwear	Bricks, Pottery, Glass	Timber, Furniture	Paper, Printing, Publishing	Other Manufacturing	Manufacturing : Total	Construction	Gas, Electricity, Water	Transport & Communications	Distributive	Insurance, Banking etc.	Prof. & Scientific Services	Misc. Services	Public Administrative	Services : Total	Ind. not specified	Total
1. GLC	5.7	35.3	9.8	66.1	59.7	57.4	54.2	22.8	32.9	60.9	56.8	80.7	75.6	39.4	56.7	60.5	54.7	55.2	54.7	58.1	75.9	65.7	78.7	52.4	62.9	68.3	64.8		59.9
2. OMA (West)	6.4	3.4	6.0	6.4	6.8	9.7	5.8	0.4	3.3	8.0	6.8	1.9	1.5	3.2	10.1	4.3	6.7	5.5	4.0	3.5	1.9	3.5	2.4	5.5	3.7	2.7	3.6		4.3
3. OMA (North)	8.5	4.4	7.9	3.9	9.6	9.1	8.7	0.5	23.3	5.6	10.4	2.5	6.3	9.1	6.0	9.0	11.0	9.4	5.2	4.4	2.3	4.0	2.4	5.7	3.7	3.0	3.8		5.9
4. OMA (East)	6.5	2.1	5.9	4.2	4.0	2.3	6.7	3.0	5.4	3.1	1.9	1.2	4.9	8.2	4.5	3.6	3.9	5.1	4.5	4.0	2.4	3.1	1.7	4.3	2.5	2.9	3.0		3.9
5. OMA (SE)	9.2	3.4	8.4	1.9	3.7	2.1	3.4	12.4	1.7	3.1	0.6	1.7	0.5	11.1	2.7	8.8	2.9	3.9	3.7	4.1	2.2	2.9	1.7	3.7	2.4	3.4	2.9		3.3
6. OMA (South)	5.2	2.5	4.8	0.9	2.6	3.1	3.2	0.4	0.4	4.0	0.5	1.1	0.6	3.6	1.6	0.9	1.9	2.0	2.4	1.5	1.4	1.7	2.0	3.3	2.6	1.2	2.1		2.2
7. OMA (SW)	5.4	2.0	4.9	1.8	1.8	0.8	3.9	0.9	6.5	3.2	4.0	1.2	0.7	3.8	2.9	1.7	6.0	3.3	3.5	2.5	1.1	2.5	1.4	3.3	3.3	2.5	2.6		2.9
OMA : TOTAL	41.2	17.7	38.0	19.0	28.4	27.1	31.8	17.7	40.6	27.0	24.1	9.6	14.4	39.0	27.8	28.4	32.2	29.1	23.4	20.0	11.2	17.7	11.7	25.8	18.1	15.8	18.0		22.4
8. OSE (Berks-Oxon)	7.7	3.8	7.1	2.0	0.1	4.5	0.8	0.3	12.7	0.2	4.2	1.3	0.0	1.7	2.2	2.3	0.4	2.4	2.8	1.9	1.3	1.8	0.8	4.3	2.1	2.3	2.3		2.4
9. OSE (Beds-Bucks)	3.5	0.4	3.1	1.1	0.4	2.6	1.3	5.1	1.8	0.5	0.2	3.5	0.8	7.7	0.6	0.7	0.4	1.4	1.1	1.2	0.4	0.8	0.4	1.3	0.6	0.8	0.8		1.0
10. OSE (Essex)	7.4	2.6	6.7	1.5	0.6	3.6	1.5	1.8	0.1	3.5	4.4	0.0	1.1	0.7	2.0	0.9	0.8	1.3	1.7	1.6	0.9	1.3	0.5	1.6	1.3	1.1	1.2		1.4
11. OSE (Kent)	12.0	33.6	14.9	2.2	2.5	1.6	0.9	1.6	1.0	0.9	2.7	1.6	1.7	3.6	2.0	2.3	3.5	1.7	3.0	2.9	2.3	2.1	1.2	2.8	2.6	2.0	2.1		2.4
12. OSE (Sussex Coast)	10.4	3.5	9.5	2.4	0.9	1.5	2.6	1.8	0.6	2.9	2.7	1.8	1.9	3.1	3.6	1.5	3.0	2.2	4.4	4.7	2.3	4.1	3.0	4.8	5.1	3.2	4.1		3.6
13. OSE (Solent)	12.0	3.0	10.8	5.7	7.4	1.8	7.0	48.9	10.3	4.1	4.8	1.5	3.6	4.9	5.1	3.5	4.9	6.7	9.0	9.7	5.7	6.4	3.8	6.9	7.4	6.4	6.5		6.8
OSE : TOTAL	53.0	46.9	52.2	14.9	11.9	15.6	14.0	59.5	16.5	12.1	19.0	9.7	10.0	21.7	15.5	11.1	13.0	15.7	21.9	21.9	12.8	16.5	9.6	21.8	19.0	15.9	17.2		17.6
SE ENGLAND : TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		100

Table 4.9 The ratio of female to total employment (F/T) in the SE sub-divisions 1966,
and analysis of proportionality and differential effects

SE England sub-division	Actual 100 F/T ratio	Proportionality effect	Differential effect
1. Greater London : TOTAL	38.7	+ 0.8	- 0.4
2. OMA (West)	39.0	+ 0.4	+ 0.3
3. OMA (North)	36.0	- 3.2	+ 0.9
4. OMA (East)	37.9	- 1.7	+ 1.4
5. OMA (SE)	36.4	- 2.3	+ 0.5
6. OMA (South)	39.9	+ 1.6	0
7. OMA (SW)	38.2	- 0.7	+ 0.7
OMA : TOTAL	37.6	- 1.3	+ 0.7
8. OSE (Berks-Oxon)	34.7	- 1.9	- 1.7
9. OSE (Beds-Bucks)	34.7	- 3.2	- 0.3
10. OSE (Essex)	36.2	- 0.5	- 1.5
11. OSE (Kent)	38.4	- 2.3	+ 2.4
12. OSE (Sussex Coast)	42.3	+ 2.7	+ 1.3
13. OSE (Solent)	36.8	- 2.3	+ 0.8
OSE : TOTAL	37.7	- 0.9	+ 0.3
SE ENGLAND: : TOTAL	38.3	0	0

Note: The full meaning of the proportionality and differential effects is explained in the text.

Source: Department of Employment and Productivity.

CHAPTER 5 RESIDENTIAL - EMPLOYMENT BALANCE

INTRODUCTION

184. It was noted in Chapter 3 of this report that the correlation between sub-divisional population and employment growth is not perfect and could be usefully analysed in terms of age structure, activity and unemployment rates and net workplace movement effects. That is the principal purpose of this chapter; to study in such terms the specialisation of function as between the sub-divisions. Indeed there is no clearer way of demonstrating the economic inter-dependence of the sub-divisions than by a study of their broad functional specialisms. Areas can be initially classified according to their degree of specialisation in productive activities by reference to the relative magnitudes of population resident in the area (P) and numbers of persons employed in the area (E). If the ratio of employment to population (E/P) in a particular sub-division is above the regional average it can be regarded as oriented towards income-producing activities: if E/P is below average the orientation is towards income-consuming activities. Essentially this ratio is a measure of the balance between residential activities and employment in each sub-division.

185. The values of the E/P ratio for the thirteen sub-divisions in 1966 are presented in the first column of Table 5.1 as percentages of the regional average. Although specialisation of function is nowhere near complete (tending towards zero or infinity), significant variations are revealed. Most obvious is the high production - orientation of Greater London, other sub-divisions being more or less oriented towards income-consuming activities, OMA (South) being the most specialised in this way. The sub-divisions can be generally classified as follows:

Oriented towards income-producing activities:

(1) GLC

Slightly oriented towards income-consuming activities:

(8) OSE (Berks-Oxon)
(3) OMA (North)
(2) OMA (West)
(13) OSE (Solent)
(9) OSE (Beds-Bucks)

Heavily oriented towards income-consuming activities:

(7) OMA (South West)
(5) OMA (South East)
(11) OSE (Kent)
(4) OMA (East)
(10) OSE (Essex)
(12) OSE (Sussex Coast)
(6) OMA (South)

186. Turning now to look at residential-employment balance from a dynamic rather than a static viewpoint, it can be demonstrated that there has been a clear increase in the extent of specialisation. E/P ratios for 1951 are presented for each of the sub-divisions in the first column of Table 5.2. Comparison with Table 5.1(a) reveals that Greater London has increased its relative production-orientation and both the OMA and OSE have become less production oriented. The ranking of sub-divisions according to their E/P ratio has not changed much, but the absolute size of the sub-divisional differentials has widened.

187. As for individual sub-divisions, the following classification is appropriate:

Increasing production specialisation:

1. Greater London
4. OMA (East)
6. OMA (South)

Decreasing production specialisation:

5. OMA (South East)
7. OMA (South West)
8. OSE (Berks-Oxon)
9. OSE (Beds-Bucks)
10. OSE (Essex)
11. OSE (Kent)

188. Sub-divisions (2), (3), (12) and (13) have not significantly changed their relative specialisation. Of course it should be emphasised that these changes in residential-employment balance are best thought of as the outcome of the relative force of two pressures, growth of population and growth of employment. They are generally more complementary than substitutable, and the direction of specialisation of any sub-division depends mainly upon the spatial distribution of these pressures within the region.

189. Also it should be noted that this approach to identification of residential-employment balance in the sub-divisions has certain defects stemming from its over-generality: it reveals very little about the reasons underlying the nature of economic orientation. It is necessary to look behind this primary E/P ratio to discover what determines its relative magnitude in different sub-divisions. Four such explanatory variables can be identified: the age composition of the population, activity rates, unemployment levels and workplace movements. By organising these independent variables in a certain way the primary ratio becomes their product. Thus:

$$E/P = W/P \quad . \quad A/W \quad . \quad M/A \quad . \quad E/M$$

where W = population of working age (males aged 15-64 plus females aged 15-59)
A = economically active persons resident in the area
M = residents of the area in employment (i.e. A minus these persons unemployed)

Thus production specialisation will be greatest in those sub-divisions where:

(i) a high proportion of the resident population is of working age,

(ii) a high proportion of those of working age is seeking employment,

(iii) a high proportion of those seeking employment is actually in employment,

(iv) net workplace movements are inwards rather than outwards from the area.

Of course, the four independent variables may not all operate in the same direction, in which case it is their relative magnitude which determines the general direction of residential-employment balance. But how do the 13 South East sub-divisions actually fare in terms of these four variables? Analysis of the 1966 Census produces the statistics presented in Table 5.1 shown in terms of regional relatives, i.e. normalising the sub-divisional values around the Regional average which is set at 100. We can see for each sub-division how the value of the E/P ratio is determined. The GLC area is the most production-oriented because (in order of diminishing importance) of net workplace inflows, high activity rates and economically favourable age structure. Sub-division (6) OMA (South) is the least production-oriented primarily because of its conspicuously high net workplace outflows, while sub-division (12) OSE (Sussex Coast) runs it a close second largely because of its particularly unfavourable age composition - nearly 28% of the resident population is 'too old' (males over 64 and females over 59).

190. We now go on to analyse each of the four determinants of the E/P ratio in more detail, both in terms of their comparative values in 1966 and changes in these values over the previous 15 years.

AGE STRUCTURE OF THE POPULATION
(See Tables 5.2 and 5.2(a))

191. The proportion of persons in each sub-division of working age (males aged 15-64 plus females aged 15-59) varies quite considerably between sub-divisions. The GLC has clearly the most favourable age structure, while the OSE area has the least favourable, although it is worth noting that OSE sub-divisions (8) and (9) have more favourable age distributions than some of the OMA sub-divisions.

192. It is clear that an unfavourable age structure (in terms of the proportion of population that is of working age) is generally associated with a high proportion of old persons rather than a high proportion of young persons. And the obvious conclusion to be drawn from studying the distribution of old persons is that they are most concentrated in the 4 coastal sub-divisions (10), (11), (12) and (13), most noticeable of all in (12) where over one quarter of the population is above the normal working age.

193. Furthermore, one can generally point out that although age distributions in *all* South East areas have become less favourable since 1951, the areas with the greatest decline in percentage of population of working age have been those which initially had the least favourable structure. Therefore the effect of the regional distribution of the change in age structure can be seen as *exaggerating* original spatial variations in the ratio of employment to population. This is a demonstration of one particular aspect of residential - employment balance: those sub-divisions specialising in 'retirement' are doing so to an increasing extent.

194. The following chart summarises this information by classifying the sub-divisions according to percentage population of working age in 1966 and change in the percentage population of working age over the period 1951-1966.

Diagram 1

% pop. of working age in 1966 / Decline in % pop. of working age 1951-1966	Over 64%	62-64%	60-62%	Under 60%
Slow (below 3%)	(1)GLC		(4)OMA(East) (6)OMA(South)	
Medium (3-6%)	(8)OSE(Berks-Oxon)	(2)OMA(West) (3)OMA(North)	(5)OMA(SE) (7)OMA(SW) (9)OSE(Beds-Bucks)	(10)OSE(Essex) (13)OSE(Solent)
Rapid (over 6%)				(11)OSE(Kent) (12)OSE(Sussex Coast)

ACTIVITY RATES
(See Tables 5.3 and 5.3(a))

195. Activity rates usually relate the economically active population to the number of persons aged over 15 years. As such, however, they are influenced by the proportion of old persons in the population as well as the proportion of persons of working age who offer themselves for employment. In order to isolate only the latter factor, the activity rates used in this analysis, and shown in tables 5.3 and 5.3(a), relate the numbers of economically active persons to the population of *working age* (males aged 15-64, females aged 15-59). One problem remains: activity rates are overstated because some males aged over 64 and some

females aged over 59 do in fact offer themselves for employment. The activity rate, therefore, may exceed 100% if the number of persons classified in this way as too old to work but actually working exceeds the numbers of persons of working age who are voluntarily unemployed or continuing their education past the age of 15. But, in the absence of data on the age distribution of the economically active persons, this difficulty cannot be avoided.

196.   The results presented in tables 5.3 and 5.3(a) indicate no striking differences in male activity rates with the exception of sub-divisions 6, 8 and 12 which are rather below the average. The major differences occur in the female activity rates. The GLC area is consistently outstandingly favourable in this respect, the OMA faring a little better than the OSE, sub-division (10) being the least favourable. With regard to the changes in activity rates over the period 1951-66, there is not much variation between sub-divisions, the one exception being sub-division (8), whose male activity rate has fallen almost enough to offset the rise in the female rate. Elsewhere the improvement in the female rate has caused a 6-12% improvement in the overall activity rate.

197.   The following diagram summarises these results by classifying sub-divisions according to overall activity rates in 1966 and percentage change 1951-66:

Diagram 2

Activity rate 1966 / Increase in activity rate 1951-1966	Over 80%)	76-80%	75% and under
Rapid (over 10%)		(4)OMA(East) (12)OSE(Sussex Coast)	(6)OMA(South) (11)OSE(Kent) (13)OSE(Solent)
Average (5-10%)	(1)GLC	(2)OMA(West) (3)OMA(North) (7)OMA(SW) (9)OSE(Beds-Bucks)	(5)OMA(SE) (10)OSE(Essex)
Slow (under 5%)			(8)OSE(Berks-Oxon)

UNEMPLOYMENT
(See Table 5.4)

198.   This is the least important determinant of the ratio of employment to population, the variation in the ratio of residents in employment to economically active residents being less than 2%. However significant differences are to be found within the sub-divisions in 1951, 1961 and 1966. The lowest percentage unemployment has been in the OMA sub-divisions, and the highest in the OSE area, particularly in the four coastal sub-divisions (where one would expect some seasonal unemployment at the Census date in April). The GLC area occupied an intermediate position in 1951, 1961 and 1966 and had about the same percentage unemployed as South East England as a whole.

199.   With regard to changes in the level of unemployment over the period, little can be said from these three 'spot' observations: a more thorough investigation is necessary. However it is obvious that, comparing the three sets of observations, the general picture is remarkably similar: rank correlations between the sub-divisions in any pair of years are positive and significant. For these reasons we do not present a cross-classification of sub-divisions according to 1966 level and 1951-1966 time trend, as was done with the age structure and activity rate analyses. The following classification is quite adequate for current purposes:

a. *Relatively high unemployment:*

> 11 OSE (Kent)
> 12 OSE (Sussex Coast)
> 13 OSE (Solent)

b. *Unemployment around Regional average:*

> 1 GLC
> 4 OMA (East)
> 5 OMA (South East)
> 10 OSE (Essex)

c. *Relatively low unemployment:*

> 2 OMA (West)
> 3 OMA (North)
> 6 OMA (South)
> 7 OMA (South West)
> 8 OSE (Berks-Oxon)
> 9 OSE (Beds-Bucks)

Chapter 7 of this report is concerned with a full investigation of differences between sub-divisions in unemployment levels, fluctuations and trends.

NET WORKPLACE MOVEMENTS
(See Table 5.5)

200. This is the final determinant of the ratio of employment to population. A net inflow will be conducive to a high ratio: a net outflow conducive to a low ratio. Only the GLC area and sub-division (8) fall in the former category, but the other sub-divisions vary significantly in the percentage net outward movements. In sub-division (13) the ratio of numbers employed to residents in employment is over 98% while in sub-division (6) the ratio falls below 80%. Obviously a close relationship exists between the magnitude of this ratio and the dependence on Greater London for employment and this is analysed further in the following chapter on economic interdependence. And of course the ratio of numbers employed to residents in employment is generally higher in the OSE area than in the OMA.

201. With regard to changes in net workplace movements some significant differences are to be found between the sub-divisions. The obvious point is that the gap is widening. The percentage inflow to (1) the GLC area is increasing while the percentage outflow of *all other areas* is greater than in 1951. However, there are important variations in the rate at which all these sub-divisions are becoming net outflow areas. The rate varies between over 5% in sub-divisions (5), (7), (9), (10) and (11) to under 1% in (12) and (13).

202. Moreover, the sub-divisions which have had the highest increase in net outflow rates are generally those which initially had the lowest ratios of employment to residents in employment. So, like the effect of the sub-divisional distribution of the change in age structure, the effect of the sub-divisional changes in commuting rates can be seen as exaggerating original spatial variations in the ratio of employment to population.

203. The following table summarises the data presented in Table 5.5, although it should be emphasised that classifying areas according to trends may be a little arbitrary if the trends are not completely consistent, as appears to be the case in a couple of the sub-divisions.

Diagram 3

Net labour flows in 1966 / Change in net flows 1951-66	Net labour inflow	Relatively light net labour out-flow	Moderate net labour outflow	Relatively heavy net labour outflow
Increase in net inflow	(1)GLC			
Decrease in net inflow	(8)OSE(Berks-Oxon)			
Below average increase in rate of net labour outflow		(2)OMA(West) (3)OMA(North) (13)OSE(Solent)	(12)OSE(Sussex Coast)	(4)OMA(East) (6)OMA(South)
Above average increase in rate of net labour outflow			(5)OMA(SE) (9)OSE(Beds-Bucks) (10)OSE(Essex) (11)OSE(Kent) (7)OMA(SW)	

SUMMARY

204. The regional relatives of these four variables (W/P, A/W, M/A and E/M) are shown in Tables 5.1 and 5.1(a). From these figures we can suggest how these four variables affect the primary E/P ratio in each area, because for any individual sub-division the effect of each of the four variables on the E/P ratio is directly measured by the variation of its regional relative from 100%. If the regional relatives of each of the four variables were 100 then the E/P ratio would equal 100: it is the extent to which each of the variables differs from 100 that determines their impact on the E/P ratio. In sub-division (12) in 1966, for example, all four variables have a depressing effect on the primary ratio, but variables W/P and E/M have the strongest effects, while M/A and A/W have comparatively weak effects. In sub-division (3) on the other hand, one of the variables has an uplifting effect on the ratio, although not such a strong effect on the ratio as the two variables which have a depressing effect, with the result that the ratio of employment to population is well below 100.

205. In general, the E/M ratio seems to be of prime importance in the determination of the broad direction of residential-employment balance, followed by the W/P ratio and then by A/W. The M/A ratio is clearly of least importance. This ordering is based on three tests:

(i) examinations of the size of the range between highest and lowest values of each of the four variables;

(ii) examination of the number of sub-divisions in which each variable has greatest deviation from the regional average (E/M is quantitatively of most significance in 9 of the 13 cases);

(iii) examination of the degree of association of the ordering of the sub-divisions according to the value of the primary ratio and according to the value of each of the four explanatory variables. In the case of the E/M ratio the Spearman rank correlation coefficient is +0.819.

206. Thus, as far as it is possible to generalise, one can say that, of the four variables, the magnitude of net workplace movements is the greatest influence and the size of unemployment the least important influence on the extent to which any sub-division is either an income-producing or income-consuming area. This emphasis on workplace movements as the prime influence on residential-employment balance in the South East Region, emphasises again the importance of spatial interdependence in sub-divisional studies noted in Chapter C.2. In recognition of this, the following chapter of this report is devoted to an analysis of spatial economic interrelationships between the sub-divisions.

Table 5.1 Residential-employment balance in the SE sub-divisions 1966

SE England sub-division	E/P	W/P	A/W	M/A	E/M
1. Greater London : TOTAL	118	103	104	100	109
2. OMA (West)	93	100	99	101	93
3. OMA (North)	95	100	99	101	94
4. OMA (East)	78	98	96	100	83
5. OMA (SE)	82	98	95	100	88
6. OMA (South)	75	98	95	101	79
7. OMA (SW)	83	99	98	101	85
OMA : TOTAL	85	99	97	101	88
8. OSE (Berks-Oxon)	98	103	92	101	103
9. OSE (Beds-Bucks)	89	99	98	101	91
10. OSE (Essex)	78	94	94	101	88
11. OSE (Kent)	79	91	95	99	92
12. OSE (Sussex Coast)	77	87	97	99	92
13. OSE (Solent)	89	95	96	100	98
OSE : TOTAL	85	94	95	100	95
SE ENGLAND : TOTAL	100	100	100	100	100

Notes: E/P: proportion of regional employment as % of proportion of total regional population.

W/P: proportion of regional working age population as % of proportion of total regional population.

A/W: proportion of regional economically active population as % of proportion of regional working age population.

M/A: proportion of regional economically active population actually in employment as % of proportion of regional economically active population.

E/M: proportion of regional employment as % of proportion of regional economically active population actually in employment.

Source: Census of England and Wales 1966.

Table 5.1(a) Residential-employment balance in the SE sub-divisions 1951

SE England Sub-division	E/P	W/P	A/W	M/A	E/M
1. Greater London : TOTAL	111	103	104	100	104
2. OMA (West)	94	100	98	100	95
3. OMA (North)	94	100	98	101	95
4. OMA (East)	75	96	94	100	84
5. OMA (South East)	90	98	95	100	97
6. OMA (South)	72	97	91	100	82
7. OMA (South West)	92	100	98	101	94
OMA : TOTAL	87	99	96	100	92
8. OSE (Berks-Oxon)	102	100	98	101	104
9. OSE (Beds-Bucks)	93	100	97	101	95
10. OSE (Essex)	84	96	93	100	94
11. OSE (Kent)	83	93	93	99	97
12. OSE (Sussex Coast)	78	91	93	99	93
13. OSE (Solent)	88	96	93	99	99
OSE : TOTAL	87	95	94	100	97
SE ENGLAND : TOTAL	100	100	100	100	100

Notes: as for Table 5.1

Source: Census of England and Wales 1951

Table 5.2 Age distribution of population in the SE sub-divisions 1966

SE England sub-division	Males %			Females %			Total % of work-ing age*	RR✓
	0-14	15-64	65+	0-14	15-59	60+		
1. Greater London : TOTAL	21.5	69.3	9.2	18.9	60.0	21.1	64.5	(103)
2. OMA (West)	26.0	66.0	8.0	23.8	58.7	17.5	62.3	(100)
3. OMA (North)	26.7	66.2	7.1	24.6	59.3	16.1	62.7	(100)
4. OMA (East)	26.9	64.6	8.5	23.8	57.9	18.3	61.2	(98)
5. OMA (SE)	26.0	64.9	9.0	23.1	57.5	19.4	61.1	(98)
6. OMA (South)	24.7	65.6	9.7	21.6	57.4	21.1	61.3	(98)
7. OMA (SW)	25.4	65.9	8.7	23.0	58.0	19.0	61.8	(99)
OMA : TOTAL	26.1	65.6	8.3	23.5	58.2	18.3	61.8	(99)
8. OSE (Berks-Oxon)	25.5	66.0	8.5	23.6	62.3	14.1	64.2	(103)
9. OSE (Beds-Bucks)	24.5	65.8	9.7	23.0	57.4	19.6	61.6	(99)
10. OSE (Essex)	23.4	63.4	13.2	20.9	54.3	24.8	58.7	(94)
11. OSE (Kent)	23.4	62.1	14.5	20.1	52.2	27.7	56.9	(91)
12. OSE (Sussex Coast)	20.4	61.2	18.4	15.9	48.9	35.2	54.4	(87)
13. OSE (Solent)	24.6	63.5	11.9	21.3	55.0	23.6	59.1	(95)
OSE : TOTAL	23.5	63.3	13.2	20.2	54.1	25.7	58.4	(94)
SE ENGLAND : TOTAL	23.4	66.7	9.9	20.5	58.3	21.1	62.4	(100)

* (Males aged 15-64 *plus* females aged 15-59) ÷ total population
✓ RR = Regional relative

Source: Census of England and Wales 1966

86

Table 5.2(a) Age distribution of population in the SE sub divisions 1951

SE England sub-division	Males %			Females %			Total % of work-ing age*	RR
	0-14	15-64	65+	0-14	15-59	60+		
1. Greater London : TOTAL	22.4	69.0	8.6	19.0	63.6	17.4	66.1	(103)
2. OMA (West)	23.1	67.3	9.6	20.4	61.5	18.1	64.3	(100)
3. OMA (North)	23.8	67.4	8.8	21.2	62.0	16.8	64.6	(100)
4. OMA (East)	25.0	64.6	10.4	21.2	59.4	19.3	61.9	(96)
5. OMA (SE)	24.1	66.0	9.9	21.1	60.2	18.8	63.0	(98)
6. OMA (South)	23.4	65.4	11.2	19.2	59.8	21.1	62.4	(97)
7. OMA (SW)	23.2	67.7	9.1	20.8	60.9	18.3	64.2	(100)
OMA : TOTAL	23.8	66.5	9.7	20.7	60.7	18.6	63.5	(99)
8. OSE (Berks-Oxon)	22.7	68.4	8.9	21.6	60.5	17.9	64.5	(100)
9. OSE (Beds-Bucks)	21.3	68.4	10.3	20.4	59.9	19.7	64.2	(100)
10. OSE (Essex)	22.5	65.1	12.4	20.0	58.4	21.6	61.7	(96)
11. OSE (Kent)	24.1	63.6	12.4	20.7	57.2	22.0	60.2	(93)
12. OSE (Sussex Coast)	22.9	62.6	14.5	17.2	55.6	27.2	58.7	(91)
13. OSE (Solent)	23.4	65.8	10.7	20.8	58.6	20.6	62.1	(96)
OSE : TOTAL	23.1	65.2	11.7	19.9	57.9	22.2	61.4	(95)
SE ENGLAND : TOTAL	22.9	67.5	9.6	19.6	61.6	18.8	64.4	(100)

* *Notes* as for table 5.2

Source: Census of England and Wales 1951

Table 5.3 Activity rates in the SE sub-divisions 1966

SE England sub-division	Economically active persons as a percentage of persons of working age*			
	Males	Females	Total	RR
1. Greater London : TOTAL	97	67	82	(104)
2. OMA (West)	97	57	78	(99)
3. OMA (North)	97	58	78	(99)
4. OMA (East)	97	53	76	(96)
5. OMA (SE)	97	52	75	(95)
6. OMA (South)	94	55	75	(95)
7. OMA (SW)	98	55	77	(98)
OMA : TOTAL	97	55	77	(97)
8. OSE (Berks-Oxon)	93	51	73	(92)
9. OSE (Beds-Bucks)	98	54	77	(98)
10. OSE (Essex)	97	50	75	(94)
11. OSE (Kent)	96	53	75	(95)
12. OSE (Sussex Coast)	94	59	77	(97)
13. OSE (Solent)	97	52	75	(96)
OSE : TOTAL	96	54	75	(95)
SE ENGLAND : TOTAL	97	60	79	(100)

*Note: Persons of working age defined as males aged 15-64 and females aged 15-59

RR   =   Regional relative

Source: Census of England and Wales 1966

88

Table 5.3(a) Activity in the SE sub-divisions 1951

SE England sub-division	MALES Econ. active as % of pop. 15-64	FEMALES Econ. active as % of pop. 15-59	TOTAL Econ. active as % of pop. of working age*	RR⁄
1. Greater London : TOTAL	100	53	76	(104)
2. OMA (West)	100	44	72	(98)
3. OMA (North)	100	45	72	(98)
4. OMA (East)	99	39	69	(94)
5. OMA (South East)	98	40	69	(95)
6. OMA (South)	96	39	67	(91)
7. OMA (South West)	99	42	72	(98)
OMA : TOTAL	99	42	70	(96)
8. OSE (Berks-Oxon)	99	41	72	(98)
9. OSE (Beds-Bucks)	100	38	71	(97)
10. OSE (Essex)	99	36	68	(93)
11. OSE (Kent)	99	37	68	(93)
12. OSE (Sussex coast)	98	43	69	(94)
13. OSE (Solent)	98	37	68	(93)
OSE : TOTAL	98	39	69	(94)
SE ENGLAND : TOTAL	99	48	73	(100)

*Notes as for Table 5.3

Source: Census of England and Wales 1951

Table 5.4 Unemployment in the SE sub-divisions 1951 (April), 1961 (April), and 1966 (April)

SE England sub-division	Unemployed persons as a percentage of economically active persons resident in the area					
	1951	(R.R.)*	1961	(R.R.)*	1966	(R.R.)*
1. Greater London : TOTAL	1.9	(99)	2.3	(105)	2.5	(106)
2. OMA (West)	1.4	(74)	1.7	(75)	1.6	(70)
3. OMA (North)	1.1	(55)	1.4	(61)	1.8	(76)
4. OMA (East)	2.2	(112)	2.3	(104)	2.3	(97)
5. OMA (South East)	1.8	(92)	2.2	(98)	2.1	(88)
6. OMA (South)	1.7	(88)	1.5	(65)	1.8	(75)
7. OMA (South West)	1.4	(71)	1.4	(61)	1.7	(73)
OMA : TOTAL	1.5	(80)	1.7	(77)	1.8	(78)
8. OSE (Berks-Oxon)	1.1	(56)	1.5	(65)	1.7	(75)
9. OSE (Beds-Bucks)	1.0	(52)	1.7	(78)	1.6	(68)
10. OSE (Essex)	1.7	(90)	2.0	(91)	2.4	(102)
11. OSE (Kent)	3.0	(153)	3.1	(139)	3.7	(158)
12. OSE (Sussex Coast)	3.1	(161)	3.1	(140)	3.3	(139)
13. OSE (Solent)	2.4	(126)	2.8	(125)	2.6	(111)
OSE : TOTAL	2.3	(121)	1.6	(117)	2.7	(115)
SE ENGLAND : TOTAL	1.9	(100)	2.2	(100)	2.3	(100)

Note: *R.R. (Regional relative) = percentage unemployed in the area divided by percentage unemployed in SE England as a whole.

Source: Census of England and Wales (Workplace Tables), 1951, 1961 and 1966

Table 5.5 Comparison of residents in employment* and numbers employed in
the SE sub-divisions, 1951, 1961 and 1966

SE England sub-division	Proportion of regional employment ÷ proportion of regional residents in employment*		
	1951	1961	1966
1. Greater London : TOTAL	104	108	109
2. OMA (West)	95	94	93
3. OMA (North)	95	93	94
4. OMA (East)	84	79	83
5. OMA (SE)	97	91	88
6. OMA (South)	82	77	79
7. OMA (SW)	93	86	85
OMA : TOTAL	92	87	88
8. OSE (Berks-Oxon)	104	103	103
9. OSE (Beds-Bucks)	95	92	91
10. OSE (Essex)	94	92	88
11. OSE (Kent)	97	94	92
12. OSE (Sussex Coast)	93	93	92
13. OSE (Solent)	99	98	98
OSE : TOTAL	97	96	95
SE ENGLAND : TOTAL	100	100	100

*Note: residents in employment = economically active population resident in the sub-
division MINUS unemployed persons.

Source: Census of England and Wales (Workplace tables) 1951, 1961, 1966.

CHAPTER 6 ECONOMIC INTERRELATIONSHIPS

207. Having identified the broad pattern of residential-employment balance we proceed in this chapter to examine the spatial interrelationship to which that specialisation gives rise. Ideally, one should study all types of movement between the sub-divisions including:

    (i) flows of goods imported and exported by each sub-division,

    (ii) flows of persons for the consumption of services, including social, recreational and cultural activities, but particularly for retail shopping purposes,

    (iii) workplace movements within and between the sub-divisions.

208. It is data availability which limits our analysis of spatial interdependence principally to the third of these movement types. Conceptually, the first involves the compilation of an inter sub-divisional input-output table, which is, of course, quite out of the question in the absence of any data whatsoever on sources of commodity imports and destination of exports from each of the sub-divisions.

209. Analysis of the second group of sub-divisional interrelationships concerning *service-consumption flows* would also seem to be restricted by the lack of data: the only general information relates to retail turnover in different Local Authority Areas (derived from the Census of Distribution of 1961)*. The nature of this data is such that it classifies expenditure by place of purchase only, with no cross-classification with place of residence. Hence, direct information on shopping movements between the sub-divisions cannot be derived from this source. However, by making a couple of simple and not obviously absurd assumptions, we can derive some indication of which sub-divisions are net shopping inflow areas and which are net outflow areas.

210. First, we calculate the *ratio of retail turnover to population resident in each sub-division*. This represents the simultaneous effect of three phenomena:

    (i) differences between sub-divisions in the level of average incomes,

    (ii) sub-divisional variations in the average propensity to consume with respect to income,

    (iii) inter sub-divisional shopping flows.

211. Now if we assume that the variations between sub-divisions in (i) are as shown later in Table 8.5, and that there are no sub-divisional differences in (ii) regarding the proportion of income saved, we can calculate the ratio:

$$\frac{\text{Retail turnover} \quad \div \quad \text{resident population}}{\text{Average per capita incomes}}$$

212. Normalising around the corresponding figure for the whole Region we obtain the regional relatives for each sub-division. A relative in excess of 100 indicates a net shopping inflow area and one less than 100 a net outflow area. Only Greater London, OSE (Sussex Coast), and OSE (Solent) fall in the former category, but the other ten sub-divisions vary considerably in the relative magnitude of their net outflows of shopping funds, regional relatives ranging between 84 in sub-divisions (6) and (9), and 99 in sub-division (5). As expected, net shopping outflows are generally heavier from the OMA than the OSE which reveals a regional relative of exactly 100.

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*Sub-divisional data cannot be compiled from the returns of the 1966 Census of Distribution because of the nature of the sample used in that survey.

213. The actual values of the relatives are not shown, because, in view of the underlying assumptions about the sub-divisional variations in the form of the consumption function, small differences cannot be regarded as significant. Nevertheless, a reasonable classification would be as follows:

(a) *net inflow areas* (Regional relative over 100)

    (1) GLC
    (12) OSE (Sussex Coast)
    (13) OSE (Solent)

(b) *light net outflow areas* (Regional relative 91-100)

    (2) OMA (West)
    (5) OMA (SE)
    (7) OMA (SW)
    (8) OSE (Berks-Oxon)
    (10) OSE (Essex)
    (11) OSE (Kent)

(c) *heavy net outflow areas* (Regional relative 90 or below)

    (3) OMA (North)
    (4) OMA (East)
    (6) OMA (South)
    (9) OSE (Beds-Bucks)

214. Greater London is seen to be a net inflow area as one would expect. OSE (Sussex Coast) and OSE (Solent) require further explanation and there would seem to be two plausible hypotheses to explain their net inflows:

(i) the additional shopping expenditure resulting from catering for the holiday trade,

(ii) the location of sub-divisional boundaries relative to the main shopping centres. OSE (Solent) probably has shopping inflows (principally to Poole and Bournemouth) from outside the South East Region, while OSE (Sussex Coast) has shopping inflows from OMA (South), particularly to Brighton.

215. At the other extreme none of the heavy net outflow areas is likely to gain expenditures as the result of holiday trade and might be presumed to have shopping facilities less than adequate for the resident population. More specifically it would seem that OMA (North), (East) and (South) are the source of much of the net inflow of expenditure to Greater London. OSE (Beds-Bucks) would seem to lack any major retail centre except Bedford and has consumption outflows, particularly to Oxford (in sub-division (8)) and Northampton (outside the South East Region).

216. So much for sub-divisional patterns of shopping movement. The rest of this chapter concentrates on *workplace movements*. Indeed to do so really requires no apology since it has already been demonstrated (in Chapter 5) that they constitute the prime influence on the level and change in residential - employment balance in the sub-divisions. From Table 5.5 we can classify the sub-divisions broadly as shown in Diagram 3 of Chapter 5. However, a rather more detailed analysis of the 1966 Census workplace data is desired if we are to gain further insight into the forces underlying such movements. In particular it would seem important to identify the absolute volume as well as the relative importance of net outflows and inflows from each sub-division. However, the extent of bias in the 1966 Sample Census prohibits this: such analysis suggests that for the Region as a whole the number of residents in employment exceeds the numbers employed by nearly half a million. This bias towards understatement of employment is even more pronounced at the national level. Hence we resort to the 1961 Census Workplace Tables and show in Table 6.1 a picture of the absolute numbers involved in the inter-sub-divisional workplace flows in that year. The net gain of Greater London was over 300 thousand persons, and the net loss of the other sub-divisions ranged up to 71 thousand in sub-division OMA (East). The magnitude of net outflows from the OMA was over four times larger than from the OSE, and the volume of net outflow from every OMA sub-division was greater than from each of the OSE sub-divisions.

217. It must be emphasised that at highly disaggregated levels, gross workplace movements form an incredibly complex network, and are particularly difficult to explain because of the way in which they

are influenced by individual preferences for spatial separation of place of work and residence, income levels and occupational structure of the population, and local transport facilities. However at aggregated levels, information on workplace movements tends to demonstrate fairly clearly recognisable patterns. In the South East the nodal position of London is particularly important, and workplace movements into London dominate the picture like a great radial network superimposed upon a whole set of more local movements. So in order to isolate the extent to which net outflows from each sub-division are determined by the extent to which they supply commuters to the GLC area, the gross movements to that area have been calculated. The results are shown in Table 6.2. Looking first of all at this data from the viewpoint of 'donor' sub-divisions an appropriate classification would seem to be as under:

Dependence for employment on Greater London

	More than average	Less than average
Outer Metropolitan Area	(6)(South) (4)(East) (7)(SW)	(5)(SE) (3)(North) (2)(West)
Outer SE Area	(12)(Sussex Coast) (10)(Essex) (11)(Kent)	(9)(Beds-Bucks) (13)(Solent) (Berks-Oxon)

218. This differential sub-divisional pattern of commuting to London is the major determinant of the magnitude of the set workplace ratio in the various sub-divisions. Over 10% of the economically active population in the South East outside Greater London in 1961 was employed in the GLC area, and this figure varied considerably between sub-divisions, ranging between 1% or less in OSE (Berks-Oxon) and (Solent) and over 25% in OMA (South) and (East). This dependence on Greater London for employment is very closely associated with the magnitude of the E/M ratio. The rank correlation between sub-divisions according to the two variables is -0.846, which suggests that these radial movements dominated all other workplace movements across sub-divisional boundaries, and hence are the major factor in the determination of the residential - employment balance in the sub-divisions.

219. Turning now to *changes* in commuting patterns, we pose the questions: to what extent have changes in the dependence on London for employment determined changes in the overall sub-divisional net workplace pattern? How do the sub-divisions fare in terms of the extent to which they have become more dependent on London? Have some become increasingly dependent at a faster rate than others? Tentative answers are suggested by a comparison of Table 6.2 with Table 6.3, which is derived from the 1966 Census Workplace Tables. The number of economically active persons in the South East sub-divisions working in Greater London have generally increased but the rate of increase seems to range between over 25% in sub-divisions (5), (10) and (11) and virtually nothing in sub-divisions (8) and (9). OSE (Solent) and OSE (Sussex Coast) seem to have had a decline. In general the rate of increase in numbers working in Greater London has been similar in the OSE and in the OMA, although, of course in absolute terms, the OMA has been the source of the vast majority of additional commuters. As for the percentage of economically active persons in each area working in the GLC, there seems to have been generally little change in the overall picture. However, it is possible to identify a decline in sub-divisions (3), (4), (6) and (12), and an increase in sub-divisions (2), (5), (10) and (11). What this means is that in the former group the total economically active population has expanded at a faster rate than commuting to Greater London, while in the latter group an increasing proportion of occupied persons is working in Greater London. Looking at these changes from the viewpoint of the recipient sub-division (GLC) a similar pattern emerges. From the information in the final columns of Tables 6.2 and 6.3 we can classify the sub-divisions as under:

Increasing share of persons working in GLC

2. OMA (West)
5. OMA (SE)
10. OSE (Essex)
11. OSE (Kent)

Approximately constant share of persons working in GLC

    7. OMA (SW)
    8. OSE (Berks-Oxon)
    9. OSE (Beds-Bucks)
  13. OSE (Solent)

Declining share of persons working in GLC

    3. OMA (North)
    4. OMA (East)
    6. OMA (South)
  12. OSE (Sussex Coast)

220. It is also interesting to look at similar information on commuting to the *Central* London Area* (as opposed to the Greater London Area). Further analysis of the 1961 and 1966 Workplace Tables reveals the data present in Table 6.4. Just under one half of workplace movements into the GLC from the other sub-divisions terminated in this Central Area in 1966 (and possibly the term commuting is more applicable to these specific movements than to general movements into the Conurbation). In individual sub-divisions this proportion varied between less than 40% in sub-divisions (2) and (3) and over two-thirds in sub-divisions (10), (11), and (12). Obviously in the latter areas, and in the OSE in general, workplace movements to the Conurbation Centre are the prime determinant of net flows of economically active persons.

221. Classifying the sub-divisions according to the proportion of employees in Central London which they contribute and changes in that proportion since 1961, the following picture emerges:

Change in proportion 1951-1961 \\ Proportion of employees in Central London	Over 2.5%	1 - 2.5%	under 1%
Increasing	(4)OMA(East)	(5)OMA(SE) (7)OMA(SW)	(10)OSE(Essex) (11)OSE(Kent)
Stable	(6)OMA(South)	(2)OMA(West) (3)OMA(North)	(8)OSE(Berks-Oxon) (9)OSE(Beds-Bucks) (13)OSE(Solent)
Decreasing			(12)OSE(Sussex Coast)

222. It should be emphasised that still over 80% of employees in the Central London Area live within the GLC boundaries. The actual percentage of employees in the Central area also living there fell from 9.9% in 1961 to 8.6% in 1966 and the proportion living in the remainder of the Conurbation fell very slightly too. Hence the general increase in the proportion coming from the other 12 SE sub-divisions. Nevertheless that proportion remains below 20%.

223. As noted in chapter C.2., the minimisation of workplace movements or at least long-distance commuting movements may be one objective of intra-regional planning. As such the information presented in this chapter has obvious policy recommendations: the continued restriction of employment growth in Greater London coupled with the diversion of such growth primarily to the OMA sub-division. OMA(East), (South) and (SW) would appear to be obvious candidates for such employment growth. However, such policy should be considered carefully with respect to:

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*Roughly an area enclosing the main railway termini

(a) possible conflict with other objectives e.g. diversion of industrial expansion to the OSE sub-divisions in order to minimise labour resource underutilisation or to reduce intra-regional prosperity differentials;

(b) social preferences with respect to workplace movements. Further research is necessary in order to evaluate a policy of minimisation of commuting: very little is known of the costs and benefits of such movements to the individuals concerned.

224. Finally we should note that analysis of workplace movements at the sub-divisional level hides a number of interesting features of workplace movements. It seems to be particularly difficult to examine the determinants of the pattern of workplace movements at such a highly aggregative level. Preliminary research does suggest that even in sub-divisions with a generally high average level of commuting to London, there are areas which are relatively less dependent on London than areas further afield. The heaviest commuting areas seem to form fairly clearly defined belts, such as those out to Margate, Bishop's Stortford and Brighton. So a sub-divisional approach fails to identify some quite important commuter-sources within sub-divisions with a generally low dependence for employment on London. Moreover, it does not allow for adequate description of workplace movements around more local centres of employment, such as Reading, Oxford, Southampton, Watford, Colchester or Chelmsford, most of which do not involve crossing sub-divisional boundaries. It is therefore recommended that further study of workplace movements be based on a finer spatial classification, say Local Authority Area, (and Civil Parishes within the larger rural districts).

225. We conclude this chapter by noting the generally positive correlation between net shopping flows and net workplace movements. Greater London is, of course, the obvious example of an area which has net inflows both of shopping funds and of labour. Also, other areas tend to be relatively self-sufficient in *both* employment and shopping facilities (e.g. sub-divisions 13, 12, 8, 11) or, in neither (e.g. sub-divisions 4 and 6). The correlation is far from perfect, and there are at least two reasons to expect a direct causal relationship:

(a) people usually spend some money during their working day,

(b) retail distribution is a source of employment.

In addition, however, independent variables are likely to have a simultaneous causal effect on both the propensity to be employed and to use retail facilities in the area e.g. the quality of the transport links with superior areas of employment opportunities and retail facilities.

Table 6.1 Comparison of residents in employment and employment
in each of the SE sub-divisions 1961

SE England sub-division	(a) Residents in employment	(b) Employment in the area	Excess (+) or deficiency (-) of (b) over (a)	100(b) (a)
1. Greater London : TOTAL	4,100,200	4,415,300	+315,100	108
2. OMA (West)	362,700	340,100	- 22,600	94
3 OMA (North)	464,900	431,900	- 33,000	93
4. OMA (East)	347,000	275,200	- 71,800	79
5. OMA (SE)	287,300	261,700	- 25,600	91
6. OMA (South)	235,400	181,000	- 54,400	77
7. OMA (SW)	307,600	264,100	- 43,500	86
OMA : TOTAL	2,004,900	1,754,000	-250,900	87
8. OSE (Berks-Oxon)	192,700	198,200	+ 5,500	103
9. OSE (Beds-Bucks)	102,200	94,100	- 8,100	92
10. OSE (Essex)	134,800	124,500	- 10,300	92
11. OSE (Kent)	212,200	199,400	- 12,800	94
12. OSE (Sussex Coast)	333,900	311,400	- 22,500	93
13. OSE (Solent)	591,300	581,700	- 9,600	98
OSE : TOTAL	1,567,000	1,509,200	- 57,800	96
SE ENGLAND : TOTAL	7,672,100	7,678,500	+ 6,400	100

Source: Census of England and Wales 1961, Workplace Tables.

Table 6.2 Dependence on Greater London for employment of the SE sub-divisions 1961

SE England sub-division	(a) number of residents working in Greater London	(a) as a percentage of the economically active population	(a) as a percentage of the total inflow from the SE Region to Greater London
2. OMA (West)	35,600	9.7	9.1
3. OMA (North)	64,000	13.6	16.3
4. OMA (East)	91,100	25.6	23.2
5. OMA (SE)	40,200	13.7	10.2
6. OMA (South)	64,300	26.9	16.4
7. OMA (SW)	60,400	19.4	15.4
OMA : TOTAL	355,600	17.4	90.6
8. OSE (Berks-Oxon)	1,300	0.7	0.3
9. OSE (Beds-Bucks)	1,200	1.2	0.3
10. OSE (Essex)	4,500	3.3	1.1
11. OSE (Kent)	6,600	3.0	1.7
12. OSE (Sussex Coast)	17,500	5.1	4.5
13. OSE (Solent)	6,000	1.0	1.5
OSE : TOTAL	37,100	2.3	9.4
SE ENGLAND (excluding Greater London)	392,700	10.8	100.0

Source: Census of England and Wales 1961, Workplace Tables.

Table 6.3 Dependence on Greater London for employment
of the SE sub-divisions 1966

SE England sub-division	(a) number of residents working in Greater London	(a) as a percentage of the economically active population	(a) as a percentage of the total inflow from the SE Region to Greater London
2. OMA (West)	42,300	9.9	9.7
3. OMA (North)	69,700	13.0	16.0
4. OMA (East)	97,600	23.4	22.5
5. OMA (SE)	51,300	15.5	11.8
6. OMA (South)	65,900	24.4	15.2
7. OMA (SW)	68,100	19.5	15.7
OMA : TOTAL	394,900	17.0	90.9
8. OSE (Berks-Oxon)	1,300	0.6	0.3
9. OSE (Beds-Bucks)	1,400	1.2	0.3
10. OSE (Essex)	6,500	4.1	1.5
11. OSE (Kent)	8,800	3.6	2.0
12. OSE (Sussex Coast)	16,200	4.3	3.7
13. OSE (Solent)	5,600	0.8	1.3
OSE : TOTAL	39,700	2.2	9.1
SE ENGLAND (excluding Greater London)	434,600	10.6	100.0

Source: Census of England and Wales 1966, Workplace Tables.

Table 6.4 Dependence on Central London for employment
of the SE sub-divisions, 1961 and 1966

SE England sub-division	Number of residents employed in Central London, and percentage of total employment in Central London			
	1961		1966	
1. Central London	139,900	(9.9)	111,900	(8.6)
Greater London : remainder	1,057,500	(74.6)	969,200	(74.3)
2. OMA (West)	16,800	(1.2)	16,600	(1.3)
3. OMA (North)	28,100	(2.0)	27,400	(2.1)
4. OMA (East)	44,600	(3.1)	49,900	(3.8)
5. OMA (SE)	22,100	(1.6)	27,200	(2.1)
6. OMA (South)	36,900	(2.6)	34,500	(2.6)
7. OMA (SW)	29,900	(2.1)	29,900	(2.3)
OMA : TOTAL	178,400	(12.6)	185,600	(14.2)
8. OSE (Berks-Oxon)	800	(0.1)	800	(0.1)
9. OSE (Beds-Bucks)	900	(0.1)	800	(0.1)
10. OSE (Essex)	3,000	(0.2)	4,400	(0.3)
11. OSE (Kent)	4,500	(0.3)	6,000	(0.5)
12. OSE (Sussex Coast)	12,700	(0.9)	11,100	(0.8)
13. OSE (Solent)	3,600	(0.3)	3,300	(0.3)
OSE : TOTAL	25,400	(1.8)	26,300	(2.0)
Other:	16,900	(1.2)	11,100	(0.9)
TOTAL:	1,418,200	(100)	1,304,200	(100)

Source: Census of England and Wales, 1961 and 1966, Workplace Tables.

100

CHAPTER 7

UNEMPLOYMENT AND THE DEMAND FOR LABOUR

226. Clearly one major intra-regional planning objective must be to secure full utilisation of all labour resources. How have the sub-divisions compared in the extent to which they have utilised their potential manpower resources in the past? If we consider the total potential workforce to be the total population aged over 15, under utilisation can result from:

    (i) persons aged over 15 continuing their full-time education,

    (ii) persons aged over 15 being voluntarily unemployed: the two main categories here are (a) those above the normal retiring age and not seeking work and (b) those of normal working age not seeking work because of household and family commitments (usually females) or other reasons (private incomes, unemployment and national assistance benefits in excess of normal working wage, and so on),

    (iii) persons aged over 15 being involuntarily unemployed.

Under utilisation of type (ii) (a) affects the ratio W/P, type (ii) (b) affects A/W and type (iii) affects M/A. However, further examination of the incidence of these types of under utilisation and the causes of differential incidence in the SE sub-divisions is hampered by lack of statistical information. The published volumes of the 1966 Census only give details on the reasons for persons not being actually in employment for three major areas of SE England. This information is shown in Table 7.1. There do not seem to be major variations in the proportion of the population over 15 years who are receiving full-time education, but there are large differences in the proportions of retired persons and other economically inactive. The OSE group fares very badly here, having over 40% of the population over 15 in these categories, compared with below 30% in Greater London. The OMA occupies an intermediate position and actually has a lower proportion of retired persons than Greater London.* However the level of unemployment in Greater London was rather higher, although not so high as that of the OSE. The outcome of all this is that only 55% of the population over 15 in the OSE sub-division was actually in employment compared with some 65% of the population over 15 in Greater London. The OMA held an intermediate position with a proportion approximately equal to the average for the whole Region. These ratios are strongly affected by differences in the age structure of the population. The higher proportion of old persons in the OSE is probably a major cause of the low level of economic activity. Certainly this accounts for the high percentage of retired persons, and also contributes to the higher proportion of 'other inactive' since these include old persons, particularly females, who are not technically retired since they were not in regular employment before reaching pensionable age. We tried to abstract from these age structure effects, in the measure of economic activity presented earlier: A/W. This has certain defects but there is no other measure of economic participation which can be derived for the sub-divisions.

227. What determines the regional variations in the extent to which the population aged 15-65 (15-59 in the case of women) is gainfully employed? Broadly an initial classification can be made into sub-divisional variations in the extent to which people of working age offer themselves for employment (A/W) and the extent to which those offering themselves for employment do actually secure jobs (M/A). Inspection of Table 7.1 clearly reveals the relative importance of the former.

228. Unfortunately, it is very difficult to make a more detailed analysis of the reasons for variations in activity rates. The Census of England and Wales gives no information on the composition of the economically inactive for individual Local Authority areas, such as can be aggregated for the thirteen sub-divisions. Nevertheless it is possible to examine the *overall* participation rates separately for males and females and this clearly demonstrates the relative importance of variations in the latter. The rank correlation between

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    *   The distinction between 'retired' and 'other' is not really so clear in as much as women over the retiring age will not be classified as retired unless they were in employment previously. Hence it is improper to take the 'retired' figures as indicative of the number of persons economically inactive because of being over the working age and the 'other' figure as indicative of those of normal working age who choose to be economically inactive for other reasons.

female participation ratios of the sub-divisions and overall participation rates is very high (+0.850). So one clear reason for variations between sub-divisions in the extent of resource under utilisation is differences in female activity rates.

229. Well, what determines the magnitude of these rates and hence the different degree of female participation in economic activities in the 13 sub-divisions? An analysis by J. S. Wabe (Workforce Participation in the London Metropolitan Area - Warwick Economic Research Papers No. 2) of activity rates in the London Area suggests that in 1961 the most important explanatory variables were the volume of local employment opportunities, the time and expense of travelling to Central London, the number of young children and social class. Most of these variables are exogenous in as much as they cannot easily be influenced by regional planning policy, but the volume of employment opportunities is not of this kind. If female economic participation is low because of a lack of jobs locally, the obvious policy is to encourage the development of female employing industry. This would seem to apply to sub-divisions (8) (10) and (5), but it is important to study activity rates *within* each sub-division, Wabe, for example, found that even within the GLC sub-division, which has outstandingly the highest level of female economic activity, there seemed to be a case for encouraging the growth of demand for female labour in certain areas to the east of the Conurbation. Clearly further study of the variables influencing activity rates in the SE sub-divisions is desirable.

230. The minimisation of unemployment levels is usually an even more specific planning objective than the maximisation of activity rates but here again, reliance on Census information for this purpose is quite inadequate. It is possible to obtain only three post-war observations, for 1951, 1961 and 1966, and since these are all years of unusually very low unemployment, generalisation is not really satisfactory. However there is an alternative source: the use of Employment Exchange data grouped into rough equivalents of the sub-divisions. The D.E.P. have been able to supply such information for June of each year since 1951 and, although these statistics are not strictly comparable with the Census data, there is no reason to suppose that they are inferior as a measure of the *relative* state of the labour market in different areas. Comparison of the two sets of information reveals that the correlation between the ordering of sub-divisions according to the percentage of persons unemployed is very close (being +0.91 in 1951 and +0.88 in 1961). However, the Census figures indicate very much higher *levels* of unemployment. (For possible causes of this difference see 'Census of England and Wales 1961 Industry Tables Appendix A p.XXIV').

231. At the outset it should be pointed out that the D.E.P. data has a number of deficiencies, of which the following are the most important:

(i) The local figures of numbers of total employees do not include Civil Servants without National Insurance Cards, nor 'unlocated' employees which are allocated to the Greater London figures only.

(ii) All the data on numbers unemployed, unfilled vacancies and total persons employed, relate to the situation as it existed in *June* each year,* rather than to the average for the whole year. Persons temporarily stopped are included with the unemployed throughout the exercise; since the figures for unemployment are 'spot' rather than annual average figures the logic of removing the temporarily stopped is very doubtful.

(iii) Due to (a) the lack of comparability between Employment Exchange Areas and Local Authority Areas (b) the change in the definition of Greater London, a number of small differences exist between the sub-divisions as defined in this exercise and as defined in other sections of this sub-divisional study. A special analysis revealed the quantitative importance of this to be negligible.

(iv) Employed persons are classified according to the Employment Exchange Area in which they work: unemployed persons principally according to place of residence: some distortion is thereby introduced in comparing net workplace outflow areas with net workplace inflow areas.

(v) The statistics on numbers unemployed are subject to deficiencies as a measure of the surplus supply of labour. It is conceivable that there may be persons registered as unemployed who are not seeking work, while a low *activity rate* may indicate a larger *potential* labour reserve than above average levels of unemployment. In particular one would expect the DEP statistics to understate actual female unemployment.

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* Average figures for the year are available for both unfilled vacancies and unemployment but the June figures are used to match the employment figures which are available for that month only.

(vi) A cautionery note is advisable regarding the necessity of not placing too strong emphasis on small differences in the results presented in this chapter. All data have been rounded to some extent.

232. Given these limitations, this chapter sets out to provide answers to the following questions:

(1) Has there been much variation between the sub-divisions in the *average level of unemployment* over the period 1951-66? Which sub-divisions have fared worst in this respect?

(2) Has the variation between sub-divisions in the average level of unemployment been *increasing or decreasing* over the period 1951-66? In which sub-divisions has unemployment been tending to increase or decrease?

(3) How has the pattern of upswings and downswings in the level of unemployment varied between the sub-divisions?

(a) Has the *timing of upswings and downswings* in the level of unemployment been the same in all sub-divisions, or can one identify sub-divisions which tend to 'lead' or 'lag'?

(b) Has the extent of *variability in the level of unemployment* been the same in all sub-divisions, or can one identify sub-divisions which tend to have upswings and downswings of more than average magnitude?

(c) Has the *minimum level of unemployment* been comparable in all sub-divisions, or are there particular areas having some form of 'hard-core' unemployment?

(4) What are the *reasons* for variations between sub-divisions in the level and variability of unemployment? To what extent can the spatial pattern of unemployment be explained by the pattern for demand for labour as indicated by records of unfilled vacancies?

(5) What are the reasons for variations between sub-divisions in the average level of demand for labour?

(6) Is it possible to calculate a single index of the *extent of excess demand or supply of labour?*

(a) Is there much variability between sub-divisions in terms of that index, and has the extent of that variability been increasing or decreasing?

(b) What is the ranking of sub-divisions in terms of their average index, and variability around that average? Is the index rising or falling in any individual sub-division?

(7) What are the conclusions regarding the efficiency of resource utilisation and allocation within the region as a whole?

We consider each question in turn.

Question 1

233. The relevant information here is presented in Table 7.2 where the absolute numbers of unemployed persons are related to the size of the total active labour force (employed plus unemployed). The numbers unemployed in June are expressed as a percentage of the labour force *in the same year.* In the final horizontal rows of this table are shown the standard deviation and coefficient of variation of the percentage unemployed in each sub-division. These are measures of the variability between sub-divisions in the level of unemployment in each year.

234. (The *standard deviation* is the square root of the mean value of the squares of all deviations from the mean. Although more complicated than other measures of dispersion, it is usually considered the best single measure of 'spread' in a set of figures. The *coefficient of variation,* or relative standard deviation, is the standard deviation expressed as a percentage of the mean value of the distribution).

235. Finally, in *Table 7.3.* the *time series for each sub-division* is described by four statistics: the mean, the standard deviation, the coefficient of variation and the minimum level of the variable in any one year. Also diagrammatic representation of the time series is presented in Appendix 7.A.

Although the level of unemployment in the sub-divisions has been generally low by national standards, *there have been significant variations between the sub-divisions in the average level of unemployment.* The coefficient of variation between sub-divisions was as high as 57 in 1960 and 1966 and

averaged 50, i.e. the average variation between sub-divisions in the percentage of persons unemployed was about half the average percentage of unemployment in the Region as a whole. This variation between sub-divisions is further emphasised by the following diagram, which also demonstrates that the variation is *less* than that between the 11 Standard Regions of the United Kingdom in that year (1966).

236. The level of unemployment has invariably been highest in the OSE, and rather lower in the OMA than in Greater London. The most useful classification of the individual sub-divisions is as follows:

Diagram 7.1

Average level of Unemployment 1951-1956		
Relatively high *(over 1.0%)*	*Medium* *(0.8-1.0%)*	*Relatively low* *(under 0.8%)*
12. OSE (Sussex Coast) 11. OSE (Kent) 13. OSE (Solent) 4. OMA (East)	5. OMA (SE) 10. OSE (Essex) 1. Greater London	6. OMA (South) 2. OMA (West) 7. OMA (SW) 3. OMA (North) 9. OSE (Beds-Bucks) 8. OSE (Berks-Oxon)

Question 2

237. A regression line fitted by the method of least squares to the time series of the coefficient of variation (as shown in the final row of Table 7.2) shows neither an upward nor downward trend. The implication is that *variations between sub-divisions in the average level of unemployment have not been either increasing or decreasing over the period* 1951-66.

238. However, individual sub-divisions do show slight upward and downward trends in the level of unemployment. Calculation of least squares regression coefficients demonstrates that sub-divisions (9), (10) and (11) have an upward trend relative to the Region as a whole while sub-divisions (5) and (13) have slight downward trends. But simple inspection of Appendix 7.A. emphasises that these trends are really rather insignificant: the striking feature is the *comparability between sub-divisions* in both (a) *the absence of any marked upward or downward trends,* and (b) *the stability of the relationship between the sub-divisions over the whole period.* The correlation between the sub-divisions ranked according to the percentage of persons unemployed is of the order of +0.8 to +0.9 in every pair of years.

Question 3(a)

239. The *timing of the upswings and downswings in all the sub-divisions is very similar,* as a glance at Appendix 7.A will show. (The peak unemployment years are 1952, 1959 and 1963, with troughs in 1951, 1955/56, 1961 and 1966). Furthermore it is not possible to identify sub-divisions which either lead or lag behind the Region as a whole. This does not deny that some areas are more quickly responsive than others to economic changes, but rather that the difference is not so much as twelve months.

Question 3(b)

240. What is the extent of variation between sub-divisions in the *magnitude of cyclical fluctuations* in the percentage of persons unemployed? The most obvious measure is the range between the highest and lowest annual observations. This varies between 0.3 per cent in sub-division (8) and 1.2 per cent in sub-divisions (4) and (13), but this is not an ideal measure because it only takes account of 2 out of the 16 observations in each case. The standard deviation is a better measure, in that it measures the absolute magnitude of the *average* deviation from the mean value. However, one would expect that the sub-divisions with the highest mean unemployment would also feature the largest *absolute* variations, and this is in

Figure 7.1
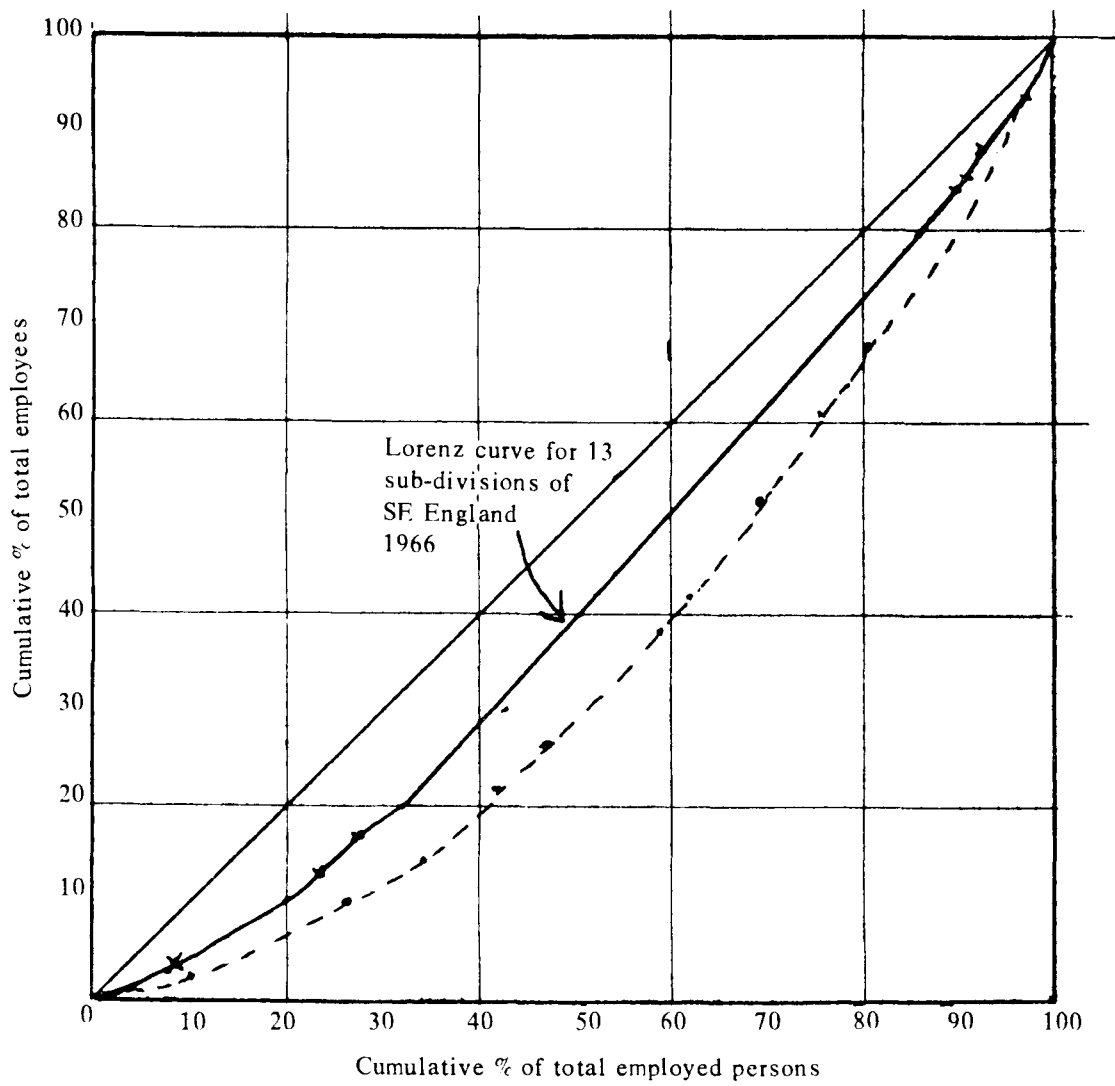
Lorenz curve for sub-divisions 1966

fact the case here. For this reason, the coefficient of variation may be preferred, in that this measures instead the *relative* magnitude of fluctuations.

Diagram 7.2

Coefficient of variation in percentage unemployed 1951-66		
Relatively high *(over 27)*	*Medium* *(23-27)*	*Relatively low* *(under 23)*
9. OSE (Beds-Bucks) 2. OMA (West) 3. OMA (North) 6. OMA (South) 1. Greater London	10. OSE (Essex) 13. OSE (Solent) 4. OMA (East)	8. OSE (Berks-Oxon) 7. OMA (SW) 5. OMA (SE) 12. OSE (Sussex Coast) 11. OSE (Kent)

241. The most obvious feature of these results is the *generally low relative fluctuation;* the coefficient of variation is, on average, only one quarter of the average level of unemployment. Of course, some sub-divisions have more relative fluctuation than others, but even in the most extreme case, that of sub-division (9) the coefficient of variation is only just over one-third of the average level of unemployment.

242. Finally, it is interesting to note that comparison of Diagrams 7.1 and 7.2 indicates that the relative size of fluctuations tends to be lower in those sub-divisions with a comparatively high average level of unemployment, and higher in those with a comparatively low average level.

Question 3(c)

243. This last observation alone would tend to suggest that the sub-divisions differ from each other in the extent of 'hard-core' unemployment: comparability between sub-divisions in the magnitude of the 'hard-core' would be indicated by a *positive* association between the size of the coefficient of variation and the average level of unemployment. This is further emphasised by the final column of Table 7.3 which shows the lowest percentage of persons unemployed in any one year. The variation is between 0.3 per cent in sub-divisions (3), (8) and (9) and 1.3 per cent in sub-division (12).

The following classification seems appropriate:

Diagram 7.3

Lowest percentage unemployed in any one year 1951-66		
Below 0.5%	*0.5-1.0%*	*Over 1%*
3. OMA (North) 9. OSE (Beds-Bucks) 8. OSE (Berks-Oxon) 2. OMA (West) 6. OMA (South)	1. Greater London 7. OMA (SW) 10. OSE (Essex) 5. OMA (SE) 4. OMA (East)	13. OSE (Solent) 11. OSE (Kent) 12. OSE (Sussex Coast)

244. Comparison with Diagram 7.1 shows clearly that the relationship between the average and minimum levels of unemployment is very close (Rank correlation coefficient +0.963).

245. This conclusion is of some importance, since it suggests that differences between sub-divisions in the extent of unemployment are related more to 'hard-core' problems than problems of *fluctuating* demand for labour.

246. Given also that the size of relative fluctuations is generally a fairly low proportion of the average level of unemployment, the emphasis in the following sections of this paper is rather more on explaining differences between the sub-divisions in the average level of unemployment than on explaining differences in the time pattern of unemployment in each sub-division. *It is not in the nature of the fluctuations themselves, but in the average level around which the fluctuations occur that the major differences between the sub-divisions exist.*

Question 4

The determinants of sub-divisional variations in the extent of unemployment

247. Various hypotheses can be postulated to explain the differences between sub-divisions in the average level of unemployment. We examine four:

1. That the differences result from spatial differences in the pressure of aggregate demand for labour.

2. That the differences arise from spatial differences in the structure of that demand.

3. That the differences are related to problems of geographical mobility.

4. That the differences are related to spatial variation in non-economic factors, such as the extent of semi-retirement and concentration of 'unemployables'.

Hypothesis 1

248. To test whether the percentage of persons unemployed (U/T) is related to *the, pressure of aggregate demand for labour* we shall make use of the concept of the *level of job opportunities*. This is defined as the number of unfilled vacancies expressed as a percentage of the number of insured employees (V/T)*. The extent to which U/T and V/T are inversely related is indicative of the extent to which they are both similarly affected by the pressure of aggregate demand for labour. An imperfect correlation would suggest that U/T is also influenced by other factors.

249. By itself V/T is not a perfect indicator of the pressure of aggregate demand for labour, since changes in the latter may leave V/T unaffected and express themselves only in a change in U/T. However, in an area of consistently high demand for labour and comparatively low unemployment, changes in the demand for labour are most unlikely to leave V/T unchanged. Hence the use of V/T as a reflection of differences in the pressure of aggregate demand for labour, although not generally justifiable, is probably not unreasonable in this Region.

250. The hypothesis suggests that one would expect unemployment to be highest in those *sub-divisions* where the proportion of vacancies to total numbers employed is lowest; and that unemployment will be highest in those *years* when the proportion of vacancies to total numbers employed is lowest. The underlying proposition is that V/T and U/T will be inversely related because, when the ratio of vacancies to unemployment (V/T ÷ U/T) is low, it is more likely that occupational structure of those vacancies will cater for the occupational needs of the unemployed.

251. Detailed information on vacancy rates is shown on Table 7.4 and summarised in Table 7.5. The most general empirical test of the inverse relationship is to use all the available observations, both cross-sectional and time-series. Plotting on a scatter diagram the whole 16 x 13 matrix of data pairs in Tables 7.2 and 7.4 demonstrates a fairly inconclusive relationship between the two variables. The scatter is quite large, and the correlation coefficient, although of the expected sign, is low. However, closer

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* It should be emphasised that DEP unfilled vacancies statistics have a number of deficiencies as a measure of the real number of job opportunities. Some employers do not notify their vacancies to Employment Exchanges and prefer to rely on other methods for finding the labour they require, while others have a 'standing order' at Employment Exchanges which are not included in the vacancies statistics unless the employer and Local Office agree a realistic estimate of labour requirements. Also the extent to which vacancies are notified to Employment Exchanges varies for different industries e.g. the sea transport industry has special arrangements for filling vacancies and those unfilled are not notified to Employment Exchanges. Similarly in some industries e.g. printing, employment is closely controlled by employers and unions and unfilled vacancies are not notified. Finally there are certain discontinuities in the vacancies statistics, particularly in relation to the period 1952-1956 because of the Notification of Vacancies Order, but these seem to be of relatively minor quantitative importance.

inspection reveals systematic grouping in the residuals from the regression equation of U/T on V/T: i.e. individual sub-divisions tend to occupy different areas of the scatter. To examine this further the data is disaggregated, both into time series data for each sub-division and cross-sectional data for each year.

(a) *Cross-sectional.* For each year it is possible to examine the relationship between the ranking of sub-divisions according to the magnitude of U/T and the ranking according to the magnitude of V/T. It does appear that those sub-divisions with the highest level of unemployment are usually those with the lowest level of job opportunities. The rank correlation between the sub-divisions according to *average* levels of unemployment and vacancies is -0.645, indicative of a clear, but not fully explanatory relationship. The sub-divisions can be classified as follows:

Diagram 7.4

average level of job opportunities / average extent of unemployment	Relatively high V/T>2.5%	Medium	Relatively low V/T<2.0%
Relatively high U/T>1.0%		12. OSE (Sussex Coast)	4. OMA (East) 11. OSE (Kent) 13. OSE (Solent)
Medium		10. OSE (Essex)	1. Greater London 5. OMA (SE)
Relatively low U/T<0.8%	2. OMA (West) 3. OMA (North) 6. OMA (South) 7. OMA (SW) 9. OSE (Beds-Bucks)	8. OSE (Berks-Oxon)	

252. A perfect correlation seems to be spoiled by sub-divisions (1),(5),(8) falling in categories below a diagonal sloping upwards to the right in Diagram 7.5 and sub-division (12) falling in a category above that diagonal.

(b) *Time series.* For each sub-division an examination can be made of how U/T changes with V/T over the time period 1951-66. Scatter diagrams showing these relationships for the three major sub-divisions are shown in Appendix 7.B. A fairly clear relationship exists *within each area.* Appendix 7.B also demonstrates how differently U/T reacts to changes in V/T in each of the sub-divisions. A given proportion of job opportunities in Greater London tends to be associated with less unemployment than in the OMA which, in turn has less unemployment at a given level of job opportunities than has the OSE. As we shall see, this is an important conclusion.

253. Within the OMA the sub-divisions seem to have similar U/T: V/T relationships, although they have not all experienced the same levels of unemployment. Sub-division (4) seems to have rather more unemployment than the volume of job opportunities would suggest, and there are perhaps some differences between the sub-divisions in the minimum level of unemployment given a very high pressure of demand. But such differences are minor compared with those which exist within the OSE. Sub-divisions (8) and (9) are obviously of different character to the remainder, sub-division (8) in particular having a very 'flat' relationship (indicating very little response in unemployment to changes in job opportunities, even at comparatively

low levels of pressure of demand). Also sub-divisions (12), and, to a lesser extent, (11) and (13), are conspicuous in having a higher level of unemployment than the level of unfilled vacancies would normally suggest.

254. The general conclusions of this section are as follows:

1. *Changes in the level of unemployment in each sub-division* are fairly closely associated with changes in the volume of job opportunities 1951-66.

2. *Differences between sub-divisions in the average level of unemployment* are fairly closely associated with the sub-divisional differentials in the average level of job opportunities.

3. *A close association is to be expected in both the above cases: what is more interesting is the extent to which the association is not perfect.* By isolating the sub-divisions in which the extent of unemployment is not exactly what the pressure of demand for labour would suggest, we narrow the fiela of further research into the determinants of the level of unemployment.

4. The areas with *positive residuals* from the general regression equation of U/T on V/T (or a higher level of unemployment than the volume of job opportunities would suggest) are the OSE in general, in particular sub-division (12), and to a lesser extent, (11) and (13). The areas with *negative residuals* (or a lower level of unemployment than the volume of job opportunities would suggest) are Greater London and, to a lesser extent, sub-divisions (5) and (8). The other sub-divisions (2, 3, 6, 7, 9, 10) seem to require little further explanation of the volume of unemployment: it is a direct reflection of the generally high pressure of demand.

Hypothesis 2

255. The suggestion here is that, given similar levels of aggregate demand for labour, unemployment will be higher in those areas where the sex, age and occupational structure of the demand for labour does not coincide with the sex, age and occupation structure of the labour force.

256. Comprehensive statistics on the age and occupational structure of persons unemployed and vacancies unfilled are not available, but data exists on the *sex structure of vacancies and persons unemployed*, from which can be derived an index of imbalance between the sex structure of vacancies and persons unemployed. The following conclusions emerge:

1. In general, the V/U rate is higher for females than males*, and this is more so in recent years than in earlier years.

2. *The imbalance between the sex-structure of vacancies and persons unemployed varies considerably between the sub-divisions and the ranking of sub-divisions according to the extent of this imbalance is remarkably constant over time.*

3. The imbalance has been generally greatest in Greater London and least in the OMA, but within the OSE lie the sub-divisions with the greatest imbalance, (11) and, more especially, (12). Examination of these latter two sub-divisions demonstrates that the V/U rate has been below unity for males even in boom years such as 1951, 1956 and 1966.

257. This is therefore probably a partial explanation of why the aggregate level of job opportunities does not adequately explain the level of unemployment in these sub-divisions. Certainly the aggregate vacancies and unemployment statistics for sub-division (12) hide the fact that the pressure of demand is heavily biased towards females with the result that male unemployment is relatively high.

Hypothesis 3

258. A cause of higher than average unemployment may be spatial separation from large centres offering a diversity of employment opportunities. Given that geographical immobility may exist, this hypothesis is *a priori* plausible, but it is rather difficult to test empirically.

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* Actual unemployment among females is higher than the recorded figures because many married women opt out of the National Insurance Scheme.

259. One method is to correlate the sub-divisions according to (a) the percentage unemployed (b) an index of urbanisation (see chapter 3). The result for 1961 is not significant, nor are the sub-divisions with a positive residual from the regression of U/T on V/T (e.g. 12, 11 and 13) the least highly urbanised. However, *the extent of urbanisation may well be the main reason for the negative residual in the case of 1. Greater London.* Ease of access to a variety of employment opportunities is certainly greatest in this sub-division. Extending this argument rather further, one might expect that unemployment, given the level of local job vacancies, would be lower in sub-divisions showing a heavy workplace inter-relationship with Greater London. This is not the case, and sub-division (12) which has the largest positive residual from the regression of U/T on V/T is actually the *most* dependent for employment on London of all the OSE sub-divisions.

Hypothesis 4

260. Differences between the sub-divisions in the level of unemployment, which cannot be explained by (1) the level of aggregate demand for labour, (2) the structure of demand for labour, (3) immobility of labour, may well be due to *non-economic* causes. For example, it may be postulated that the positive residuals in the South Coast sub-divisions are due to the numbers of older people not easy to place in employment, some of whom may be 'semi-retired' although perhaps willing to work if suitable jobs can be found. Also there may be spatial concentrations of persons registered as unemployed but unlikely to obtain work for personal reasons (of which age is probably most important but also including physical disability, attitude to work, etc.). Thus, the 'Strategy for the South East' suggests that: 'the existence of a labour reserve in these places (South Coast towns) is more apparent than real'.

261. But the important question is '*how much* of the variation between sub-divisions in the level of unemployment is due to such phenomena?' In an attempt to estimate the relative importance of 'unemployables' in the unemployed we make use of the results of a special survey of the characteristics of the unemployed in 1964 (see Ministry of Labour Gazette, April 1966). Unemployed persons were classified as:

(a) likely to get work without difficulty;

(b) likely to find difficulty in getting work because of lack of local opportunities or because present qualifications, experience or skill are not acceptable to employers;

(c) likely to find difficulty in getting work for personal reasons, e.g. age, physical or mental condition, attitude to work, etc.

262. This third group could be regarded as consisting of 'problem unemployed', and hence not forming part of the labour reserve. For the United Kingdom as a whole 56.7% of the total numbers registered as unemployed fall in this group. It is not possible to isolate from the published statistics a comparable figure for the SE Region, but for the SE Region PLUS the Eastern region 57.0% of the registered unemployed could be regarded as unemployables.*

263. The precise significance of these figures is dubious since they are compiled from individual assessments made at Local DEP Offices, but broad implications are obvious: some attempt must be made to adjust the figures on unemployment in the sub-divisions so that they reflect the real level of excess labour supply.

264. Ideally, one should reaggregate the basic statistics of the 1964 survey for each sub-division. However, this is not feasible because of the magnitude of effort required in processing the individual returns. The two alternatives are:

(1) To apply the regional average figure to all sub-divisions i.e. to assume that the real labour reserve is some 43 per cent of the total registered unemployed in each sub-division.

(2) To make a special analysis of DEP statistics on age and duration of unemployed in order to isolate for each sub-division an estimate of the number of unemployables.

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* This group is not regarded as unemployable by the DEP and should only be considered as such in calculations of a labour reserve.

265. The former approach is dubious since there may be important variations between the sub-divisions in the proportion of registered unemployed who are unemployable. We know, for example, that the age structure of the population varies considerably between sub-divisions, and so the proportion of persons likely to find difficulty in obtaining work because of their age is likely to show marked differences.

266. The latter approach is preferred. A special exercise has been carried out for July 1966, four steps having been taken to derive a guide to the real labour reserve from the statistics on total registered unemployed.

267. First, the numbers temporarily stopped (U_{ts}) have been removed from the total registered unemployed (U_r). The logic of their removal is uncertain since the statistics are all 'spot' observations rather than annual averages, but it does seem reasonable to suggest that persons temporarily stopped do not form part of the general labour reserve. If they are shortly to return to a particular job they can be regarded as 'unemployable' as far as other firms are concerned.

268. Secondly, an attempt has been made to isolate the numbers of persons in each sub-division registered as unemployed but unlikely to obtain work because of age. One might define all unemployed persons above a certain age as falling in this category, but we have made a more cautious estimate in specifying this group as consisting of all persons aged over 55 years and unemployed for more than six months on 11.7.66 (U_a). There may be persons outside this category who are unlikely to find employment because of their age but there are probably few persons within the category who are likely to find work whatever the state of the labour market. Table 7:8 shows that for the region as a whole 15.4% of persons registered as unemployed are classified in this group, and for individual sub-divisions the figure varies between 7.3% and 37.0%. The differences between sub-divisions are broadly as expected, the highest proportions being in those areas with an older age structure of population and a known concentration of 'occupational pensioners', especially sub-division (12) (Sussex Coast).

269. This method probably understates the numbers really falling in this category. The 1964 survey found that 24.6% of persons registered as unemployed in the total SE and Eastern Regions were unlikely to obtain work because of age, while our method produces a corresponding overall figure of only 15.4% for the SE Region. Also we have not isolated many (if any) of the persons likely to find difficulty in obtaining work on other personal grounds. There is no obvious way of doing this but a method may be used which, although generally unacceptable is perhaps not too dubious in a region such as this with a fairly consistent level of excess demand for labour. This third step is to define as unemployable all other persons (including juveniles) who have been unemployed for more than six months (U_p). Every one of the sub-divisions had a positive excess of total registered unfilled vacancies over total registered unemployed in both 1965 and 1966, and so it may be presumed that most persons out of work in June 1966 and unemployed for more than the previous 26 weeks were in the unemployable category.

270. The numbers in each sub-division isolated in this way are also shown in Table 7.8. For the Region as a whole this category only accounts for 6.5% of the total registered unemployed, and in no sub-division is the figure above 10 per cent. The 1964 Survey indicated that the proportion of registered unemployed unlikely to find work for personal reasons other than age was 32.5%. So, once again the method used in this exercise almost certainly understates the number of persons who can be regarded as 'unemployable' for these reasons. For the SE Region as a whole, the proportion of registered unemployed who can be isolated by the above methods as temporarily stopped, or unemployed for more than half a year amounts to 22.9%, which is less than half the proportion isolated in the 1964 Survey as unlikely to obtain work on personal grounds.

271. In order to reconcile our results with those of the 1964 Survey, we make the final step of subtracting 45% of the remaining registered unemployed, in each sub-division (U_o). This figure of 45% is selected simply because it produces the correct proportion of unemployables to unemployed in the Region as a whole: about 57%. These people are assumed to be unemployable because of personal characteristics, but they have not been 'picked-up' in the previous analysis because they have not been out of work for more than 26 weeks. In the absence of further information it must be assumed that this proportion is the same in each sub-division and is not related to the number of unemployables identified by the previous examination of duration of unemployment. This is the reason for applying the same 45% to all sub-divisions, and for applying the proportions to the total unemployed MINUS those unemployables already identified rather than simply to the total unemployed in each sub-division.

272. The numbers of registered unemployed remaining after all these adjustments have been made (U_x) is shown in Table 7.8. Even having made the last step of reducing all the figures by 45% the estimates of the proportion of unemployables in the registered unemployed are probably not excessive. Unemployment was generally higher in 1964 than 1966 and one would normally expect the proportion of unemployables in the registered unemployed to be higher in boom years. The 1964 Survey showed that 43.0% of the registered unemployed in the SE and Eastern Regions could be regarded as actual labour reserves, so our regional average of 42.4% for 1966 is probably about right, or even a little high.

(If 57% of the registered unemployed in SE plus East Anglia in 1964 were unemployable, this represents some 41,500 persons: if the 1966 unemployment register included this *number* of unemployables, the proportion of unemployables in the unemployed would have risen to over 60%, i.e. U_x as a percentage of $U_r < 40\%$.)

273. Also shown in Table 7.8 is the *proportion* of total registered unemployed remaining in each sub-division in 1966 after all the above adjustments have been made $(100\ U_x/U_r)$. Low figures, indicating above average proportions of unemployables in the registered unemployed are found in the OSE in general, and in sub-divisions (12), (6), (9) and (10) in particular. The proportion of actual surplus labour to registered unemployed is low in sub-divisions (10) and (12) due to the concentration of old persons and in (9) because of an unusually high number of temporarily stopped. Sub-divisions (4), (11) and (13), also have generally high proportions of unemployables, chiefly due to the concentration of older persons. We may conclude, therefore, that previous statements about unemployment in these areas have exaggerated the problem. Sub-division (1), the GLC area is at the opposite extreme, with the lowest proportion of unemployables, mainly because of the absence of older unemployed persons.

274. The final column of Table 7.8 relates these adjusted figures on unemployment in mid 1966 to total employees in that year $(100\ U_x/T)$. This percentage is generally very low, and certainly only significant in sub-divisions (11), (12), (13) and (4). It is interesting to compare these levels of unemployment with those from the previous analysis of total registered unemployed $(100\ U_r/T)$. The rank correlation between sub-divisions is very high (+0.951) indicating little change in the ordering according to percentage unemployed. The most notable change is that sub-division (11) takes over from (12) as the area with the greatest relative labour reserve, presumably because of its lower concentration of semi-retired persons. The other interesting comparison is in terms of the variability around the regional average of the level of unemployment in the 13 sub-divisions. The coefficient of variation between sub-divisions in the level of unemployment is rather lower in the case of the 'adjusted' figures than in the case of the figures on total registered unemployed. This reflects the fact that the sub-divisions with the highest total registered unemployed have, in general, the higher proportion of unemployables, especially sub-divisions (11), (12) and (13). Removing the unemployables thereby serves to reduce the apparent differences between sub-divisions in the level of real unemployment. The magnitude of this reduction depends upon the measure chosen, the range between the highest and the lowest observations falling from 1.0% to 0.4% while the standard deviation of of the cross-sectional series of 13 observations falls from 0.37 to 0.13. It would seem reasonable to suggest that over one half of the sub-divisional variations in unemployment result from the spatial concentration of unemployables.

275. Nevertheless, intra-regional differences in unemployment remain. OMA (East) and the OSE sub-divisions in Kent, Essex and Hants are still above the others, OSE (Kent) having revealed unemployment at nearly double the regional average.

276. However, before we can say that an actual reserve of labour exists in these places, it is useful to make a further subtraction: the *frictionally unemployed.* These are persons 'between jobs' in the sense that, although actually registered as unemployed, they are likely to find employment in similar jobs with relatively little difficulty. Direct estimates of the numbers involved are not available, but a possible approximation is to define as frictionally unemployed all persons on the unemployment register for less than four weeks. More specifically, one should consider only a certain proportion of such persons as frictionally unemployed, since some of them are people destined to be on the register for a long period. According to some recent research undertaken by DEP*, the chances of a new registrant remaining

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* R. F. Fowler, 'Duration of Unemployment on the Register of Wholly Unemployed', Studies in Official Statistics, Research Series No. 1. HMSO, 1968.

unemployed for more than four weeks are much less than even (1961-5), 68% leaving the register within a month (74% in the London and S. Eastern Region) and the chances of a person on the register for three weeks being on it for at least one more are still above 20%. Using these figures as a general guide, we define as an estimate of the frictionally unemployed 50% of persons registered for less than four weeks at a given date (11.7.66). Subtracting these from U_x (the registered unemployed minus temporarily stopped and estimated unemployables) we obtain an indication of which sub-divisions had in 1966 a pool of unemployed labour. A figure of more than 500 persons is found only for five sub-divisions (1, 4, 11, 12 and 13) and the percentage level is hardly significant in Greater London. There would seem to be no significant labour reserve in any of the other sub-divisions, either in terms of absolute numbers or in terms of the relative magnitude of the unemployed. Thus by removing the frictionally unemployed we narrow down even more precisely the number of areas likely to benefit generally from policy to encourage the growth of employment. However, any such conclusions about the location of labour reserves within the Region must explicitly recognise the following limitations to the foregoing analysis:

(1) The identification of unemployables and frictional unemployment is based on estimation procedures which rely heavily upon information on the duration of registered unemployment.

(2) The analysis refers to one single year (1966) when the general level of unemployment was considerably lower than at present. One would suppose that labour reserves are now more wide-spread within the region, although not, of course, evenly dispersed. The interesting question is whether the extent of dispersion becomes greater or smaller as the general level of unemployment rises.

(3) The analysis is based on the implicit assertion that the sub-divisions form integrated labour markets. This may not be so, especially in the larger sub-divisions, so pockets of unemployment may persist even though there is no general excess supply of labour in the sub-division as a whole. Preliminary research based on Employment Exchange areas suggests that intra sub-division varia-tions in unemployment levels are as important as inter-sub-divisional variations. In particular, it seems that in the Essex sub-divisions (4 and 10) the above average unemployment levels are almost wholly due to high registered unemployment in the coastal areas (around Southend and Clacton - Harwich).

277. It is recommended that further research into the current distribution of unemployment within the region be based on more direct surveys of the characteristics of the unemployed and more meaningfully defined labour market areas. Thus, the conclusions of this section are best regarded as suggestive rather than final and certainly should be treated with some caution.

Question 5

The determinants of sub-divisional variations in the availability of job opportunities.

278. It is necessary to explain variations between sub-divisions in the level of job opportunities:

(a) because we have explained part of the sub-divisional variation in under utilisation of resources by this variable,

(b) because knowledge of the determinants of the pressure of demand, plus knowledge of the determinants of the other causes of unemployment, enables us to explain sub-divisional variations in the extent of *excess* demand.

Hypothesis 1

279. Sub-divisional variations in the level of job opportunities are related to the extent of *seasonal* varia-tion in demand for goods and services. The six sub-divisions with the highest average V/T ratios are all inland; the seven lowest, with the exception of Greater London, are all coastal and depend to some extent on the holiday-based trades.

280. However, the statistics used throughout this exercise refer to the situation in *June*. Since one would expect the holiday season to be well under way by that month, it seems implausible to suggest that the lack of job opportunities is less than in other places because of the seasonal nature of the demand for labour.

113

281. What is worth emphasising, however, is the likelihood of inter sub-divisional variations being *wider* in the winter months when seasonal unemployment would certainly be expected in the resort areas. This is demonstrated by a preliminary investigation of seasonal unemployment, the procedure of which involves comparison of the average numbers wholly unemployed in January 1964, '65, '66 and '67 and the average numbers unemployed in June 1964, '65, '66 and '67. For the Region as a whole, the average increase in unemployment between June and January in these years was about 35%, but the various sub-divisions ranged between an increase of only 22% in OMA (North) and 78% in OSE (Kent). The four coastal OSE sub-divisions all have an average increase of over 50%. As expected, therefore, this tentative study suggests that seasonal unemployment is greatest in sub-divisions (10), (12) and (13), and especially (11). Thus any investigation of typical winter unemployment levels would show up these sub-divisions in a worse light than this investigation, and would accordingly suggest the existence of *even wider inter-sub-divisional differentials in labour utilisation.*

Hypothesis 2

282. 'Differences between sub-divisions in the average level of job opportunities reflect variations in the extent to which sub-divisions are characterised by industries liable to recession.'

283. Two sets of data are available which facilitate the examination of this hypothesis. These are:

(a) statistics of the numbers of persons in the total SE Region who were wholly unemployed on 13.6.66., classified by industry (SIC Order) in which they were last employed,

(b) statistics of the estimated numbers of employees in each of the 13 sub-divisions in mid-June 1966, classified by industry (SIC Order). See Table 4.4.

284. These two sets of data may be used in the calculation of the 'expected' level of unemployed in each sub-division (where the 'expected' level is that which would have occurred if each industry had the same percentage of persons unemployed in each sub-division as it had in the region as a whole). The percentage of unemployment in the region as a whole was highest in Shipbuilding, Construction and Miscellaneous Services and lowest in Professional Services, Paper, Printing and Publishing, Vehicles and Gas, Electricity and Water. The 'expected' level of unemployment would be highest in those sub-divisions specialising in the former group and lowest in those sub-divisions with above average specialisation in the latter group of industries.

285. The results of the full standardisation procedure are shown in the 2nd Column of Table 7.9*. The 'expected' level of unemployment is seen to vary between 0.62% in sub-division (3) and 0.75% in sub-division (13). The former can be thought of as having the most favourable industrial composition in terms of this criterion, and the latter the least favourable. Whether the sub-divisions with intermediate values of 'expected' unemployment can be considered as being favourable or unfavourable is best answered by comparison of the expected percentage of unemployment with the level of unemployment in the region as a whole.✓ The absolute difference is shown in Table 7.9 under the heading 'Proportionality effect'. It is positive in five cases (sub-divisions 13, 12, 11, 1 and 10) and negative in eight (all OMA sub-divisions and OSE sub-divisions 8 and 9). The former group specialise in industries with above average unemployment, while the latter group tend to specialise in those with below average unemployment.

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* It is worth emphasising that this exercise is based wholly on analysis of industry at the SIC Order level. These represent groups of industries which are not internally homogeneous in many ways. In particular the constituent industries may differ markedly in their liability to unemployment. Hence analysis at the level of Minimum List Heading may be superior, and the results of such refinement would probably indicate that industrial mix was a rather better explanation of intra-regional employment variations than suggested in this paper. However, MLH data is not available for the sub-divisions.

✓ Note, however, that one might alternatively study the favourability of industrial structure relative to the whole nation rather than the SE Region. This would involve calculation of the expected levels of unemployment based on the level of unemployment by industry in the whole nation. Performing this exercise for June 1966, shows that even sub-division (13) is favourable relative to this yardstick. The SE is generally very free of those industries in which unemployment was heaviest in the nation as a whole.

286.   However, it should be emphasised that these differences between the sub-divisions are very small indeed. In fact it is not the ordering of the sub-divisions in terms of the proportionality effect which is important, so much as the smallness of the proportionality effect in all cases. In brief, the industrial structure of the sub-divisions is a most inadequate explanation of differences between the sub-divisions in the percentage of persons unemployed. This is emphasised by comparison of the 'expected' levels of unemployment with the actual level in the sub-divisions (as shown in the 1st column of Table 7.9). The range of the former is between 0.62% and 0.75% while the range of the latter is between 0.44% and 1.51%.

287.   Further, and more complete evidence of inability of sub-divisional variations in industrial structure to explain the variations in the level of unemployment is provided by comparison of the proportionality effect with the differential effect (as shown in the final column of Table 7.9). The differential effect is calculated as actual percentage unemployed minus 'expected' percentage unemployed. It can be regarded as a residual, indicating the amount of the unemployment in a sub-division which cannot be explained by the industrial mix of the sub-division. This 'unexplained' term is larger than the 'explained' (or proportionality) term in every one of the 13 sub-divisions, and in 10 sub-divisions the 'unexplained' term is over four times as large as the 'explained' term. Moreover, in those areas with the highest unemployment, such as sub-divisions (12), (11), (13), (4) and (10), the amount of deviation from the average unemployment for the whole region which is 'explained' can be considered as negligible.

288.   The obvious conclusion is that intra-regional variations in industrial mix are not a good explanation of intra-regional variations in the level of demand for labour. However, it is interesting to note that the rank correlation between sub-divisions ordered according to actual and 'expected' percentage unemployment is quite high (+0.751). This may be considered as being of little importance in view of the foregoing conclusions regarding the relative magnitude of proportionality and differential effects. However, it does indicate that, while the industrial mix cannot readily explain the large cardinal differences between sub-divisions in percentage unemployment, consideration of industrial mix is quite a good guide to *ordering* sub-divisions according to percentage unemployment. One possible avenue of reconciliation of these results is via the recognition that regional multipliers may be in excess of unity. A sub-division which specialises in ship-building will have a certain level of unemployment the existence of which will lead to unemployment in other industrial sectors of this sub-division. In this case, the sort of analysis used in this paper will reveal an above average unemployment level in that area but not as much above average as actually experienced. This failure to consider the secondary effects of unemployment might suggest that we have underestimated the effects of industrial structure.

289.   In the absence of knowledge about the magnitude of employment multipliers in each of the sub-divisions it is difficult to recalculate the amount of unemployment 'explained' by industrial structure, taking account of secondary as well as primary effects. However, it is most unlikely that the multipliers would be large enough to drastically alter the conclusions. The relative magnitude of the explained and unexplained terms is such that even a doubling* of the former would not make industrial structure seem anything like a good explanation of unemployment differences. Also it should be noted, that in three sub-divisions (1, 4, 5) the proportionality effect has the opposite sign to the differential effect. In these cases consideration of secondary effects of unemployment would actually seem to worsen the ability of industrial structure to explain the level of demand for labour.

Hypothesis 3

290.   'Sub-divisional variations in the volume of job opportunities are related to the growth potential of industry in the different sub-divisions'. Constant pressures for expansion due either to (1) the area having an industrial structure suited to take advantage of national trends (2) some other 'differential' advantage would lead to a generally high level of job opportunities such as typically found in many of the SE sub-divisions. Lack of such pressure would mean a lower level of job opportunities.

291.   This hypothesis seems to be the most plausible, and in general the sub-divisions having a generally high level of job opportunities are in fact those with the highest growth of employment e.g. sub-divisions

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*   Research into the size of *regional* employment multipliers suggests that they probably fall into the range 1.2 - 1.7. (See G. C. Archibald 'Regional Multiplier Effects in the U.K.' Oxford Economic Papers March 1967). In sub-divisions one would expect them to be even smaller.

(2), (3), (6), (7) and (8), while those with slow growth are generally those featuring a low average level of job opportunities e.g. (1), (5), (11) and (12). Sub-division (4) is conspicuous in having a generally low level of registered job opportunities but a very high rate of growth of employment.

Hypothesis 4

292. Finally, one should note the possibility of there being sub-divisional differences in the *statement ratio* (registered vacancies ÷ 'true' number of vacancies). The true number of vacancies might be either over or under-stated, depending on whether employers 'join two queues' in their quest for more labour, or give up and join none. Sub-divisional variations in the procedures adopted by employers are a possible reason for sub-divisional differences in the level of *registered* job opportunities. Ideally such distortion introduced by a non-spatially-constant statement ratio should be removed from the analysis, but this does not seem possible with the information currently available. However, if such sub-divisional differences are themselves a function of the likelihood of obtaining labour (i.e. the pressure of demand) they will have no effect upon the *ranking* of sub-divisions according to the level of job opportunities.

Question 6

An index of the extent of excess demand for labour in the SE sub-divisions

293. Neither the volume of unemployment nor the volume of vacancies is a perfect index of the extent of excess supply and demand for labour. In situations of excess supply of labour, changes in the demand for labour will have little impact on V/T, but may be measured quite well by the U/T index. Similarly, in situations of excess demand, the U/T index will not reflect very well changes in the magnitude of that excess, but they will probably be reflected clearly in the V/T index. The best formulation is one which takes into account variations in labour supply and demand which show up in the level of unemployment *and* those which reflect themselves in the volume of unfilled vacancies. The index V-U/T would therefore seem to be a suitable measure*. More formally we define as the supply of labour T + U, and as the demand for labour T + V. The difference (V-U/T) is a measure of excess demand.

294. The statistical results are shown in Tables 7.6 and 7.7, and graphically presented in Appendix 7.C. (The volume of excess demand can be thought of as the dotted line MINUS the continuous line).

295. The first column of Table 7.7 demonstrates clearly the variability between the sub-divisions in terms of the *average level of excess demand for labour*. The range is between sub-division (7), which is shown as having an average excess demand of nearly three times the regional average, and sub-division (11) which seems to have had on average no excess at all. It is interesting to note that the level of excess demand has been higher in the OMA than in Greater London, although it is also true that, in terms of *absolute numbers,* excess demand is greater in the latter.

296. There is also very considerable difference between the sub-divisions in the extent of *variability* around the average. The relative size of fluctuations (as indicated in the final column of Table 7.7) varies between below one-third of the mean value (in sub-division 7) and over 100 per cent of the mean (in sub-divisions 11, 12 and 13).

297. In order to determine whether any of the sub-divisions have been improving or worsening their positions relative to the region as a whole, regression lines have been fitted to the data in Table 7.6.[ø] The trend coefficient of the Region as a whole is very slightly negative and this is also the case for each of the three major areas. The most notable trends are in sub-divisions (3), (8) and (9) all of which have quite marked negative trend coefficients, while very slight upward trend are found in sub-divisions (5), (6) and (12).

298. These results are summarised in the following table, the sub-divisions being ranked according to the mean level of excess demand.

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* The value of this index has been examined by J. C. R. Dow and L. A. Dicks-Mireaux (Oxford Economic Papers 1959) who conclude that it is generally a good indicator of excess supply and demand, but, in the absence of data on the statement ratio, better as an ordinal than a cardinal index.

ø This method can be justified only if Notification of Vacancies Order is assumed to have had little quantative impact on the volume of vacancies reported, and if the period starts and ends at similar points in the trade cycle. This does seem to be the case.

Diagram 5.

Sub-division	Mean level of excess demand	Relative variability of excess demand	Time trend of excess demand
7. OMA (SW)	Well above average	Relatively low	-
3. OMA (North)	"	"	Falling
2. OMA (West)	"	"	-
6. OMA (South)	"	"	Rising slightly
9. OSE (Beds-Bucks)	"	"	Falling
8. OSE (Berks-Oxon)	"	"	Falling
10. OSE (Essex)	Above average	"	-
1. Greater London	"	Relatively high	-
4. OMA (East)	Below average	"	-
5. OMA (SE)	"	"	Rising slightly
12. OSE (Sussex Coast)	Well below average	Very high	Rising slightly
13. OSE (Solent)	"	"	-
11. OSE (Kent)	"	"	-

299. A final crucial question is *whether the inter-regional imbalance in the distribution of excess demand has been either increasing or decreasing*. To test this, the standard deviation and coefficient of variation between sub-divisions has been calculated for each year (see final row of Table 7.6) and a regression line fitted by the method of least squares to these series. The trend coefficient is negative in the case of the standard deviation, indicating that *absolute* differentials between sub-divisions in the level of V-U/T have become somewhat *narrower*. However, the trend coefficient is positive in the case of the regression equation fitted to the series of coefficients of variation, indicating a *relative widening*. But in this latter case the significance of the regression equation is dubious. Perhaps the best interpretation of this evidence is that, *although some sub-divisions have been improving or worsening their position relative to the region as a whole, the extent of intra-regional imbalance in the distribution of excess demand has not been significantly altered.*

Concluding remarks

(i) The *allocation of resources* within the SE Region has not been wholly satisfactory, given the very high pressure of demand in the region as a whole. Intra-regional variations in the level of excess demand have been significant and these have shown little tendency to diminish during the period studied.

(ii) Neither has the extent of *resource utilisation* been perfect, in as much as intra-regional differences in the level of unemployment have persisted throughout the period. (The *annual average* levels of unemployment have probably been understated throughout by the mid-year statistics used in this exercise).

(iii) An improved allocation of resources could have reduced the extent of resource under utilisation because, although the latter variable is influenced by exogenous factors such as the extent of urbanisation and the spatial concentration of 'occupational pensioners', some of it can be explained in terms of the intra-regional distribution of aggregate demand for labour and intra-regional differences in the structure of demand for labour.

(iv) Further research could most usefully be concentrated on studying intra-sub-divisional variations in (4) OMA (EAST), (11) OSE (Kent), (12) OSE (Sussex Coast) and (13) OSE (Solent). These have the highest levels of percentage unemployment and together with Greater London contain in most years 89-90% of total registered unemployment in the region. Such research should probe further into determining the extent to which resource utilisation (in terms of higher activity rates as well as lowered unemployment levels) could be improved by changes in the intra-regional allocation of demand for labour.

300. Ideally, analysis of the utilisation of labour resources within the Region should be accompanied by study of capital resource utilisation, involving consideration of productive efficiency in the sub-divisions.

However, information on capital resources is virtually non-existent, and it is primarily for this reason that such analysis is omitted. Nevertheless, this does mean that considerable caution is necessary in drawing policy implications from the evidence revealed in this chapter on manpower utilisation. The diversion of growth to those sub-divisions having surplus labour resources may involve a cost to the Region in terms of overall productivity. The spatial linkages of different industrial activities are of particular importance here and may impose a severe constraint on the pattern of industrial growth within the Region. The point to emphasise is that, given the multiplicity of different planning objectives as suggested in chapter C.2 of this report, there is likely to be conflict between alternative policies. Ultimately, some choice between value judgments is necessary. What this chapter demonstrates is that, *given* the particular value judgment that the prime objective is minimisation of labour under utilisation, employment growth should be encouraged rather more in certain of the sub-divisions (e.g. 4, 11, 12 and 13).

Table 7.1 Economic activity patterns in the major SE sub-divisions compared with the national average (18.4.66)

	SE Region	Greater London Area	OMA	OSE	Great Britain
TOTAL POPULATION AGED 15 AND OVER	100.0	100.0	100.0	100.0	100.0
1. Total Economically Inactive	36.9	33.4	36.9	43.5	38.0
(a) Students	3.5	3.5	3.5	3.4	3.2
(b) Retired	5.8	5.1	4.9	8.1	6.0
(c) Other	27.6	24.8	28.5	32.0	28.8
2. Total Economically Active	63.1	66.6	63.1	56.5	62.0
(a) Total in employment	61.5	64.8	61.8	54.9	60.3
(b) Total not in employment	1.6	1.8	1.3	1.6	1.7

Source: Census of England and Wales 1966

Tables 7.2 Numbers of persons registered as unemployed in the SE sub-divisions expressed as a percentage of insured persons (employed plus unemployed)

	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
1. Greater London	0.5	1.2	1.0	0.7	0.6	0.6	0.7	1.2	1.0	0.7	0.7	1.1	1.2	0.8	0.7	0.6
2. OMA (West)	0.4	0.9	0.7	0.5	0.4	0.5	0.7	1.1	0.7	0.5	0.4	0.8	0.8	0.5	0.4	0.4
3. OMA (North)	0.3	0.6	0.4	0.4	0.3	0.3	0.4	0.6	0.6	0.4	0.4	0.6	0.7	0.4	0.4	0.5
4. OMA (East)	0.9	1.3	1.4	1.3	0.8	0.9	1.1	2.0	1.5	1.1	1.1	1.4	1.5	1.0	1.0	1.0
5. OMA (SE)	1.0	1.0	1.1	1.2	0.9	0.8	0.9	1.3	1.2	1.0	1.0	1.3	1.4	0.9	0.8	0.7
6. OMA (South)	0.4	0.7	0.8	0.7	0.6	0.5	0.7	1.3	0.7	0.6	0.6	0.6	0.8	0.6	0.6	0.6
7. OMA (SW)	0.6	0.7	0.7	0.5	0.5	0.5	0.6	0.9	0.8	0.6	0.5	0.6	0.8	0.5	0.6	0.5
OMA : TOTAL	0.6	0.8	0.8	0.7	0.6	0.6	0.7	1.1	0.9	0.7	0.7	0.9	1.0	0.6	0.6	0.6
8. OSE (Berks-Oxon)	0.3	0.5	0.5	0.4	0.3	0.3	0.4	0.5	0.4	0.3	0.4	0.5	0.5	0.4	0.5	0.5
9. OSE (Beds-Bucks)	0.3	0.5	0.4	0.4	0.3	0.3	0.7	0.7	0.7	0.5	0.5	0.9	0.9	0.6	0.5	0.6
10. OSE (Essex)	0.6	1.2	0.8	0.9	0.7	0.8	1.0	1.5	1.3	1.0	0.8	1.2	1.4	1.0	1.0	0.9
11. OSE (Kent)	1.2	1.6	1.6	1.7	1.3	1.4	1.6	2.0	2.2	1.8	1.5	1.6	2.0	1.9	1.6	1.5
12. OSE (Sussex Coast)	1.3	1.8	2.2	1.7	1.4	1.6	1.7	2.1	1.9	1.6	1.4	1.7	2.1	1.6	1.5	1.5
13. OSE (Solent)	1.3	1.8	1.7	1.3	1.1	1.1	1.4	2.3	2.2	1.6	1.3	1.6	1.8	1.3	1.2	1.1
OSE : TOTAL	1.1	1.5	1.5	1.2	1.0	1.0	1.3	1.8	1.7	1.3	1.1	1.4	1.6	1.2	1.2	1.1
SE ENGLAND	0.6	1.2	1.0	0.8	0.6	0.6	0.8	1.3	1.1	0.8	0.8	1.1	1.2	0.8	0.8	0.7
Standard deviation:	0.40	0.47	0.55	0.48	0.37	0.41	0.43	0.59	0.62	0.51	0.40	0.43	0.51	0.47	0.41	0.42
Coefficient variation:	56	45	49	53	53	56	47	44	53	57	49	40	41	54	50	57

Source: Department of Employment and Productivity

119

Table 7.3 Descriptive statistics of the pattern of unemployment in the SE sub-divisions 1951-1966

SE sub-division	Mean % unemployed	Standard deviation	Coefficient of variation	Minimum % in any year
1. Greater London: TOTAL	0.8	0.24	29	0.5
2. OMA (West)	0.6	0.21	34	0.4
3. OMA (North)	0.5	0.13	29	0.3
4. OMA (East)	1.2	0.29	24	0.8
5. OMA (SE)	1.0	0.19	19	0.7
6. OMA (South)	0.7	0.19	29	0.4
7. OMA (SW)	0.6	0.12	20	0.5
OMA : TOTAL	0.7	0.17	23	0.6
8. OSE (Berks-Oxon)	0.4	0.09	21	0.3
9. OSE (Beds-Bucks)	0.5	0.19	35	0.3
10. OSE (Essex)	1.0	0.26	26	0.6
11. OSE (Kent)	1.6	0.25	15	1.2
12. OSE (Sussex Coast)	1.7	0.27	16	1.3
13. OSE (Solent)	1.5	0.37	25	1.1
OSE : TOTAL	1.3	0.25	19	1.0
SE ENGLAND : TOTAL	0.9	0.22	25	0.6

Source: Department of Employment and Productivity

Table 7.4 Unfilled vacancies in the SE sub-divisions

Numbers of vacancies as a percentage of numbers of insured employees

	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
1. Greater London	2.5	1.4	1.6	2.0	2.1	2.1	1.5	1.0	1.2	1.8	1.8	1.2	1.1	1.8	2.1	2.0
2. OMA (West)	3.2	2.3	2.3	2.9	3.7	2.8	2.0	1.6	2.2	3.2	3.1	2.0	1.9	3.4	3.8	3.8
3. OMA (North)	4.3	3.1	2.9	3.2	3.8	3.6	2.8	2.0	2.1	2.8	2.5	1.7	1.5	3.0	3.2	3.0
4. OMA (East)	2.9	1.9	1.7	1.7	2.4	2.2	1.8	1.0	1.6	2.1	2.1	1.6	1.4	2.2	2.2	2.5
5. OMA (SE)	1.9	1.4	1.5	1.8	2.2	1.9	1.4	0.9	1.3	1.8	1.9	1.4	1.3	1.9	2.5	2.3
6. OMA (South)	3.4	2.4	2.0	2.8	3.3	3.0	2.5	1.7	2.5	3.4	3.5	2.4	2.3	3.3	3.8	3.4
7. OMA (SW)	4.4	2.8	2.9	3.4	4.4	4.3	2.7	1.9	2.6	4.2	4.1	3.2	2.7	3.6	3.9	3.7
OMA : TOTAL	3.3	2.3	2.3	2.6	3.3	2.9	2.2	1.5	2.0	2.8	2.8	2.0	1.7	2.9	3.2	3.0
8. OSE (Berks-Oxon)	3.7	2.8	2.6	3.3	4.1	3.4	2.0	1.7	2.5	2.3	2.0	1.6	1.5	1.8	2.4	2.1
9. OSE (Beds-Bucks)	4.9	2.7	2.7	2.8	3.8	4.1	2.4	2.0	2.3	2.5	2.1	1.6	1.4	2.9	2.9	3.0
10. OSE (Essex)	2.9	2.0	2.0	2.4	2.7	2.6	2.1	1.6	1.9	2.5	2.3	1.7	1.9	2.6	3.0	3.1
11. OSE (Kent)	1.6	1.5	1.6	1.8	2.1	1.7	1.4	1.1	1.3	1.6	1.8	1.4	1.4	1.8	2.2	2.3
12. OSE (Sussex Coast)	1.8	1.7	1.9	2.4	2.9	2.1	2.0	1.5	1.9	2.6	2.8	1.9	1.7	2.5	2.7	2.6
13. OSE (Solent)	2.0	2.0	2.1	2.1	2.5	1.9	1.5	1.1	1.3	1.8	2.0	1.5	1.4	2.0	2.6	2.5
OSE : TOTAL	2.4	2.0	2.1	2.4	2.8	2.3	1.8	1.3	1.7	2.1	2.1	1.6	1.5	2.1	2.6	2.5
SE ENGLAND	2.6	1.7	1.8	2.2	2.4	2.3	1.7	1.2	1.5	2.0	2.1	1.4	1.3	2.1	2.4	2.3

Source: Department of Employment and Productivity

121

Table 7.5 Descriptive statistics of the pattern of unfilled vacancies (expressed
as a percentage of total employees) in the SE sub-divisions 1951-1966

SE sub-division	Mean % unfilled vacancies	Standard deviation	Coefficient of variation
1. Greater London: TOTAL	1.7	0.44	26
2. OMA (West)	2.8	0.73	26
3. OMA (North)	2.8	0.76	27
4. OMA (East)	1.9	0.45	23
5. OMA (SE)	1.7	0.43	25
6. OMA (South)	2.9	0.62	22
7. OMA (SW)	3.4	0.75	22
OMA : TOTAL	2.6	0.56	22
8. OSE Area (Berks)	2.5	0.79	32
9. OSE (Beds-Bucks)	2.7	0.90	33
10. OSE (Essex)	2.3	0.47	20
11. OSE (Kent)	1.7	0.33	20
12. OSE (Sussex Coast)	2.2	0.46	21
13. OSE (Solent)	1.9	0.44	24
OSE : TOTAL	2.1	0.42	20
SE ENGLAND : TOTAL	1.9	0.45	23

Source: Department of Employment and Productivity

Table 7.6 Excess demand in the SE sub-divisions 1951-66

Numbers of vacancies MINUS numbers unemployed as a percentage of numbers of insured employees

	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
1. Greater London	2.0	0.2	0.6	1.3	1.5	1.5	0.8	-0.2	0.3	1.1	1.2	0.1	-0.1	1.1	1.5	1.4
2. OMA (West)	2.8	1.4	1.6	2.4	3.3	2.3	1.4	0.5	1.5	2.7	2.7	1.2	1.1	2.9	3.3	3.3
3. OMA (North)	4.1	2.5	2.5	2.8	3.4	3.3	2.4	1.3	1.5	2.4	2.2	1.1	0.7	2.6	2.8	2.5
4. OMA (East)	1.9	0.6	0.3	0.5	1.6	1.3	0.7	-0.1	0.1	1.0	0.9	0.3	-0.1	1.2	1.2	1.5
5. OMA (SE)	0.9	0.4	0.4	0.6	1.2	1.0	0.5	-0.5	0.1	0.8	0.9	0.2	-0.1	1.1	1.7	1.6
6. OMA (South)	3.0	1.7	1.2	2.2	2.7	2.5	1.8	0.5	1.7	2.9	2.9	1.8	1.5	2.7	3.3	2.9
7. OMA (SW)	3.8	2.1	2.2	2.9	3.9	3.8	2.1	1.1	1.9	3.5	3.6	2.6	2.0	3.1	3.3	3.2
OMA : TOTAL	2.7	1.5	1.4	1.9	2.7	2.4	1.5	0.4	1.1	2.1	2.1	1.1	0.7	2.2	2.6	2.5
8. OSE (Berks-Oxon)	3.3	2.3	2.1	2.9	3.8	3.1	1.6	1.2	2.0	2.0	1.6	1.1	0.9	1.4	1.8	1.6
9. OSE (Beds-Bucks)	4.6	2.2	2.3	2.4	3.5	3.7	1.7	1.2	1.6	2.0	1.7	0.7	0.5	2.4	2.5	2.4
10. OSE (Essex)	2.3	0.8	1.2	1.5	2.0	1.9	1.0	0.1	0.6	1.5	1.5	0.4	0.5	1.6	2.0	2.3
11. OSE (Kent)	0.4	-0.1	0.0	0.1	0.8	0.3	-0.2	-0.9	-0.9	-0.2	0.3	-0.2	-0.6	0.0	0.6	0.7
12. OSE (Sussex Coast)	0.5	-0.2	-0.3	0.7	1.5	0.6	0.3	-0.6	0.0	1.0	1.4	0.2	-0.4	0.9	1.2	1.1
13. OSE (Solent)	0.7	0.2	0.4	0.8	1.4	0.8	0.1	-1.2	-0.9	0.1	0.7	-0.2	-0.5	0.6	1.4	1.4
OSE : TOTAL	1.3	0.6	0.6	1.1	1.8	1.3	0.5	-0.4	0.0	0.8	1.0	0.2	-0.2	0.9	1.4	1.4
SE ENGLAND	2.0	0.5	0.7	1.4	1.8	1.6	0.9	-0.1	0.4	1.2	1.3	0.3	0.1	1.3	1.7	1.6
Standard deviation	1.6	1.0	1.0	1.1	1.4	1.3	0.8	0.8	1.0	1.2	1.1	0.8	0.7	1.1	1.2	1.1
Coefficient of variation	83	112	106	80	72	83	95	816	163	91	80	136	220	216	70	67

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Source: Department of Employment and Productivity

123

Table 7.7 Descriptive statistics of the pattern of excess demand (V-U/T) in the
SE sub-divisions 1951-61

SE sub-division	Mean %	Standard deviation	Coefficient of variation
1. Greater London : TOTAL	0.9	0.67	75
2. OMA (West)	2.2	0.92	43
3. OMA (North)	2.4	0.88	37
4. OMA (East)	0.7	0.73	97
5. OMA (SE)	0.7	0.59	88
6. OMA (South)	2.2	0.78	35
7. OMA (SW)	2.8	0.84	30
OMA : TOTAL	1.8	0.73	40
8. OSE (Berks-Oxon)	2.0	0.85	41
9. OSE (Beds-Bucks)	2.2	1.07	48
10. OSE (Essex)	1.3	0.69	52
11. OSE (Kent)	0.0	0.52	∞
12. OSE (Sussex Coast)	0.5	0.76	154
13. OSE (Solent)	0.4	0.78	209
OSE : TOTAL	0.7	0.66	85
SE ENGLAND : TOTAL	1.0	0.66	64

Source: Department of Employment and Productivity

Table 7.8 Analysis of total registered unemployed mid-1966

	U_r	U_{ts}	U_a (&% of U_r)		U_p (&% of U_r)		U_o	U_x (&% of U_r)		$\dfrac{100\,U_r}{T}$	$\dfrac{100\,U_x}{T}$
1. GLC	29297	273	2487	(8.5)	1789	(6.1)	11137	13611	(46.5)	0.6	0.3
2. OMA (West)	1528	41	179	(11.7)	81	(5.3)	552	675	(44.2)	0.5	0.2
3. OMA (East)	2060	11	234	(11.4)	172	(8.3)	739	904	(43.9)	0.5	0.2
4. OMA (North)	3018	25	592	(19.6)	244	(8.1)	970	1187	(39.3)	1.0	0.4
5. OMA (SE)	1951	2	360	(18.5)	103	(5.3)	669	817	(41.9)	0.7	0.3
6. OMA (South)	1084	0	356	(32.8)	41	(3.8)	309	378	(34.9)	0.6	0.2
7. OMA (SW)	1227	2	224	(18.3)	86	(7.0)	412	503	(41.0)	0.5	0.2
OMA : TOTAL	10868	81	1945	(17.9)	727	(6.7)	3651	4464	(41.1)	0.6	0.3
8. OSE (Berks-Oxon)	1051	4	160	(15.2)	100	(9.5)	354	433	(41.2)	0.5	0.2
9. OSE (Beds-Bucks)	563	147	41	(7.3)	30	(5.3)	155	190	(33.7)	0.6	0.2
10. OSE (Essex)	943	2	250	(26.5)	86	(9.1)	272	333	(35.3)	0.9	0.3
11. OSE (Kent)	2773	19	670	(24.2)	203	(7.3)	846	1035	(37.3)	1.5	0.6
12. OSE (Sussex Coast)	4225	25	1565	(37.0)	258	(6.1)	1070	1307	(30.9)	1.5	0.5
13. OSE (Solent)	5824	2	1451	(24.9)	409	(7.0)	1783	2179	(37.4)	1.1	0.4
OSE : TOTAL	15379	199	4137	(26.9)	1086	(7.1)	4480	5477	(35.6)	1.1	0.4
SE ENGLAND : TOTAL	55544	553	8569	(15.4)	3602	(6.5)	19268	23552	(42.4)	0.7	0.3

Key: U_r = total registered unemployed   : U_{ts} = temporarily stopped   :   T = total employees

U_a = persons aged over 55 and unemployed for over 26 weeks at 11.7.66.

U_p = other persons unemployed for over 26 weeks at 11.7.66.

U_o = 45% of $[U_r\text{-}(U_{ts} + U_a + U_p)]$

U_x = $U_r\text{-}(U_{ts} + U_a + U_p + U_o)$

Source: Department of Employment and Productivity

Table 7.9 The relationship between unemployment and industrial structure in the
SE sub-divisions in June 1966

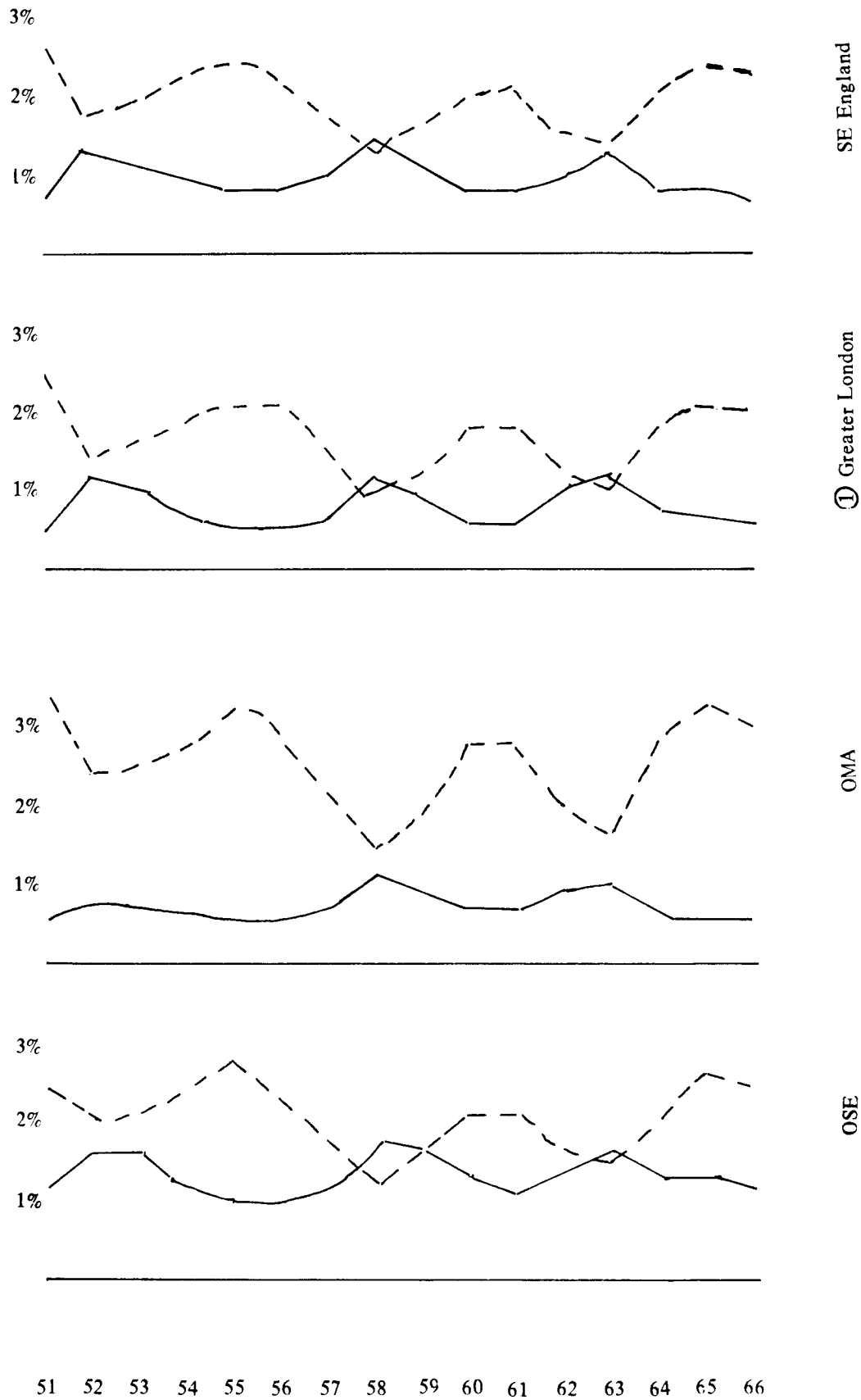| SE England sub-division	Wholly unemployed as percentage of total employees	'Expected' percentage wholly unemployed	Proportionality effect	Differential effect
1. Greater London : TOTAL	0.62	0.72	+ 0.02	- 0.10
2. OMA (West)	0.46	0.67	- 0.03	- 0.21
3. OMA (North)	0.46	0.67	- 0.08	- 0.16
4. OMA (East)	1.01	0.66	- 0.04	+ 0.35
5. OMA (SE)	0.75	0.68	- 0.02	+ 0.07
6. OMA (South)	0.64	0.69	- 0.01	- 0.05
7. OMA (SW)	0.54	0.69	- 0.01	- 0.15
OMA : TOTAL	0.62	0.66	- 0.04	- 0.04
8. OSE (Berks-Oxon)	0.52	0.63	- 0.07	- 0.11
9. OSE (Beds-Bucks)	0.44	0.66	- 0.04	- 0.22
10. OSE (Essex)	0.87	0.71	+ 0.01	+ 0.16
11. OSE (Kent)	1.50	0.72	+ 0.02	+ 0.78
12. OSE (Sussex Coast)	1.51	0.73	+ 0.03	+ 0.78
13. OSE (Solent)	1.09	0.75	+ 0.05	+ 0.34
OSE : TOTAL	1.09	0.72	+ 0.02	+ 0.37
SE ENGLAND : TOTAL	0.70	0.70	0	0

'Expected' level of unemployment is that which would have occured if each industry had the same percentage unemployed in each sub-division as it had in the Region as a whole.
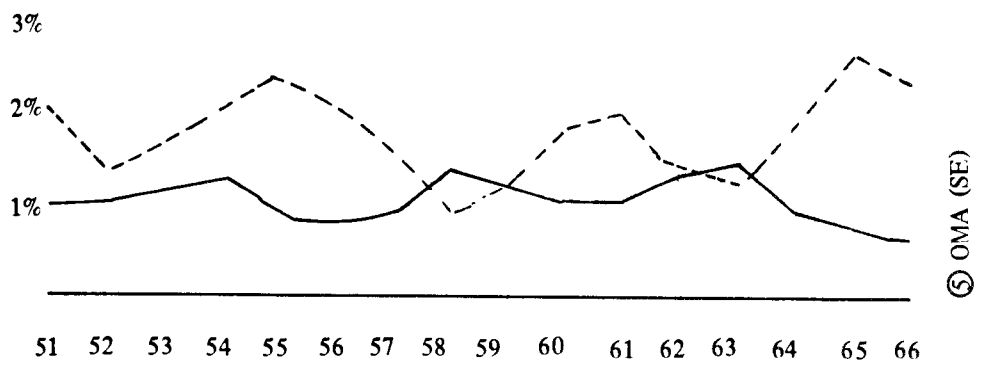
Proportionality effect = 'expected' percentage wholly unemployed in the sub-division MINUS actual percentage wholly unemployed in the Region as a whole.

Differential effect = actual percentage wholly unemployed in the sub-division MINUS 'expected' percentage wholly unemployed in the sub-division.

Source: Department of Employment and Productivity

Appendix 7.A Unemployment and unfilled vacancies in the SE sub-divisions 1951-1966 (June)

51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66

2 OMA (West)

3 OMA (North)

4 OMA (Fast)

5 OMA (SE)

51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66

128

⑥ OMA (South)

⑦ OMA (South West)

⑧ OSE (Berks-Oxon)

⑨ OSE (Beds-Bucks)

51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66

129

⑩ OSE (Essex)

⑪ OSE (Kent)

⑫ OSE (Sussex coast)

⑬ OSE (Solent)

51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66
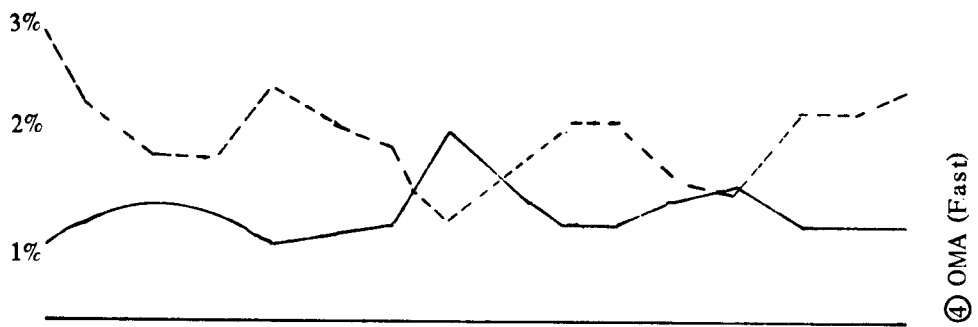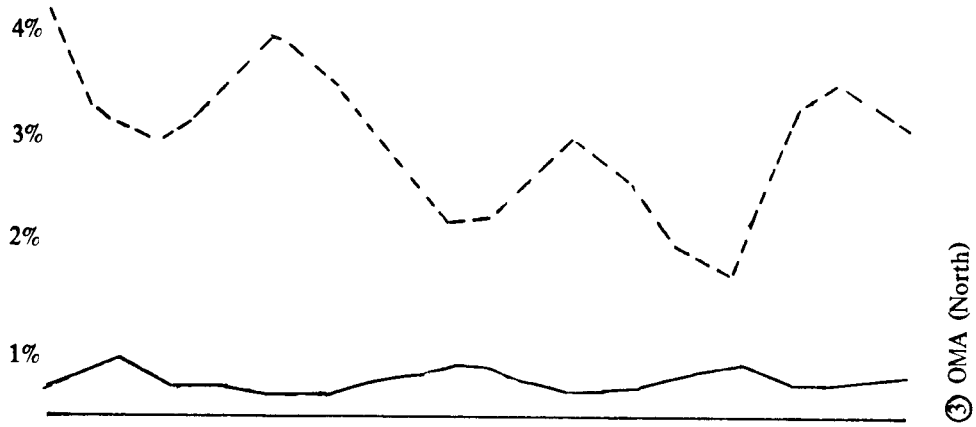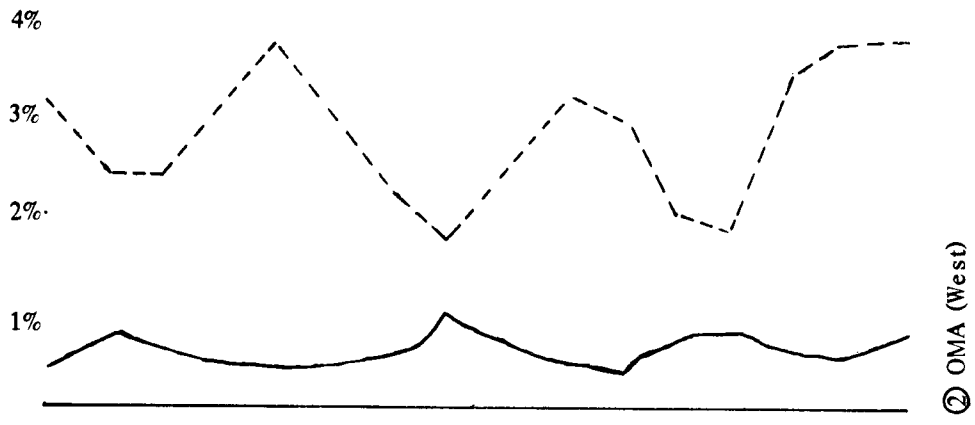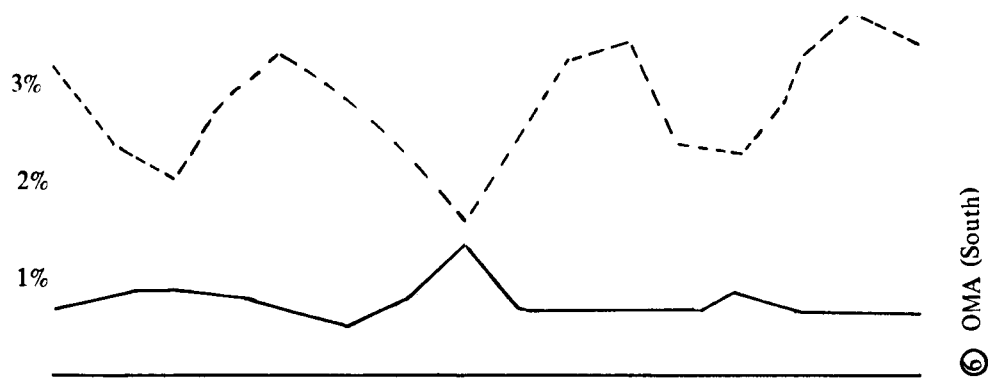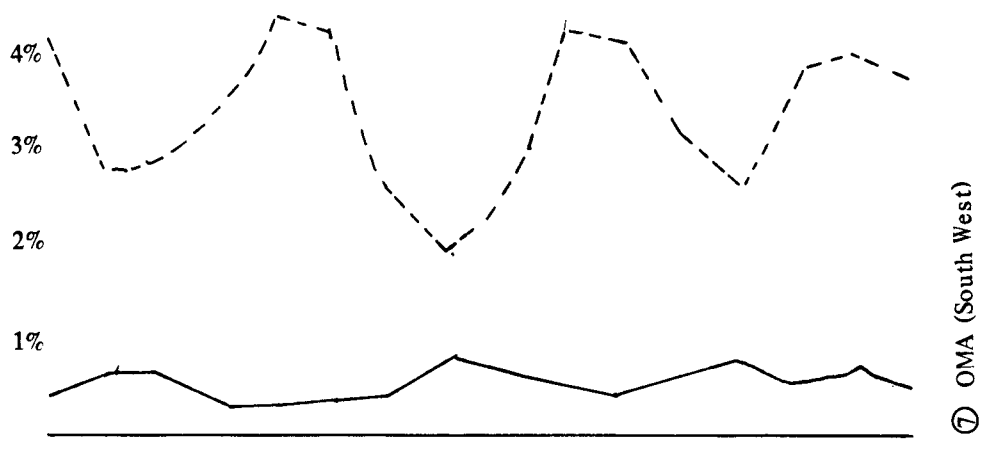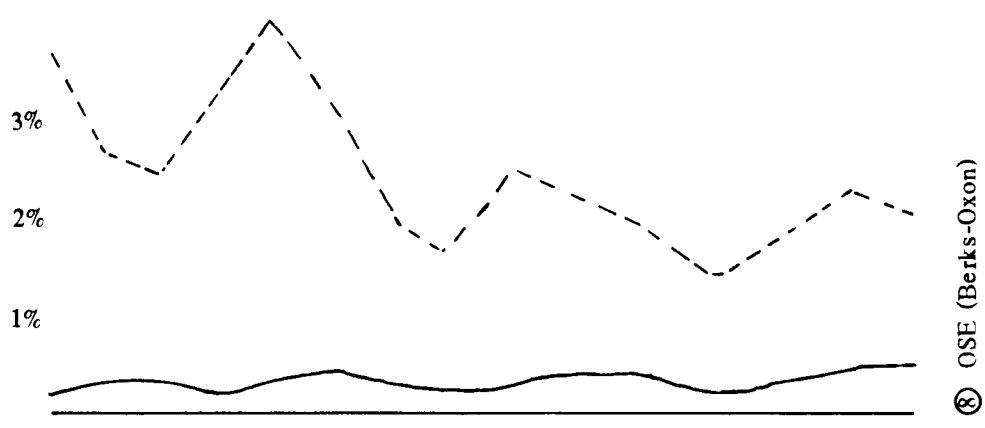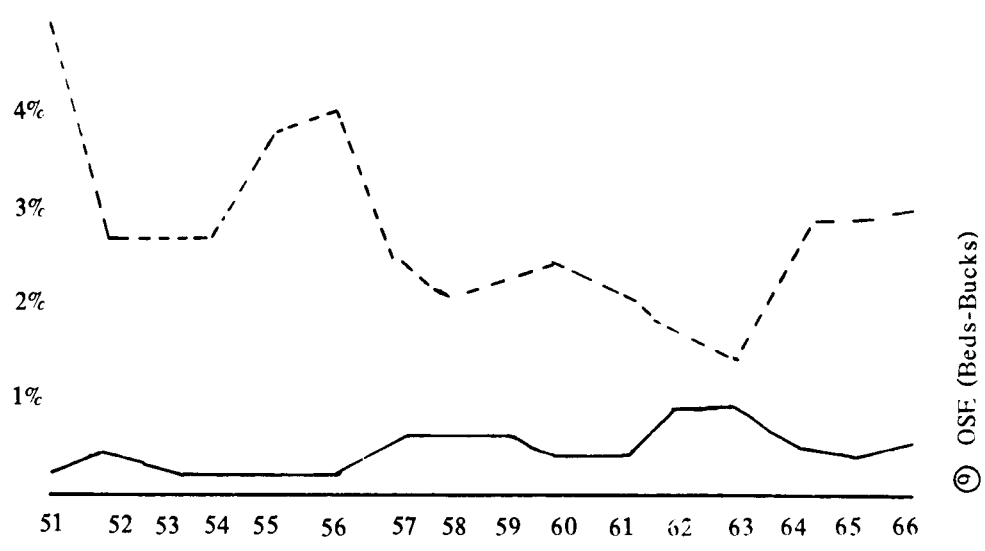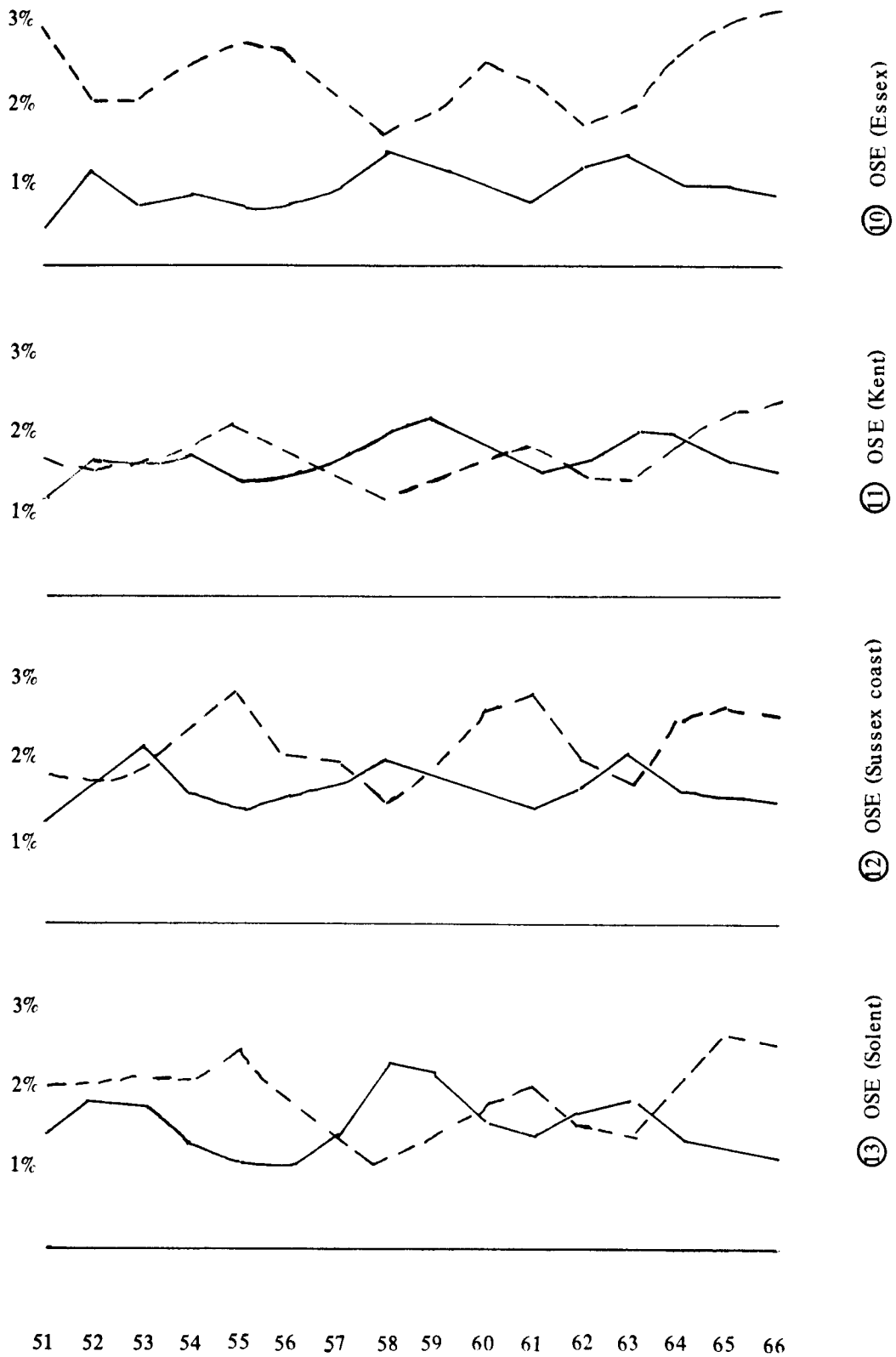
—————— Number of persons registered as unemployed
expressed as a percentage of insured persons

— — — — Number of registered vacancies unfilled
expressed as a percentage of insured persons

130

Appendix 7.B The relationship between unemployment and the volume of job
opportunities in the major SE sub-divisions 1951-1966

X Greater London
□ OMA
O OSE

Numbers
unemployed
as % of total
employees

131

Number of unfilled vacancies as % of total employees
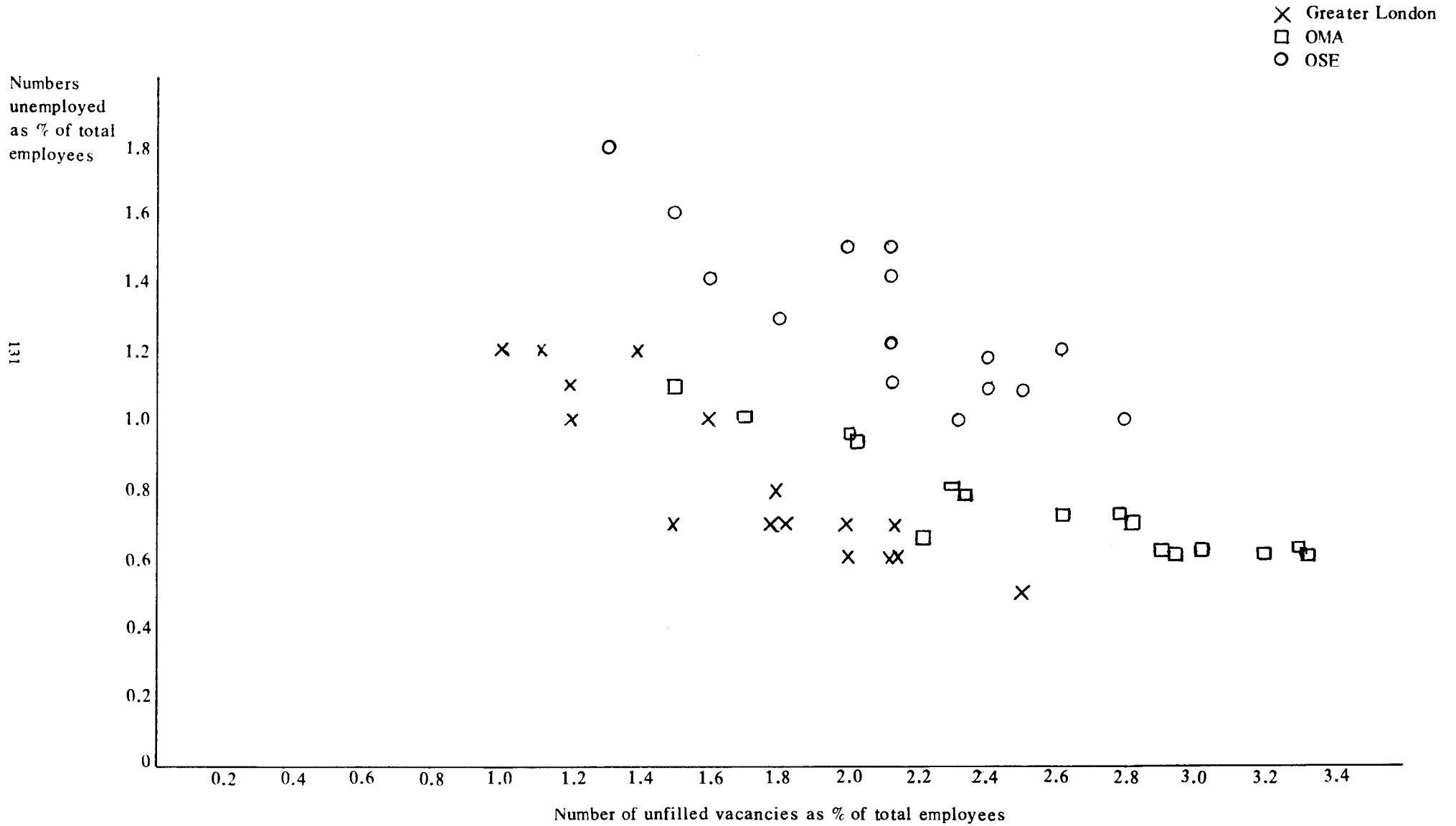
CHAPTER 8 COMPARATIVE PROSPERITY

INTRODUCTION

301. The measurement of prosperity is of considerable importance in the assessment of comparative standards of economic viability. The previous chapters of this report have compared the sub-divisions in terms of their general residential-employment balance, their growth of productive resources and the allocation of resources between industries, and general standards of resource utilisation. Here we examine how well the economic activities pay off. As with the study of resource utilisation, such information has fairly obvious normative aspects: minimisation of spatial unemployment differentials and differentials in comparative prosperity are frequently cited objectives of regional planning. (See, for example, T. Reiner, 'Organising Regional Investment Criteria', Papers of the Regional Science Association Vol. XI, and J. L. Fisher 'Reflections of the Formulation of Regional Policy', Papers of the Regional Science Association Vol. XVIII). Hence, evidence on inter-sub-divisional inequality has implicit normative aspects.

302. Nevertheless the measurement of prosperity constitutes a very difficult problem, both conceptually and empirically. Theoretically, one may distinguish two broad approaches: the *subjective* and the *objective*. The former recognises that the welfare of any individual is primarily a psychological phenomenon which may not be directly related to physical standards of living. According to this criteria, the residents of any area are as well off as they consider themselves to be. This is not easily quantifiable,* even with the use of social surveys, and it is primarily for this reason that economists generally resort to objective criteria, such as levels of income.

303. Harvey Perloff ('Problems of Assessing Regional Economic Progress', Regional Income, Studies in Income and Wealth, Volume 21, NBER, pp. 35-62) has developed a general classification of ways in which prosperity can be objectively measured. This is shown below:-

(1) Indicators of material state or condition of individuals.

(2) Measures of current per capita consumption of goods and services.

(3) Measures of income received by individuals (and families).

(4) Measures of the proportion of the labour force (actively seeking work) who are employed.

This scheme is used in this chapter for the presentation of data relating to the sub-divisions. By drawing together a variety of social indicators we derive an indication of the extent of prosperity variations between the sub-divisions, and attempt to isolate those sub-divisions with a revealed standard of living above and below the regional average. Also, by comparison with national yardsticks, we obtain an indication of the relative prosperity of the whole Region, and reveal whether those sub-divisions with below average prosperity are faring badly in comparison with the whole nation as well as with the rest of the South East Region.

INDICATORS OF THE MATERIAL STATE OR CONDITION OF INDIVIDUALS

304. Perhaps the most obvious indication of levels of living relates to conditions of residence. Three broad approaches are possible here:

(a) examination of the proportion of households in each sub-division which possesses certain amenities (fixed bath, WC etc.);

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* One influence bearing on subjective welfare which can be partly quantified is the journey to work. The proportion of persons in each sub-division who commute to London can easily be determined. However, the problem comes in the evaluation of the disutility involved. Indeed, research undertaken by the Ministry of Housing and Local Government casts some doubt about whether such disutility does generally exist. It seems that, on various radial routes from Central London, housing costs (represented by annual mortgage payments including tax relief) for similar dwellings PLUS transport costs (represented by the cost of an annual season ticket to Charing Cross) do not decline generally with distance: A downward trend is observable with increasing distance within the GLC area, but further afield no trend is revealed. So, if commuting does involve personal disutility it seems to be generally balanced by the additional utility of greater 'amenity' further from London. It should be emphasised that the MHLG research is extremely tentative, and a more thorough study of this interesting subject is needed.

(b) examination of the average rateable values of domestic properties;

(c) examination of the average housing occupation densities in the various areas.

305. Table 8.1 shows the proportion of households in each sub-division which had exclusive use of all three basic household amenities identified in the 1966 Census. These amenities were an inside WC, a fixed bath and a hot water tap.

306. It can clearly be seen that in terms of this criterion household amenity standards in most areas are well above average for England and Wales. There is some variation between sub-divisions, standards being rather lower in the OSE and particularly in the more rural sub-divisions such as (10) and (9), but even these are above the national average. Perhaps the most striking feature is the low average household amenity standard of the GLC area, which would seem to result from greater sharing of amenities between households in multiple-tenancy dwellings.

307. This approach to measurement of living standards can be considered a 'minimum' criterion, in the sense that it does not take into account the quality of housing over and above these minimal standards. A more general approach is to study the distribution of domestic properties according to rateable values. The rate assessment scheme is now supposedly standardised, and average rateable values in different areas may be taken as a general indication of variations in housing values (or, rather, of values as determined at the date of the last rate assessment, 1963). These domestic property values are influenced by the possession of household amenities and other factors related to housing quality, such as the number of rooms. However they also reflect locational factors, such that the final valuation is some reflection of the market price of the properties concerned. Data on these rateable values are published by MHLG and the summary statistics for the 13 sub-divisions are presented here in Table 8.2. Three different measures of housing values can be identified:-

(i) Average value per property. This is simply the total rateable value of domestic property in the area divided by the number of domestic properties on which rates are assessed. Examination of the first column of Table 8.2 reveals quite considerable differences between the sub-divisions in terms of this measure. The GLC area is clearly the most favourable, followed by sub-divisions (12), (6) and (7). The OSE fares less well than the OMA, and sub-divisions (9), (10) and (11) feature the lowest values, these three being below the national average.

(ii) Average value per person (see the second column of Table 8.2). This is calculated as total domestic values divided by total population. It is obviously related to the previous measure, but it also takes into account variations between areas in average numbers inhabiting each property. In those sub-divisions which have a certain number of multiple-houshold properties (e.g. the GLC area) this measure reveals a relatively poorer result than the previous measure. Conversely, in those sub-divisions with a small average number of persons per property, perhaps associated with retired persons (e.g. sub-division 12) this measure gives a relatively more favourable impression. In general, one could conclude that if one were interested in the average housing costs of persons resident in any area this second measure is to be preferred. The former is preferable only in cases where the concern is with the absolute values of housing irrespective of the density of habitation. Empirically, however, it should be noted that in this case the ordering of sub-divisions is changed very little by adoption of alternative criteria. Sub-divisions (1), (12), (6) and (7) come out best in either case, and sub-divisions (5), (8), (9), (10) and (11) appear least favourable.

(iii) The third measure of living standards based on rateable values is based on studying the distribution of properties around the mean value, rather than the mean value itself. In any study of welfare or standards of living the evenness of the distribution is important: the welfare of residents in an area may be low if the distribution of wealth is such that it is highly concentrated in few hands, even though the mean level is comparatively high. Unfortunately the published data do not permit the computation of standard deviations around the mean rateable value for the sub-divisions. We can only gauge the extent of inequality in housing quality in these areas by examining the proportion of households which fall in three discrete groups, rateable value under £100-£200, and over £200 (as shown in the final three columns of Table 8.2). It is not easy to derive from this a measure of the extent of inequality in each sub-division. The rank correlation between the average rateable value per household and the proportion of households with rateable values above £200 is almost perfect, and the correlation with those of below £100 is also nearly (inversely) perfect. Thus, no individual sub-division has a proportion of properties either above £200 or below £100 which is markedly different

from what its mean rateable value would lead one to expect, (with the possible exception of sub-division (7) which has the highest proportion of properties rated at over £200 but only ranks fourth according to mean rateable values - perhaps evidence of more than average inequality here).

308. The general conclusion is that, in the absence of evidence on variations between sub-divisions in internal inequality of housing values, differences between sub-divisions in housing values can be assessed by reference to the mean. The high negative correlation between mean rateable values in the sub-divisions and the proportion of properties with rateable values below £100 supports this assertion. The rateable values of property depend upon supply and demand conditions as well as physical condition. As such, they are not directly associated with personal prosperity. However, when considered in conjunc-tion with information on consumption of durable goods, such data constitutes a useful indication of the level of personal expenditure in each sub-division.

309. Turning now to the third indicator of material living standards, we present in Table 8.3 two measures of the density of housing occupation. In the first column is shown the average number of persons per room in each sub-division, i.e. total population ÷ total number of rooms. The second measure is more specifically oriented towards the identification of the proportion of households living below conventional minimum standards (taken as 1.5 persons per room). The value of such indices and other related measures are con-sidered in Appendix A to 'British Towns' by C. A. Moser and W. Scott. For present purposes it is sufficient to note that average standards in the SE sub-divisions are relatively good with respect to both indices. Moreover, the extent of variation between sub-divisions is comparatively small, especially in the case of the first index. The proportion of overcrowded households is clearly highest in Greater London, but the figure is below 1 per cent in all other sub-divisions except OMA (West) and OSE (Berks-Oxon). From this we conclude that outside London intra-regional variations in average density of housing occupa-tion are not significant at the sub-divisional level; differentials in prosperity are reflected largely in other ways, such as in the consumption of durable goods.

310. Finally, it should be noted that the correlation between these various indices of living standards is rather low. The rank correlation coefficient is only +0.379 in the case of mean rateable values per person and the possession of household amenities, suggesting that these indices cannot be considered as *substitutable* indices. The identification of intra-regional differentials in standards of living involves a simultaneous consideration of all these variables.

MEASURES OF PER CAPITA CONSUMPTION OF GOODS AND SERVICES

311. Levels of consumption expenditure in different areas may be studied for two reasons:

(a) as a means of estimating per capita incomes, in the absence of more direct information. (This was one approach adopted by the Chase Manhattan Bank in the production of their 1962 survey of purchasing power, 'The European Markets'). Such an approach to estimation of per capita incomes involves making assumptions about the average propensity to consume: it may be assumed to be similar in all areas or one may make more sophisticated assumptions about the relationship between consumption and discretionary income. However, since we have more direct estimates of income levels, there is no need to engage further in the formulation of such assumptions;

(b) as a direct measure of standards of living. Material living standards are related to past income and accumulated wealth as well as current income. Hence, current income may not be a good indica-tion of welfare, especially if there are large variations between areas in the prevalence of old persons. Such persons generally have higher living standards than their current incomes suggest. Such difficulties may be partially avoided by studying instead the levels of consumption expenditure and patterns of ownership of consumer goods.

312. Information on the volume of total retail turnover in each sub-division may be derived from the 1961 Census of Distribution. From this may be calculated the ratio of retail turnover to population for each sub-division. Now if there were no inter-sub-divisional shopping movements this figure would indicate the level of per capita consumption of the residents in each sub-division. However, this assumption is untenable because it prohibits the existence of any *gross* movements, let alone any net flows. In fact, the ratio of retail turnover to population may be considered as representing the simultaneous effect of three phenomena:

134

(i) differences between sub-divisions in the level of average per capita incomes and accumulated wealth,

(ii) sub-divisional variations in the average propensity to consume with respect to income,

(iii) inter-sub-divisional shopping flows.

Since the available data does not permit the isolation of the effect of (iii) on consumption expenditure, a different approach to the identification of consumption patterns of the residents in each sub-division is necessary.

313. The alternative method is based on studying spatial variation in the *ownership* of consumer goods. In some ways ownership is rather better than expenditure as a measure of prosperity in regional studies, because it takes account of spatial variations in the price level. Obviously, prosperity may be below average even if expenditure is above average if it so happens that prices are locally very high. Of course, spatial price differentials are likely to be much less important in sub-divisional studies than in inter-regional or international comparisons. Nevertheless, intra-regional variations do exist in the South East, and, as such, provide some justification for using ownership patterns (rather than expenditure or income) as a measure of comparative sub-divisional prosperity. Ownership of consumer durables in particular may be quite a reasonable guide to material living standards.

314. However, the only published information on a Local Authority area basis relates to ownership of motor cars. This data was collected in the Census of England & Wales for the first time in 1966. Table 8.4 of this report shows the number of cars owned in each sub-division and the proportion of cars to resident population. This information is interesting in its own right, but of doubtful value as a general indication of levels of prosperity. Ownership is associated with the extent of urbanisation as well as incomes, social class, etc.* The use of such an index undoubtedly understates prosperity in Greater London relative to the rest of the Region, and probably overstates prosperity in predominantly rural areas such as sub-divisions (9) and (10). Perhaps quality and average value of cars might be a better indicator of prosperity than absolute numbers of cars owned. However, comprehensive statistics do not appear to be currently available.

315. In general, data on ownership of other consumer durables is difficult to obtain in a form which can be analysed for the sub-divisions. However estimates have been made of ownership of the following items:

(i) *Residential telephones.* These estimates are based on information supplied by the GPO relating to the numbers on all exchanges in SE England.

(ii) *Television sets.* These estimates are derived from information supplied by the GPO, relating to the distribution of licences, using forward projections from the latest official data.

(iii) *Washing Machines, (iv) Refrigerators and (v) Vacuum Cleaners*

Available data were much less adequate for these items. The procedure used was to work out national and regional ownership levels, using the following sources:

Newspaper Society Readership Surveys,
Institute of Practitioners in Advertising Readership Surveys,
A survey by Odhams Press,
A survey by the Economist Intelligence Unit.

316. Having obtained regional ownership data in this way, econometric relationships were fitted, the main influential variables being household income levels, urban population percentage, distance north, population density, etc. The ownership estimates for the sub-divisions were derived from the local application of these relationships.

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* See J. C. Tanner, 'Car and Motorcycle Ownership in the Counties of Great Britain in 1960', Journal of the Royal Statistical Society, Series A, Part 2, 1963 and J. F. Kain and M. E. Beesley 'Forecasting Car Ownership' Urban Studies, November 1965.

317. Table 8.5 presents the outcome of these calculations (which were prepared in association with Comart Research Ltd.). The results are very interesting. One striking observation is that ownership in the whole SE Region is not above the national average in the cases of washing machines and television sets. This creates immediate suspicion of the direct relationship between ownership of these items and living standards, and reflection on the variables associated with the ownership of these items reinforces this suspicion. Although we would expect ownership of all durables to be associated with the level of wealth, other variables may be important which have effects in the opposite direction. More generally, one might suggest that ownership of washing machines and televisions is not *consistently* associated with wealth, and that while ownership increases as income rises from low levels it may decline as it rises to high levels. Hence, ownership of these items could be indicative of middling levels of wealth rather than levels which are well above average. In the case of the other items the direct association with standards of living seems less questionable. However, it is improper to assume perfect association with prosperity standards: other factors are important in the determination of ownership levels. Different levels of telephone ownership, for example, may reflect spatial variations in the inelasticity of supply, as well as the relative density and age structure of the population.

318. Since no single durable commodity is a good indication of sub-divisional prosperity differentials, an attempt is made to 'average out' the other relevant variables by the calculation of an overall durables index. This is a composite index which shows the extent of ownership of all items, giving each an equal weighting. For the United Kingdom as a whole the total weighted figure for possession of durables is:

$$49 + 37 + 77 + 19 + 76 = 258$$

This is taken as 100; thus, sub-division (1) with an equivalent total of 293 has a Durables Index of $293/258 = 114$.

319. The full results are shown in the penultimate column of Table 8.5. In view of the scepticism about the extent to which some of the individual items (TV, washing machines and motor cars) are associated with wealth, the exercise has been repeated omitting these items and the final column of Table 8.5 shows these results.

320. The conclusion drawn from this analysis is that durables ownership standards seem to be clearly highest in the GLC area, and lowest in the OSE. All the OSE sub-divisions fare worse than the OMA (with the possible exception of sub-division 12), and sub-divisions (9) and (10) seem to demonstrate the lowest standards of all. Only these last two areas have standards around or below the national average: all other areas are above. Within the OMA some variation is also apparent, sub-divisions (6) and (7) clearly featuring the highest level of material prosperity, not far behind that of the GLC area. Sub-divisions (4) and (5) have the lowest standards, but even these are better off than most areas in the OSE.

MEASURES OF INCOME RECEIVED BY INDIVIDUALS (AND FAMILIES)

321. This is the most general approach to the measurement of prosperity and is rather less restrictive than the previous two approaches in the assumptions made about the relationship between objective measures and subjective measures of welfare. Preferences for expenditure on housing, household amenities and durable goods may differ between individuals with similar wealth, such that ownership of any given commodity may not confer equal utility. This problem is avoided by the income approach to welfare measurement. Total disposable income may be regarded simply as the means by which welfare may be achieved: higher income indicates high ability to satisfy whatever preferences an individual may have, and low income indicates low ability. (The only remaining assumption involves preferences for the things which money can buy vis-à-vis those which money cannot buy!)

322. The problem here is empirical rather than conceptual. Statistics on personal incomes are published every five years by the Commissioners of H.M. Inland Revenue, the last survey relating to the year 1965/6. However it is not directly applicable to the objective of estimating incomes in the sub-divisions for the following reasons:

(a) data is presented only on a county basis;

(b) incomes relate to place of work rather than place of residence;

(c) the Inland Revenue data refers only to *taxable* incomes (i.e. net of allowances against taxation);

(d) the data is truncated in that it refers only to incomes above the tax exemption limit.

A technique has been developed to overcome the limitations in (a) and (b). Using the data on workplace movements presented in the 1966 Census it is possible to derive estimates of the average income of the residents in each sub-division. The technique is as follows:

Technique: Average income of residents in sub-division (i) = (Percentage of residents of sub-division (i) working in county (j) x average income of those working in county (j)) + ...+ (Percentage of residents in sub-division (i) working in county (n) x average income of these working in county (n)).

323. However, this analysis involves making the following assumptions:

(i) the average income is the same in all parts of any particular county;

(ii) the average income of in-commuters to any county is the same as that of the residents working in that county;

(iii) the proportion of men to women commuting out of each sub-division is the same in each sub-division;

(iv) the proportion of persons with incomes below the tax exemption limit is the same in each sub-division;

(v) sub-divisional differences in the incomes of seamen, armed forces, and persons employed in public departments (excluded from the Inland Revenue county data) are exactly the same as sub-divisional differences in other incomes.

324. Experiments involving the relaxation of the second assumption reveal that the results are generally fairly insensitive to changes in this assumption. Per capita incomes come out higher in the GLC area than in all other sub-divisions even with quite extreme assumptions about the relative incomes of commuters and non-commuters. Assumptions (iii), (iv) and (v) would also seem to have fairly little quantitative effect on the analysis. The problem lies with assumption (i). This suggests, for example, that OMA Kent has the same average incomes as OSE Kent for the non-commuting population, which seems a rather heroic assumption. Moreover it means that, to some extent, we are assuming what we are trying to prove.

325. A more fruitful course would seem to be in following the approach used by Comart Research Ltd. in the production of their 1964 'Survey of Incomes and Households'. It is not possible, for commercial reasons to reveal full details of the methodology used in the derivation of their local income estimates. Nevertheless rather fewer restrictive assumptions are made, and consideration is also taken of incomes below the taxation exemption limit. The figures relate to personal income before tax, and include all income derived from wages and salaries, and from all other sources such as self-employment, rent dividends and interest, and pensions, together with incomes below the Inland Revenue exemption limit. Details of these low incomes are derived from information published in the Family Expenditure Survey and the Government Social Survey. The figures follow the practice of the National Income Blue Book in excluding certain types of income not allocable to a classification of incomes by range. These are largely items which, though strictly belonging to the personal sector of the economy, are not within the control of private individuals. Published data in the National Income Blue Books and more recent data in the Monthly Digest of Statistics provide the basis for the United Kingdom total for personal incomes. Sub-divisional income figures are based primarily on Inland Revenue Censuses of Incomes and on DEP figures of local employment by industry and of regional earnings by industry. The figures have been fully adjusted to a resident basis by reference to the Census Workplace Tables and information on ratios of occupied persons to population and households in each sub-division.

326. These calculations result in the final estimates as presented in Table 8.6. The figures on average household income are derived from the per capita income figures simply by multiplying per capita incomes by average household size. Where households are typically larger than average (e.g. sub-divisions 2, 3, 7, 8 and 9) they appear to fare relatively better in terms of this criteria than in terms of per capita incomes. Where average household size is smaller than average (e.g. sub-divisions 1, 11 and 12) they appear to fare relatively worse. Of the two indices of welfare, per capita incomes are probably to be preferred as a

general index of personal prosperity. No significance should be read into small differences in the figures but the following conclusions would appear appropriate:

    (i) Greater London is outstanding as the area with the highest average incomes;

    (ii) average incomes are rather higher in the OMA than the OSE, particularly with respect to mean household incomes;

    (iii) within the OMA, average incomes appear to be highest in sub-divisions (2), (3) and (7), and lowest in sub-division (5).

    (iv) within the OSE, sub-division (12) seems to have the highest per capita incomes, the others being fairly similar with perhaps sub-division (10) being the lowest.

327. The final set of income statistics considered in this section relates to the distribution of households by range of income (see Table 8.7). These figures are Comart Research estimates derived from the information on ranges of individual incomes in the National Income Blue Book and the Reports of the Commissioners of Inland Revenue, together with regional data on the distribution of household income in the Family Expenditure Surveys and DEP local information on employment.

328. Now, the distribution of income as well as the mean level is relevant to estimation of the level of welfare. Ceteris paribus, welfare can be considered greater the more evenly income is distributed. However, there are problems in interpreting the data in as much as it is difficult to derive any measure of inequality in the distribution since the mean household income varies between the sub-divisions. Perhaps the simplest index of inequality is the sum of the first and last columns of Table 8.7, (i.e. the percentage of households with very low incomes PLUS the percentage of households with very high incomes). This measure has certain defects, especially where the average size of the two classes is markedly different. Fortunately, this is not the case here, and one would expect the sum to be highest in areas with relatively large inequality in incomes and lowest in areas with relative equality. The results are as follows:

        relative inequality: 12, 6, 13, 11, 5

        relative equality: 3, 9, 4, 10, 1

329. Inequality is clearly highest in the OSE, for, while the proportion of households with incomes over £2,000 is only just below the regional average, the proportion with incomes below £500 is well above average. Sub-division (12) is the outstanding example. We may take this evidence of inequality as an indication that the revealed welfare of residents in these sub-divisions is relatively lower than their mean incomes would suggest. Inequality seems to be greater in those areas with high proportions of retired persons, some of whom live off state pensions and some of whom have private incomes. Also these areas tend to be favoured by wealthy commuters: hence the inequality.

330. Before leaving this section on income levels in the South East, reference should be made to a quite different approach to the identification of comparative prosperity in the sub-divisions. This takes the form of examining differences in socio-economic group structures. Analysis of published 1961 Census data reveals the sub-divisional pattern presented in Table 8.8 in the form of location quotients. The problem is to summarise this mass of information in a way such as to provide an indication of relative sub-divisional prosperity standards. Conceptually one could apply standardisation techniques in order to derive 'expected' average income levels for each sub-division. The problem here is that there is no data on average income by socio-economic groups either at the regional or national level. Even reference to Guy Routh's NIESR study of occupation and pay in Great Britain does not allow the derivation of such estimates for all socio-economic groups. Hence, for what it is worth, the information in Table 8.8 is left to speak for itself, the only observation being the casual one that the structure seems comparatively 'favourable' in sub-divisions (6) and (7) and possibly most 'unfavourable' in sub-divisions (8), (9) and (10). Certainly the former two areas have well above average representation of employers, managers and professional persons.

MEASURES OF THE PROPORTION OF THE LABOUR FORCE (ACTIVELY SEEKING WORK) WHO ARE IN EMPLOYMENT

331. The level of unemployment is the final measure of living standards in an area. It should be emphasised that this is a very peculiar measure of welfare in that it only helps in the identification of persons with low welfare and tells nothing about the welfare of the others. Also it should be noted that the three welfare measures already used in this paper take the effects of unemployment into consideration (in terms of lowered incomes, reduced consumption and housing standards, etc.). Nevertheless, unemployment is usually thought to have an effect on community welfare over and above these direct effects. Hence it is deserving of special consideration.

332. Chapter 7 dealt extensively with the levels of unemployment in the sub-divisions during the period 1951-1966. The problem which arises, however, is which definition of unemployment should be used in this connection. Removing the 'unemployables' provides a better guide to the volume of the real labour reserve, and may provide a superior index for welfare considerations. Nevertheless, one might argue the other way, and postulate that the presence of 'unemployables' is in itself indicative of lower welfare. Similar arguments apply to removing or not removing the 'frictional' unemployment. Perhaps the simplest solution is to include all the registered unemployed (as shown in Table 7.3) for the purpose of welfare considerations. In any case, the conclusion is similar, that unemployment is significantly above average in:

11	OSE (Kent)
12	OSE (Sussex Coast)
13	OSE (Solent)
4	OMA (East).

333. Low activity rates may also be taken as some sort of indication of low welfare. However, once again this is arguable either way. Low activity rates may be indicative of concealed unemployment, or they may be indicative of a high level of welfare (no need for wives to work, etc.). Perhaps the best solution is to ignore activity rates in this context. Also it might be argued that the general level of unemployment in the South East has been so low that the value of statistics on unemployment to this particular exercise is negligible. Unemployment levels are a very negative measure of welfare, and where the percentages of unemployment are very small it may be advisable to concentrate on positive measures, such as incomes, housing standards and consumption patterns.

CONCLUSIONS

334. In this chapter we have considered various indicators, and estimated values for each of the thirteen sub-divisions. The problem lies in trying to combine these into some sort of overall index of prosperity. One possibility is to apply an averaging procedure to the rankings as shown in Table 8.9. This is quite defensible from one point of view in that it gives an opportunity for different demand patterns in the sub-divisions to even out. Thus, the pattern of consumer preferences and the effect of relative prices, etc., results in low car ownership in London but a very high level of expenditure on consumer durables and on housing. Overall, the prosperity would appear to be well above average in the GLC area, although not necessarily higher than in some of the OMA sub-divisions (depending upon the relative weighting accorded to the different social indicators).

335. However, the very generality of a concept such as average prosperity may render it too vague to be useful. A more easily defensible approach to summarising the sub-divisional values of the various social indicators is to take the data on per capita incomes as the prime index of economic welfare. In general, the correlation between the sub-divisional pattern of incomes and the other social indicators is positive, and the correlation with housing values and durables ownership is clearly significant. This may be taken as lending greater plausibility to the estimates of incomes in the sub-divisions, and has certain implications for policy. The average income levels tend to be lowest in the OSE (with the exception of the Sussex Coast sub-division). Hence the policy of encouraging development in counter-magnets on the periphery of the Region (e.g. Southampton-Portsmouth, Colchester, Ashford, Bletchley-Bedford) would appear likely to reduce intra-regional differentials in economic prosperity.

Table 8.1   Ownership of household amenities in the SE sub-divisions 1966

SE England sub-division	Percentage of households having exclusive use of fixed bath, hot water tap and inside WC	Regional relatives
1. Greater London : TOTAL	65.6	89
2. OMA (West)	83.4	113
3. OMA (North)	85.3	116
4. OMA (East)	84.6	115
5. OMA (South East)	76.1	103
6. OMA (South)	88.2	120
7. OMA (South West)	85.7	116
OMA : TOTAL	83.8	114
8. OSE (Berks-Oxon)	80.7	109
9. OSE (Beds-Bucks)	74.9	101
10. OSE (Essex)	75.1	102
11. OSE (Kent)	76.9	104
12. OSE (Sussex Coast)	80.1	109
13. OSE (Solent)	78.7	107
OSE : TOTAL	78.5	106
SE ENGLAND : TOTAL	73.8	100
ENGLAND AND WALES : TOTAL	72.4	

Source: Census of England and Wales 1966

Table 8.2   Rateable values of domestic properties in the SE sub-divisions 1966/7

SE England sub-division	Average value per property £	Average value per person £	Percentage of properties with value of:		
			Under £100	£100-200	Over £200
1. Greater London : TOTAL	112	33	53.5	40.5	6.0
2. OMA (West)	95	27	65.7	30.6	3.7
3. OMA (North)	95	28	65.1	32.1	2.8
4. OMA (East)	80	24	81.5	17.5	1.0
5. OMA (SE)	71	21	85.8	13.3	0.9
6. OMA (South)	105	31	55.0	40.1	5.0
7. OMA (SW)	104	29	61.8	31.6	6.6
OMA : TOTAL	91	27	69.7	27.1	3.1
8. OSE (Berks-Oxon)	73	19	84.1	14.3	1.6
9. OSE (Beds-Bucks)	63	19	87.2	12.3	0.5
10. OSE (Essex)	62	20	90.3	9.2	0.5
11. OSE (Kent)	66	22	88.3	11.1	0.6
12. OSE (Sussex Coast)	107	37	57.7	41.5	5.8
13. OSE (Solent)	83	25	78.3	19.8	1.9
OSE : TOTAL	82	26	75.7	21.8	2.4
SE ENGLAND : TOTAL	98	30	63.8	31.9	4.3
ENGLAND AND WALES : TOTAL	70	21	83.1	15.2	1.7

Source: MHLG 'Rates and Rateable Values 1966-7 Part 2'
Registrar General's Mid-year Estimates of Population 1966

Table 8.3   Indices of household density conditions 1966

SE England sub-division	Average number of persons per room	Percentage of households with over 1.5 persons per room
1. Greater London : TOTAL	0.58	2.4
2. OMA (West)	0.57	1.1
3. OMA (North)	0.59	0.8
4. OMA (East)	0.59	0.8
5. OMA (SE)	0.53	0.6
6. OMA (South)	0.57	0.5
7. OMA (SW)	0.56	0.8
OMA : TOTAL	0.57	0.8
8. OSE (Berks -Oxon)	0.58	1.1
9. OSE (Beds-Bucks)	0.54	0.9
10. OSE (Essex)	0.51	0.5
11. OSE (Kent)	0.51	0.6
12. OSE (Sussex Coast)	0.50	0.7
13. OSE (Solent)	0.55	0.7
OSE : TOTAL	0.53	0.7
SE ENGLAND : TOTAL	0.57	1.6

Note: These figures are based on information for Local Authority areas in the SE
with a population in excess of 15,000 persons.

Source: Census of England and Wales 1966.

Table 8.4   Ownership of motor cars in the SE sub-divisions 1966

SE England sub-division	Total number of cars	Number of cars as a percentage of resident population	Regional relatives
1. Greater London : TOTAL	1,268,880	16.5	87
2. OMA (West)	203,180	23.2	123
3. OMA (North)	236,450	21.6	114
4. OMA (East)	180,510	20.0	106
5. OMA (SE)	138,330	19.2	102
6. OMA (South)	142,960	24.4	129
7. OMA (SW)	181,180	24.8	131
OMA : TOTAL	1,082,610	22.1	117
8. OSE (Berks-Oxon)	98,530	20.8	110
9. OSE (Beds-Bucks)	52,300	24.1	128
10. OSE (Essex)	74,760	20.7	110
11. OSE (Kent)	102,300	17.6	93
12. OSE (Sussex Coast)	169,080	18.7	99
13. OSE (Solent)	292,940	19.4	103
OSE : TOTAL	789,910	19.4	103
SE ENGLAND : TOTAL	3,141,400	18.9	100
ENGLAND AND WALES : TOTAL	8,115,630	17.2	

Source: Census of England and Wales 1966.

Table 8.5   Ownership of household durables in the SE sub-divisions 1964

SE England sub-division	Percentage of households owning:					Overall durables index based on ownership of:	
	Refrigerators	Vacuum cleaners	Residential telephone	Washing machines	Television sets	all five items	first three items only
1. Greater London : TOTAL	68	83	32	39	71	114	138
2. OMA (West)	59	76	24	36	72	104	120
3. OMA (North)	57	78	24	40	73	105	120
4. OMA (East)	48	80	26	38	72	102	116
5. OMA (SE)	45	78	31	28	78	101	116
6. OMA (South)	52	79	39	35	75	109	128
7. OMA (SW)	57	81	38	34	76	111	132
OMA : TOTAL	53	78	29	36	74	105	120
8. OSE (Berks-Oxon)	56	74	19	36	77	102	112
9. OSE (Beds-Bucks)	46	74	13	37	65	91	100
10. OSE (Essex)	38	78	23	35	66	93	105
11. OSE (Kent)	43	76	30	25	78	98	112
12. OSE (Sussex Coast)	48	77	32	32	72	101	118
13. OSE (Solent)	52	78	19	29	79	100	112
OSE : TOTAL	49	77	24	31	76	100	113
SE ENGLAND : TOTAL	59	80	29	36	73	107	126
UNITED KINGDOM : TOTAL	37	77	19	49	76	100	100

Source: Comart Research Ltd.

144

Table 8.6   Estimates of average incomes in the SE sub-divisions 1964

SE England sub-division	Income per person £ (RR)		Income per household £ (RR)	
1. Greater London : TOTAL	509	(108)	1,544	(106)
2. OMA (West)	450	(96)	1,474	(101)
3. OMA (North)	449	(96)	1,462	(100)
4. OMA (East)	438	(93)	1,379	(94)
5. OMA (SE)	422	(90)	1,350	(92)
6. OMA (South)	434	(92)	1,356	(93)
7. OMA (SW)	445	(94)	1,441	(99)
OMA : TOTAL	441	(94)	1,416	(97)
8. OSE (Berks-Oxon)	426	(90)	1,430	(98)
9. OSE (Beds-Bucks)	420	(89)	1,334	(98)
10. OSE (Essex)	412	(87)	1,256	(86)
11. OSE (Kent)	432	(92)	1,313	(90)
12. OSE (Sussex Coast)	460	(98)	1,345	(92)
13. OSE (Solent)	428	(91)	1,365	(93)
OSE : TOTAL	433	(92)	1,349	(92)
SE ENGLAND : TOTAL	471	(100)	1,460	(100)
UNITED KINGDOM : TOTAL	423		1,337	

RR   =   Regional relatives

Source: Comart Research Ltd.

Table 8.7   The distribution of personal incomes by range of household
incomes in the SE sub-divisions 1964

SE England sub-division	Percentages of household incomes by range of income:				
	Under £500	£500-£1,000	£1,000-£1,500	£1,500-£2,000	£2,000 and over
1. Greater London : TOTAL	6.9	18.3	38.5	25.1	11.2
2. OMA (West)	8.9	22.9	36.6	21.0	10.6
3. OMA (North)	5.8	20.6	43.5	21.6	8.5
4. OMA (East)	8.9	24.1	40.1	19.6	7.3
5. OMA (SE)	13.0	30.4	28.4	19.6	8.6
6. OMA (South)	14.6	27.9	26.9	20.2	10.4
7. OMA (SW)	10.8	24.5	33.5	21.2	10.0
OMA : TOTAL	9.8	24.5	36.0	20.6	9.1
8. OSE (Berks-Oxon)	10.6	24.3	34.5	20.7	9.9
9. OSE (Beds-Bucks)	9.2	26.5	39.9	17.6	6.8
10. OSE (Essex)	11.9	29.0	37.4	15.8	5.9
11. OSE (Kent)	13.2	31.2	27.9	19.2	8.5
12. OSE (Sussex Coast)	19.2	31.6	18.7	19.4	11.1
13. OSE (Solent)	14.4	27.5	27.7	20.7	9.7
OSE : TOTAL	14.4	28.8	28.1	19.4	9.3
SE ENGLAND : TOTAL	9.5	22.5	35.3	22.5	10.2
UNITED KINGDOM : TOTAL	13.0	27.7	31.9	18.8	8.6

Source: Comart Research Ltd.

Table 8.8 Location quotients of the socio-economic group structure of the economically active males resident in each sub-division in 1961

SE England sub-division	Employers and managers - large establishments	Employers and managers - small establishments	Professional: self-employed	Professional: employees	Intermediate non-manual	Junior non-manual	Personal service workers	Foremen and supervisors	Skilled manual	Semi-skilled manual	Unskilled manual	Own account workers	Farmers - employees and managers	Farmers - own account	Agricultural labourers	Armed forces
1. Greater London : TOTAL	100	101	96	93	100	116	114	105	100	103	109	99	9	8	10	33
2. OMA (West)	122	95	98	124	114	78	77	97	101	99	82	95	142	146	120	184
3. OMA (North)	105	87	81	123	105	85	47	105	115	114	75	72	125	92	134	38
4. OMA (East)	103	102	86	101	100	105	66	117	99	107	103	90	125	92	122	34
5. OMA (SE)	101	80	87	90	101	82	60	108	108	103	112	84	147	138	168	138
6. OMA (South)	107	137	163	164	129	101	85	75	82	78	60	97	205	186	194	60
7. OMA (SW)	136	112	142	148	122	90	89	83	90	82	66	89	113	116	112	302
OMA : TOTAL	120	100	104	123	110	89	68	99	101	99	83	87	138	124	138	121
8. OSE (Berks-Oxon)	61	71	109	104	95	65	91	88	95	111	95	88	300	276	288	304
9. OSE (Beds-Bucks)	58	61	109	69	82	61	41	82	114	82	113	96	455	673	414	176
10. OSE (Essex)	71	89	96	53	87	67	71	89	94	91	93	108	491	395	482	242
11. OSE (Kent)	83	96	112	47	83	69	102	83	100	99	102	121	369	362	378	172
12. OSE (Sussex Coast)	95	141	135	68	92	90	145	69	91	84	86	169	243	268	240	63
13. OSE (Solent)	72	90	89	65	87	78	114	102	104	95	104	105	144	184	155	327
OSE : TOTAL	76	97	105	67	88	76	107	87	99	94	99	118	265	289	265	232
SE REGION : TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Note: The location quotient is calculated by dividing the percentage of persons in the sub-division in the particular occupation group by the proportion of persons in the whole of the SE Region in that particular occupation group. A location quotient over 100 indicates a more than average proportion: a location quotient below 100 indicates a less than average proportion.

Source: Census of England and Wales 1961 Socio-Economic Group Tables.

Table 8.9   Ranking of the sub-divisions according to various social indicators

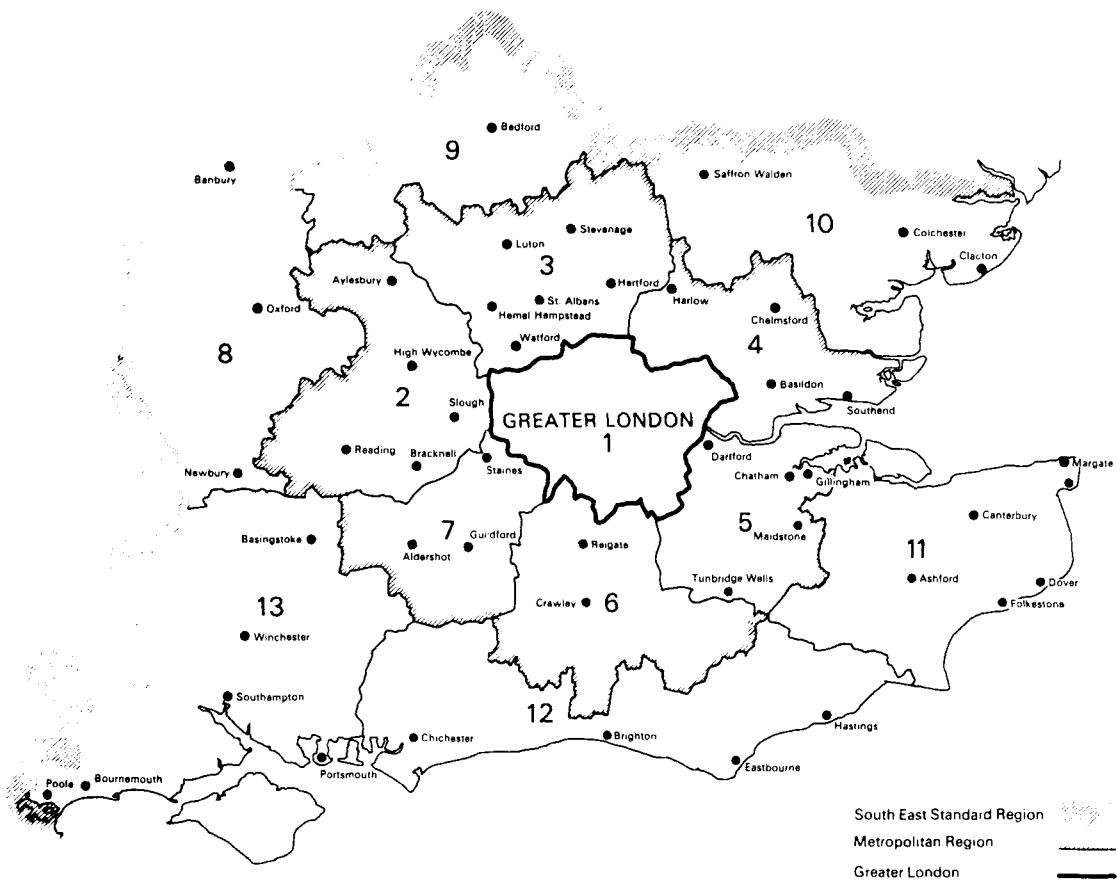| SE England sub-division	(i) household amenities	(ii) housing rateable values per capita	(iii) durables ownership index II	(iv) ownership of cars	(v) average incomes per capita	(vi) equality of income distribution	(vii) average level of unemployment
1. GLC	13	2	1	13	1	5	7
2. OMA (West)	5	6	4	4	3	6	4
3. OMA (North)	3	5	4	5	4	1	2
4. OMA (East)	4	8	7	8	6	3	10
5. OMA (SE)	10	10	7	10	11	9	8
6. OMA (South)	1	3	3	2	7	12	6
7. OMA (SW)	2	4	2	1	5	8	4
8. OSE (Berks-Oxon)	6	12	9	6	10	7	1
9. OSE (Beds-Bucks)	12	13	13	3	12	2	2
10. OSE (Essex)	11	11	12	7	13	4	8
11. OSE (Kent)	9	9	9	12	8	10	12
12. OSE (Sussex Coast)	7	1	6	11	2	13	13
13. OSE (Solent)	8	7	9	9	9	11	11

Fig. 8.1.

SUB-DIVISIONS OF THE SOUTH EAST STANDARD REGION

1	Greater London	8	OSE (Berks-Oxon)
2	OMA (West)	9	OSE (Beds-Bucks)
3	OMA (North)	10	OSE (Essex)
4	OMA (East)	11	OSE (Kent)
5	OMA (SE)	12	OSE (Sussex Coast)
6	OMA (South)	13	OSE (Solent)
7	OMA (SW)		