ADVANCED PRODUCER SERVICES AND URBAN GROWTH

Linda E. Juleff

A thesis submitted to the Council for National Academic Awards
in partial fulfilment of the requirements for the
degree of Doctor of Philosophy

School of Urban and Regional Studies
Sheffield City Polytechnic

August 1989


SHEFFIELD CITY POLYTECHNIC LIBRARY
Th
338.7
JU Q
POND STREET

ABSTRACT

Service industries have traditionally been viewed as secondary to, and at best supportive of, manufacturing industries. This thesis is designed to challenge this view with regard to a particular group of services, advanced producer services. It contends that this group makes both direct and indirect contributions to economic growth at urban region level by operating in two ways: firstly, by providing intermediate inputs into the production of finished products and secondly, in its own right, selling its services to clients outside of the region. This contradicts the expectations of theoretical models of urban growth such as export base theory which cast services in an entirely dependent role. Analysis of the spatial distribution of advanced producer services reveals a significant degree of regional inequality in their provision which given the contribution they make to growth has potentially serious implications for the economic regeneration of many of Britain's depressed areas.

ACKNOWLEDGEMENTS

I would like to thank all those who made a contribution towards the completion of this work. In particular I wish to thank my supervisors Roy Wilkinson, John Henneberry and, in the early stages, John Moohan for their comments and suggestions, Christine Marshall and Rachel Goddard for typing the initial drafts and Carole Overall for typing the final thesis, Neil Bellamy and David Williams for providing technical support, and the members of the School of Urban and Regional Studies, especially Jon Kellett and Dave Egan, for their support and friendly interest in the progress of my work. Thanks also to the Department of Employment for allowing me access to the National On-Line Manpower Information System (NOMIS) database, the NOMIS project team at Durham University and all those who completed the survey questionnaire.

TABLE OF CONTENTS

../...

CONTENTS CONTINUED

../...

CONTENTS CONTINUED

LIST OF FIGURES AND TABLES

../...

LIST OF FIGURES AND TABLES CONTINUED

INTRODUCTION

Throughout the twentieth century services have become increasingly important, at least in employment terms, in the mature economies of the Western world. In Britain this trend has accelerated rapidly over the past thirty years in both the private and public sectors. The latter can be explained through the changing nature of government and specific policy initiatives such as the creation of the National Health Service while the reasons for the growth of the former are less clear.

As these services have expanded so they have diversified to cover a wide spectrum of activity. No longer is it true that services are solely directed towards individual consumers, many now have an important role to play in the production of goods and even of other services. It is this latter group which is the focus of attention for my thesis. Although the concept of 'producer services' was defined as early as 1966 (Greenfield, 1966) it received little attention until the late 1970's/early 1980's when it was revived in the U.S.A. principally by Noyelle and Stanback (Noyelle, 1983a, 1983b; Noyelle and Stanback, 1984; Stanback, 1979; Stanback and Noyelle, 1982; Stanback et al, 1981) and in the U.K. by Marshall (1979, 1980, 1981, 1982a, 1982b, 1983, 1985b and Marshall et al, 1987). These books and papers, together with others which have been published since 1979, are reviewed in Chapter One. From this chapter two important points immediately become apparent: firstly that although there is some agreement on what constitutes the 'core' group of producer services actual definitions differ; and secondly, that the theoretical base underpinning the study of producer services is rather weak. The first of these issues is addressed in Chapter Two which briefly outlines the factors which need to be taken into account in producing such a definition while at the same time explaining the use of the term 'advanced producer services' for the group of industries which are the subject of this study. The second issue is the subject of Chapter Three which examines existing theories of urban and regional economic growth and location and their applicability to advanced producer services. From this it became clear that the theories were inadequate in terms of 'explaining' advanced producer service activity but at a more general level provided a way forward for further

research. In particular this was true of export base theory and, to a lesser extent, central place theory. The latter designed to provide a model of retail development implies that the more specialised and sophisticated advanced producer service activities would locate close to the top of the urban hierarchy with less specialised activities being ubiquitous across the country. The truth of this is examined in Chapter Five. It is export base theory, however, which is the most important of the theories in the context of this thesis. Manufacturing has long been regarded as the sole 'basic', that is, exporting, sector while all services have been viewed as dependent 'non-basic' activities. This thesis sets out to challenge this view by arguing that advanced producer services are themselves basic activities both through their indirect role as intermediate inputs into the manufacturing production process and directly through their ability to sell their services outside of the region in which they are located. This hypothesis is examined via a study of the relationship between advanced producer service employment levels and gross domestic product (G.D.P.) in section 4.6, the use of location quotients in sections 5.2.2 and 5.3.3 and through a survey of advanced producer service providing firms in Leeds and Sheffield reported in Chapter Six.

Chapter Four also looks at the historical trends in Britain's advanced producer service employment during the post-war period and examines whether such employment is population related while Chapter Six also examines the corporate structure, employment and client profiles of advanced producer service firms, their own usage of advanced producer services and the influences on their locational behaviour. Finally, Chapter Seven brings together the results of the empirical work and examines the implications of the findings for regional policy.

CHAPTER ONE

A REVIEW OF THE LITERATURE

1.1 Introduction

In recent years recognition of the declining role of manufacturing and the expansion of service activity in Western economies has encouraged a closer examination of service industries. Within the service sector distinctions have been made between types of service, and in particular between consumer and producer services. It is this latter category to which this thesis is directed and hence this chapter is designed to examine the literature pertaining to this group. Before commencing, however, the problem of definition needs to be addressed.

1.2 Defining Producer Services

While the question of definition of producer services is examined in more detail in Chapter Two some preliminary comments need to be made here in order to provide a context for what follows. Most of the literature has tended towards a pragmatic definition of producer (or business) services but almost all definitions include the "core" group of producer services identified by Singelmann (1978). This group consists of the following industries: banking, financial services, insurance, real estate, engineering and architectural services, accountancy, legal services and other business services, all of which provide intermediate inputs into the production process. Aside from this, two distinct trends emerge. Firstly, that represented by Noyelle and Stanback (1984) who include 'central administrative offices and auxiliary establishments' of firms and some social services alongside the producer services identified above and reclassify the group as 'the complex of corporate activity'. Secondly, in much of the U.K. literature, a tendency to include certain activities from the transport and distribution sector of the Standard Industrial Classification is apparent, the choice of which often appears somewhat ad hoc. Despite these differences, however, there is, in general terms, sufficient common ground to allow comparisons to be made.

1.3 The Theoretical Basis of the Literature

Just as differences exist between authors in terms of definition so do differences exist between the theoretical treatment of producer services in the literature. The space given to theory ranges from none at all to, at best, a few pages with the exception of Daniels (1985). This may at least partly be due to the relative novelty of the concept of producer services dating from Greenfield (1966) which means that it post dates most of the (potentially) applicable theoretical work, even more so when it is realised that this group of services was more or less ignored until the late 1970's.

Of the theories which are considered, however, central place theory appears in several cases. In the U.K. literature, central place theory is examined by Marquand (1983), Green (1985), Green and Owen (1985) and Daniels (1985). All four focus upon the idea of the existence of a minimum market size threshold for each service activity so that services which attract purchasers from a wide area, usually those services which are most specialized, will be found in the largest cities while those which have a smaller market area will be found in cities further down the hierarchy. The first three of these reject central place theory as being relevant only to consumer services although they provide no strong evidence for doing so. Daniels, however, explores its implications in more depth. He hypothesizes that, in accordance with the model, producer services will concentrate in central places due to the comparative advantage bestowed on such areas by their accessibility to the nation as a whole whereas distance will inhibit the location of producer services in peripheral regions. The extent to which this is indeed the case will be examined in section 1.5 together with the rest of his work.

A constructive attitude towards central place theory is also apparent in the U.S. literature which uses it as a basis for an amended hierarchy of cities defined in terms of functional specialization. This process begins with Stanback (1979) who distinguishes between generalised or nodal and specialised or non-nodal central places. The former provide a wide range of services to a restricted hinterland while the latter produces and sells

a narrower range of goods and services to a wider, perhaps national or international, market. This hierarchy is then extended by Stanback et al (1981) who identify five main types of centre. These are: nodal centres, sub-divided into national, regional and sub-regional nodal centres, which are both strongly specialized and diversified in distributive services and the complex of corporate activities; functional nodal centres; government and education centres; production centres, including manufacturing, industrial-military and mining centres; and residential centres. Finally, Noyelle and Stanback (1984) restructured this hierarchy and identified four types of cities each with their own separate characteristics - diversified service (or nodal) centres, specialized service centres, production centres and the 'consumer-oriented complex'.

Perhaps the most significant use of central place theory is to be found in Pederson (1986). In his study of Esbjerg in Denmark Pederson reasons along the same line as Daniels (1985) but was forced to adapt central place theory as a result of his findings. It appeared that while, as expected, less specialized producer service functions were ubiquitous the more specialized functions were not necessarily only provided by the highest level centres. Thus the observed pattern only partly corresponded to central place theory.

Moving on now to the other theories considered in the literature, export base theory also appears quite frequently, although at a fairly superficial level, being mentioned by Fothergill and Gudgin (1982), Marquand (1983), Stanback et al (1981), the Producer Services Working Party (1986) and Daniels (1983a, 1985, 1986b). All of them, however, make the potentially important point that although manufacturing has traditionally been regarded as the basic (exporting) sector services may also be exported between regions. This is perhaps best expressed by Daniels (1985) who states that

> *"Under appreciation of the job-creating potential of service industries has a long history which has been consolidated by theories of growth in which a distinction is made between basic and non-basic economic sectors, generating local or regional income through exporting their output. Non-basic activities are simply the result of growth that has already taken place in the basic sector industries and are, therefore, 'passive'. Services are considered part of the non-basic sector."* (p. 14)

Despite this, however, Marquand and Stanback et al do not explore this idea further and Fothergill and Gudgin revert to the traditional approach. The extent to which Daniels and the Producer Services Working Party follow up this idea can be seen in section 1.5.

Information diffusion theory is considered by Marquand (1983), Green (1985), Green and Owen (1985) and Daniels (1983a, 1985). The core argument of information diffusion theory is that those services which depend a great deal upon the receiving and dissemination of information will locate close together in order to maximise agglomeration economies in areas with good communication networks which make their task easier, usually large towns or cities. Producer services are placed in this information-intensive category and thus are likely to be spatially concentrated. Daniels (1983a) indeed argues that given that the highest growth sectors within services have been in the information/knowledge processing industries this theory may well be the most effective one in explaining the location and performance of such services. Although these services will be located in urban areas these areas need not, contrary to central place theory, necessarily be at the top of the hierarchy.

Finally, a group of 'miscellaneous' theories which appear in only one source can be identified. These include 'gravity models', which estimate service catchment areas based on population, and bid-rent theory, which establishes intra-city location, which are both to be found in Daniels (1985); core-periphery models of the 'staple' or resource based economy and growth pole theory in Ley and Hutton (1987); network theory in Noyelle and Stanback (1984); and the theory regarding the spatial division of labour in Green and Owen (1985). Some of these theories are examined together with central place, export base and information diffusion theory in Chapter Three.

It is apparent that so far no-one has examined a wide range of theories in detail. The only firm conclusion which can be drawn from this section is that producer services are expected to be concentrated in large cities. Little theoretical explanation of their role in, say, contributing to urban growth appears to have been attempted. The theoretical base of the

literature is weak and little attention has been paid to theory relative to the much stronger emphasis placed on empirical work, the results of which are examined in the following sections.

1.4 National Trends in Producer Services

1.4.1 Background

The share of the service sector in both employment and output terms has risen almost continuously in most Western economies during the twentieth century. A comprehensive study of this phenomenon in terms of cross-national data for seven countries is to be found in Singelmann (1978). As far as producer services are concerned he found that although this group of industries generally had the lowest share of employment of all sectors it was experiencing rapid growth with its share at least doubling in all seven countries between 1920 and 1970, the fastest growth rate being 500% in Japan. In most cases an initial movement from manufacturing to distributive and personal services takes place followed by a movement towards producer and social services as per capita incomes rise.

1.4.2 National Trends in the U.S. Literature

The backbone of U.S. literature regarding producer services over the last ten years has been a series of books and articles authored or co-authored by Noyelle and/or Stanback and by reviewing them chronologically we can trace the development of the analysis of producer services in U.S. literature. These sources are concerned with all the industrial sectors but here we will consider their implications for producer services/the complex of corporate activity alone, except where other sectors have a crucial bearing on this group of industries/activities. Case studies of individual industries or cities will be reviewed in section 1.5.

Stanback (1979) estimated that by 1976, producer services accounted for 27% of all intermediate output in the U.S., far more than in the base year 1950. A number of reasons

were put forward as possible explanations of this growth: the cost advantages and flexibility of output which the 'contracting out' of producer services functions can provide; the need for specialist expertise in introducing new processes, for example, computerization; the increased complexity of managerial decision making as firms have become larger, more diversified and more greatly involved in overseas trade; and, finally, increased government regulation has increased the need for firms to have access to, for example, specialist legal and accountancy services.

Whichever reasons for the increased demand for producer services apply, it is apparent that such services are unevenly distributed nationally at least as far as the most specialized services are concerned. Producer services are concentrated in the largest cities, and perhaps surprisingly, a heavy concentration of manufacturing industry in an area does not necessarily imply a large number of producer service firms. In some such areas very few producer service firms are to be found. Two possible reasons for this are identified: firstly, such services may be provided in-house by the manufacturers, and, secondly, these services are centralised at the corporate headquarters which usually being located in large cities will draw, if necessary, on producer service firms in their immediate area rather than those near their branch plants. If the latter is the case we would expect agglomeration economies to exist in large cities which will have large numbers of both corporate headquarters and producer service firms. This is borne out by the evidence he presents that those cities which already had large numbers of producer-service firms in the 1960's are the ones which have exhibited the greatest expansion of such firms in the 1970's in terms of both their absolute numbers and the range of services provided to their clients.

Stanback et al (1981) examines two specific hypotheses with respect to producer services. Firstly, that a shift from blue-to-white collar employment and the application of new technology has made it easier for plants to be run at a distance and hence has increased the concentration of activities at central office level. This in turn has created a need for firms to establish in-house producer service departments and/or employ producer service firms to co-ordinate company administration, planning and policy. Secondly, the growth of

producer service activity has been reinforced by increased government intervention in the economy - directly through, for example, financing foreign trade, and indirectly through, for example, anti-trust legislation, which have required greater access to financial expertise and to public sector agencies in order to protect firms interests respectively. The evidence they present provides some support for these hypotheses. Further, they make explicit the idea of producer service provision being a dynamic process. As a firm grows and managerial centralisation leads to a more complex decision-making process the firm will increasingly require specialist advice which can either be provided in-house or 'bought in' from producer service firms. In each case there will be some threshold level at which such activity becomes feasible and it would be expected that this level would be higher for the former than the latter. The common sequence of events is envisaged to be as follows: a large firm creates its own producer services departments but at some point in time it becomes profitable to 'hive-off' some of these services to become companies in their own right whose services are then available to other firms. There is, however, a continuous re-appraisal of the value of providing in-house services.

Finally, Stanback et al (1981) re-iterate the need for a dynamic model which can adequately explain the changes which have taken place and are taking place in relation to services and provide a few tentative indications of possible factors to be considered, their 'building blocks'. These include: technological innovations, especially in the field of communications; increased specialisation of business activities; the effects of urbanisation; growth of knowledge; and the role of government.

Using Stanback et al's (1981) classification of cities (see section 1.3) Noyelle and Stanback (1984) use location quotients to determine the degree of specialization of each Standard Metropolitan Statistical Area (SMSA) in each industry grouping. They find that nodal centres are the most specialized in providing a variety of intermediate services with high location quotients for transport, communications and utilities (TCU), wholesaling, finance, insurance and real estate (FIRE) and corporate services. In addition, over a half of them are specialized in central administrative offices and auxiliary establishments (CAO and

A) and non-profit services. Of the relevant producer service groups for other centres only corporate administration in the functional nodal centres, and FIRE and corporate services in the government and education and residential centres have above average location quotients. They also found that over the period 1959 to 1976 producer service activities exhibited the fastest growth rates and continued to expand in the centres in which they were already most concentrated. Finally, analyzing correlation coefficients between rates of employment in each industry for each group of SMSA over the same period they found that agglomeration economies and linkages were strongest in nodal places but became progressively weaker further down the hierarchy of cities.

In drawing their conclusions, Noyelle and Stanback argue that although the diversified and specialized service centres will maintain some level of manufacturing activity, manufacturing's role as the principal export base of these cities will be taken over by producer services, implying a change in the nature of inter-metropolitan linkages and growth transmission mechanisms. Overall, however, the future development of the complex of corporate activities is unclear due to conflicting movements between its components. For example, while there are tendencies towards centralization in banking and advertising, there are also tendencies towards decentralization in data processing. On balance, however, they conclude that there is likely to be only limited decentralization of high level service activities, mainly away from the largest diversified service centres towards smaller nodal and/or some of the specialized service centres.

1.4.3 National Trends in Canada

To date, relatively little work has been done regarding producer services and their role in the Canadian economy, most of which is in the form of case studies which will be examined in section 1.5.2. The exception to this, however, is Wood (1987). He found that Canada has a slightly different structure than other Western economies in that it still has a large primary/extractive sector. While the manufacturing sector continued to grow in the

1970's its relative share of total employment fell because of the faster growth of services of all types.

Using a wide definition Wood estimates that in 1981 some 22% of Canadian employment was in producer services, a growth of 67% over the previous decade, while national input-output tables showed complex interrelationships between the service and other sectors. From his analysis of the input-output tables and other sources Wood draws the following conclusions: firstly, although producer services tend to be concentrated in certain core regions this is more likely to be the case for information processing than materials handling services which are more usually available locally; secondly, materials handling services are more closely related to production activities than are information services; thirdly, there appears to be an apparently 'autonomous' growth of the information processing sector; fourthly, the essential contribution of services to production is clearly shown; fifthly, different services play different roles in the local economy; sixthly, he argues that more rapid technological and organisational change will take place in services than in manufacturing which will significantly influence the former's type and location; and, finally, services will come to be recognised as being increasingly important in employment terms.

1.4.4 National Trends in the U.K.

There is little doubt that producer services have been, and are, of increasing importance in the U.K. An international background to this phenomenon is given by Daniels, Leyshon and Thrift (1986) who estimate that in 1983 18% of world trade was in services with 7.5% of trade being in financial, consultancy and similar services, for which London is one of the dominant centres. The rate of growth for the financial, consultancy and similar services group at 14.25% per annum was higher than for any other trade group between 1968 and 1983. During this period the U.K.'s trade surplus in non-transport producer services has also grown rapidly until in 1984 it was equivalent to almost 3% of G.D.P. (£6 billion). Most of this trade emanated from the City of London whose overseas

earnings stood at £5,738 million in 1983 of which £2,754 million came directly from the fee earning activities of commercial services.

The growth of producer services in the U.K. is further reflected by figures given by the Producer Service Working Party (PSWP) whose report was published in 1986 and Marshall (1985b). Marshall estimates that by 1983 the service sector accounted for 64.2% of total employment and 28.8% of employment in manufacturing could be identified as being in service occupations. Both sources indicate that the growth rate of producer services has declined since 1973 reversing the previous trend but even so PSWP calculate that the rate of growth for producer services at 1.8% per annum between 1978 and 1981 was just over two and a half times that for the service sector as a whole. Industry differences were apparent, however, with other business services increasing by 242,000 jobs (341%) and banking by 185,000 jobs (104%) over the period 1959-81 compared to job losses of 229,000 (-59%) for railways and 89,000 (-59%) for ports and inland transport. Much of this growth, at least between 1971 and 1981, was in part-time employment, however, so that using full-time equivalents actual growth in producer service employment was 10.5% over this period.

Having briefly examined these national and international statistics let us now turn to specific macro-studies within the U.K. literature. Among the most wide ranging of these is Daniels (1985) which covers all types of service industries although only his findings with respect to producer services are of relevance here. As already mentioned in section 1.3 Daniels (1985) examines the applicability of the central place and information diffusion models to producer services. With respect to the former he finds that although as predicted consumer services are evenly spread across the study area, in this case the EEC, this is not so for producer services which exhibit a 'gradient' from the central to the peripheral regions. This takes the form of central regions, such as South-East England, central Belgium, the western provinces of the Netherlands, Paris and the Rheinland-Pfalz area having between 13.9% and 23.2% of their employment in this sector compared with 11.9% to 13.8% in Scotland, South East France and much of Denmark. The evidence with respect to information diffusion theory proved inconclusive principally relying on the idea that those

areas with high levels of business services maintain and even tend to increase their comparative advantage in these services as time progresses.

Moving on from these theoretical aspects Daniels (1985) argues that as producer service activities have become more specialized and need increasingly to be able to adapt to keep pace with new developments in information technology the flexibility and cost-effectiveness of 'buying in' such services as opposed to providing them in-house has become more widely recognised. At the same time firms have become larger which has increased the complexity of management tasks and hence led to a new demand for producer services. As a result, he argues, a symbiotic relationship has developed between headquarters establishments and producer service activities which has resulted in the development of a small number of dominant centres, including London, Paris, New York and Toronto, at the expense of regional development of producer services. At an intra-city level, moreover, producer service activities tend to be concentrated in the central areas such as the City in London and Manhattan in New York although in recent years 'suburbanization' of these activities is beginning to occur in the United States as is decentralization in the U.K.

Daniels (1986b) returns to the idea that producer services are likely to concentrate in central areas. For example, he notes that proportionately faster growth occurred in these activities in South East England between 1979 and 1981 than elsewhere in the U.K. increasing the area's relative over concentration of producer services still further. In fact, by 1981, the South East contained 66% of total national employment in advertising, 57% of that in computer services and 53% of that in business services. He also found that producer service employment was negatively correlated with the regional unemployment rate. In contrast, such employment was positively correlated with the regional share of GDP and the proportion of total employment in service industries. There was also a positive correlation between producer service employment and commercial office floorspace, the latter being expressed as a proportion of total floorspace in the region.

The locational trends of producer services and their tendency to concentrate in certain areas are further examined by Green and Owen (1985) and Gillespie and Green (1987). Both of these papers use CURDS nineteen-fold classification of local labour market areas (LLMAs). This classifies LLMAs according to their place in the functional region hierarchy, urban status, rank of metropolitan region and regional location. Using location quotients (LQ), Green and Owen found that at the beginning of their study period, 1971, London, the Conurbation Dominant and London Subdominant Cities had larger than average producer services sectors (i.e. a location quotient value greater than one) while London Subdominant Towns were just below average (LQ = 0.99). These results together imply that the London Metropolitan Region was massively over-represented in terms of producer service activities.

Disaggregating the producer services group revealed that over-representation of 'insurance, banking, finance and business services' was confined to London (LQ = 1.10) which accounted for 57.5% of all national employment in those activities; and that 'professional and scientific services' were over-represented in the London Metropolitan region, the Southern Rural Areas, Commercial and Manufacturing Towns while being severely under-represented in the smaller Northern Subdominants, Conurbation Subdominant Cities and Northern Manufacturing Towns. Green and Owen conclude from this that the concentration of producer service activities in 1971 was consistent with both information diffusion and central place theory.

Examining the changes which took place in producer service location between 1971 and 1981 they found that all nineteen LLMA classes increased their employment in producer services over the period, ranging from an increase of 96.44% in Southern Manufacturing Towns to 14.73% in London. Even so it was London and the Southern Freestanding Cities which made the largest absolute gains in producer service employment. The location quotients calculated for 1981 showed that London was still highly over-represented in producer services although to a lesser extent than in 1971 (1971, LQ = 2.04; 1981, LQ = 1.85). Despite this they accounted for 15.97% of total employment in London in 1981, an

increase of 3.28%. Over-representation increased, however, in the Conurbation Dominants and London Subdominant Cities and Towns which implies there has been some intra-regional decentralization in the South-East. Despite this the location quotient for the London Metropolitan Region as a whole declined from 1.79 to 1.63. In other areas all of the LLMA classes except Northern Rural Areas, Northern Service Towns and Southern Commercial Towns increased their representation of producer services.

Carrying out the same disaggregation as for 1971, Green and Owen found that the 'banking, insurance, finance and business services' group was now over-represented in the London Subdominant Cities. In addition, London and the Conurbation Dominants were still over-represented but had decreased and increased their location quotients respectively. London still accounted for 36.6% of total employment in this group, however. Under-representation of these services decreased in all other LLMA classes except for the Service Towns, Northern Commercial Towns and Northern Urban Areas. The 'professional and scientific services' group increased its over-representation in the London Subdominant Towns, Southern Service Towns and Southern Rural Areas over the period while over-representation declined in London, London Subdominant Cities and Southern commercial towns. In addition, Northern Rural Areas became under-represented and the degree of under-representation increased in Conurbation Dominants, Southern Manufacturing and Northern Service Towns. Thus there is evidence of reduced concentration in both these groups and this was largely confirmed by disaggregating still further to individual industry level. Green and Owen conclude that overall there has been a decentralization of producer services over the decade 1971-81. Despite this, however, London was still by far the most important producer services centre.

These conclusions are reinforced by Green and Gillespie (1987) who found that in the case of multi-branch firms much of their demand for business services was transmitted from branches to their head office. As these head offices tended to be concentrated in London and the South East this behaviour exerts a centralizing influence upon the location of producer services in the U.K. This is, however, partly offset by decentralizing influences

through the dispersal of less specialized and/or less contact-intensive services and the differing characteristics of certain industries, for example research and development which has grown most rapidly in the 'satellite towns' around major cities.

Reproducing and extending the analysis of Green and Owen (1985) Gillespie and Green estimate that although producer service employment was rising throughout the 1971-81 period only four of the nineteen LLMA groups had a positive net balance when producer service and manufacturing employment changes were added together - Southern Rural Areas, Northern Rural Areas, Southern commercial and Southern service towns. Thus, producer service growth was strongest in those areas which suffered least from manufacturing decline so that regional inequality in the distribution of employment has been reinforced by these changes.

Finally, looking at locational trends in individual industries they found that some differences exist. Insurance is becoming increasingly concentrated in the metropolitan regions and especially in London; little change was observed for banking which continued to be strongly over-represented in London as was also the case for the other financial institutions; decentralization from the London core appeared for property owning and managing, advertising, market research and other business services; little change was observed for accountancy, except for a slight intra-regional decentralization within the South East, and legal services, except for increased concentration in metropolitan areas; and a general diffusion of research and development activities into the wider South East became apparent.

The locational characteristics of producer services at national level are also examined by PSWP (1986) which was mentioned earlier in this section with respect to statistical trends in national producer service employment. This report represents the most comprehensive study of the U.K.'s producer service sector to date. After exploring the definitional problems of producer services, which are examined in Chapter Two of this thesis, they opt for a broad definition which ranges from personnel and administration through transport and

maintenance to financial services. A study of national trends in producer services then follows as a result of which they argue that the observed increased share of producer services in total employment may, despite the decline in other sectors which automatically raises the producer services share, indicate that over time a given level of national output requires an increasing level of intermediate service inputs and/or that slower labour productivity has occurred in office-based producer services compared with other sectors of the economy.

In terms of locational characteristics they show that while the distribution of services generally is more even than for manufacturing, that for public and producer services corresponds more to manufacturing than to services. Producer services are again found to be spatially concentrated in the South East, especially London, while under-representation is greatest in the North and West of England and Wales. Growth between 1971 and 1981 was fastest in the South although relative decentralization to surrounding regions was taking place as growth in the South East was below the national average. Intra-city decentralization also appeared for the larger metropolitan regions.

From here PSWP (1986) go on to examine several case studies which will be covered in section 1.5 below. Summing up, PSWP conclude that although some producer services, especially in the financial sector, have their own dynamic processes based on export earnings, "a dynamic manufacturing sector is a prerequisite for strong, well balanced producer service employment growth" (p. 282). They further note that producer services are in a sense increasing the North/South divide by growing fastest in those areas where manufacturing has declined least, in particular with respect to 'control' functions in head offices in a process which is self-reinforcing. Thus the analysis of producer services can be seen to have wider implications for the economy as a whole.

At a more theoretical level Faini (1984) argues that the economic performance of a region is likely to be affected by the cost and/or availability of producer services, whose productivity growth has been higher than that for services generally, which in turn may be affected by technological conditions. He argues that for capital intensive producer services,

for example transport, increasing returns to scale are to be expected but that the position is less clear cut for, for example, professional services which are labour intensive. Opportunities for scale economies in the form of specialisation of labour do exist for the latter group, however, as does the possibility of decreasing costs for information-intensive services through the implementation of new technology. Overall, he argues, the available evidence suggests that increasing returns to scale prevail in the production of such non-traded inputs. This being so a cumulative divergence of regional growth rates will take place as investment and export activity in less developed regions will tend towards sectors with low service input requirements. As a result, the multiplier effects on the local economy will be small, the limited availability of services will restrict industrial development and lack of demand from indigenous industry will limit, or even prevent, any expansion of the region's service sector. This circular effect implies that the pattern of industrial specialization and the achievements of the traded goods sector will not, therefore, be exogenous but will depend upon the degree of sophistication in regional provision of non-traded inputs.

The final paper of this section is that by Driver and Naisbitt (1987) who examine U.K. service industry employment to find out if cyclical variations like those for manufacturing exist for other sectors. Their model relates employment in an industry to a time trend representing exogenous factors, such as technical change, and to deviations in GDP from trend. The coefficient on the time trend represents the differences between the trend rates of output and productivity and hence would be expected to be negative for those sectors in which employment has fallen. They aggregate Minimum List Heading employment data for the period 1959 to 1982 into six services groups: consumer, mixed, producer tradeable, producer non-tradeable, producer (the sum of the previous two) and public services. Regressions were also run for the primary, manufacturing and construction sectors, the last of which exhibited the greatest degree of cyclical variability compared to the lowest for public services. Manufacturing, as expected, showed a highly volatile cyclical response but only producer tradeable services did so among the service categories. The cyclical response for producer tradeable services was higher in both the short and the long run than that for non-traded producer services, a phenomenon which they argue could be due to the

fact that the former largely includes discretionary expenditure, for example advertising, which is inherently likely to be more variable. Splitting the study period into two parts, 1959 to 1973 and 1974 to 1982, they found that although all the service groups exhibited a positive time trend for the former differences appeared for the latter. Fast growth continued for the consumer and mixed services group but the producer services trend declined, perhaps due to the lower demand from manufacturing, whose time trend was consistently negative, and/or because of increased efficiency in this sector. Overall, it appears that service employment is less prone to cyclical fluctuations than non-service employment but producer tradeable services do show some cyclical variation. In turn, even non-traded producer services show more variability than the remaining service groups. Thus producer services are in a sense 'different' from other services.

1.4.5 National Trends in Mainland Europe

Relatively few papers are available with respect to producer services in mainland Europe all but one of which have been published in the last three years and which concentrate on case studies of individual areas in the countries concerned. Thus there is very little material available with respect to national trends. Broadly speaking, however, on the evidence given by Marquand (1979) it appears that the growth of producer services and their concentration in large cities follows much the same pattern as that already examined for the U.K. More specifically Bailly, Maillet and Coffey (1987) note that in Switzerland service activities in general, and producer services in particular, are concentrated along the Basel-Zurich axis while a hierarchy of such activity exists headed by Zurich, followed by Geneva and Basel. For Denmark, Pederson (1986) indicates that business services showed rapid growth in the country as a whole between 1972 and 1982 but that half of all business service activities were to be found in the Copenhagen region alone.

1.5 The Case Studies

1.5.1 The U.S.

The shortage of case studies in the U.S. literature means that only three will be considered in this section. They do, however, provide contrasting approaches to the study of producer services. The first by Stanback and Noyelle (1982) compared seven cities - Atlanta, Buffalo, Charlotte, Columbus (Ohio), Denver, Nashville and Phoenix - in terms of their population size (three tiers - greater than a million, between 250,000 and a million, and less than 250,000) and industry sector characteristics. The four largest cities - Atlanta, Columbus, Denver and Phoenix - were found to be characterized by relatively high concentrations of corporate offices and producer service activities as well as other service activities. Only in Columbus was the manufacturing sector an important source of employment. The second tier cities - Charlotte and Nashville - have attracted some high level producer services but are especially strong with respect to distributive services. Finally, Buffalo is still dependent on manufacturing. Stanback and Noyelle conclude from this that each centre must be considered in the light of its functional role in the urban hierarchy and its own history of development.

The second case study, in Noyelle and Stanback (1984), is industry rather than city based. It examines the role of corporate offices, financial institutions and freestanding producer service firms, that is disaggregating the complex of corporate activity in order to assess the importance of its component parts.

Their examination of the role of corporate offices was based on data relating to the Fortune 500 largest industrial firms plus the fifty largest transport companies, the fifty largest utilities and the fifty largest retailing firms (the Fortune 650). From a sample of these corporations they estimate that only two to five per cent of these companies total workforce is employed in divisional head offices. In spatial terms, corporate head offices tended to be heavily concentrated in nodal and functional nodal centres, regional sales headquarters in regional nodal centres and divisional offices were located in a large number of places.

Financial institutions were divided into three types: commercial banks, life insurance companies and the financial divisions of non-financial firms. One hundred and thirty seven of the "Top 250" commercial banks were headquartered in the twenty-seven largest banking centres of which New York dominated, alone controlling 23.4% of total U.S. commercial bank deposits. The four national nodal centres together controlled 42%, a substantial rise from the 28% they held in 1960. Of the fifty largest life insurance firms, which together held 80% of total assets of this industry in 1976, twenty, which themselves held 82% of the assets of the top fifty firms, were located in the seven largest life insurance centres. The largest centre was again New York (34.7%). Finally, they found that the financial divisions of non-financial firms were concentrated in the four national nodal centres (36%), twelve of the regional nodal centres (22%) and six of the functional nodal centres (18%). New York (17%) and Chicago (15%) were the most dominant centres which in turn shows the comparative weakness of Los Angeles and San Francisco in this field. These figures again indicate a relatively high concentration of activity.

Two free-standing producer services, accountancy and advertising, were chosen for detailed analysis. In 1976 the "Big Eight" accountancy firms were employed by 85% of the corporations with a stock exchange listing; had revenues of over two billion dollars, representing a third of all the industry's revenue; and accounted for 20% of total employment in the industry. All eight firms had field offices in the four national nodal centres, the nineteen regional nodal centres, the three largest functional nodal centres and the largest government centre (Washington D.C.). The advertising industry appears to be even more concentrated, however, especially in New York where thirty-seven of the top fifty advertising firms, which controlled 70% of the industry's revenues, were based in 1976. Of the top 200 firms, 96 were New York based and most of the rest had their head offices in the other national nodal centres or the largest regional and functional nodal centres, very few had offices outside of these areas.

Noyelle and Stanback conclude from their case study of elements of the complex of corporate activities that such activities exhibit a clear hierarchical structure in which size is

an important variable but is insufficient to provide a complete explanation of the phenomena observed. (Only life insurance companies did not adhere to this hierarchy.) Producer services as a whole tended to be located in the nodal and, to a lesser extent, functional nodal centres while being almost non-existent in the production and consumer-oriented centres.

The third, and most recent, case study is that by Beyers and Alvine (1985). After initially identifying and contacting some 2,200 business service firms in the Central Puget Sound region they interviewed 1,105 of these in more detail. The selection was made on the basis of their market areas, those who had over 10% of their business outside the firm's immediate region being chosen for further analysis. Together these 1,105 firms employed around 85,000 people and accounted for 40% of total employment in business services in the area. The highest proportion of revenues derived from non-local sales were found to occur for transport services, research and development laboratories, insurance and real estate while the lowest were for advertising, commercial photography and bookkeeping services. It appeared in aggregate, however, that respondent's markets were becoming less localised and that they expected this trend to continue. No significant differences were found to exist in trade patterns between different size categories of firms or between those which were and were not headquartered in the Central Puget Sound region. Half of the firms interviewed were less than fifteen, and a quarter less than seven, years old while firms also tended to be small with a median size of fifteen employees. From their analysis Beyers and Alvine conclude that the business service sector probably does have significant non-local (export) markets. This includes links with clients in the large urban centres of New York, San Francisco and Los Angeles, contrary to the prediction of central place theory that the sales of these firms would be confined to clients in the surrounding region.

1.5.2 Canada

Only two case studies exist for Canada, Polese (1982) and Ley and Hutton (1987). The former surveyed 408 business establishments in Eastern Quebec in terms of their usage of twenty-four producer services ranging from construction to legal services. The use of

these services proved to be a positive function of size, that is, as a firm grows new service needs appear which can either be provided for within the firm, usually by its head office, or 'bought in' from outside firms. In order to measure these two different types of service provision Polese distinguished between intra-firm and inter-firm demand. Financial and business services were found to account for 68.1% of the former the other 31.9% being accounted for mainly by transport services. As far as inter-firm demand was concerned financial and business services accounted for 31.4%, engineering for just over a third and construction, repair services, transport and equipment rental for the remainder. Thus intra-firm demand is, he argues, largely characterized by a high level of "light" services which travel well and possess a high human capital and information content while the reverse is true for the "heavy" services which make up the bulk of inter-firm demand. In all, 95% of inter-firm transactions took the form of locally purchased services over 80% of which were employment and training services, construction and repair linked services, engineering services, and/or transport services. The remaining 5% of imported services were spread across a wide range of producer service activities. In contrast, only 6.5% of intra-firm service demands were satisfied locally with most being referred back to head offices elsewhere. Polese argues that these phenomena can be explained in terms of "normal" market competition between regions as Eastern Quebec exhibits a comparative disadvantage in terms of distance, its proximity to Montreal, and size relative to other regions. Further, he concludes that if his findings can be extended to other regions then it can be expected that an increasing proportion of inter-regional service flows will be made up of intra-firm transactions from head offices to branches, supporting the idea of the existence of complexes of corporate activity.

The second Canadian case study by Ley and Hutton (1987) examines the producer service sector in British Columbia with particular reference to Vancouver in terms of core-periphery relationships. Traditional dependence on the extractive sector has left British Columbia with a relatively underdeveloped manufacturing sector and a service sector largely directed towards materials-handling services. The exception to this has been Vancouver which has a comparatively diversified industrial structure including a relatively strong, and

growing, producer service sector. 'Downtown' Vancouver contains the head offices of virtually all the province's major business corporations where employees carry out a range of producer service functions while business service firms themselves account for 25-30% of the office space in the area.

Ley and Hutton interviewed representatives of 58 of the 65 major corporations with head offices in Vancouver and found that of thirteen specified producer service inputs most were obtained within the firm and/or within the city. Almost all of the corporations internalized most of their advertising, data processing, accounting and legal services although independent legal advice was taken regularly by 50% of them compared to 15% of each of the other three services. As expected, smaller head offices were more likely to externalize services but it is only for legal and miscellaneous services that more than 10% of corporations refer work outside of Vancouver.

Between 1961 and 1982 the number of employees employed by business and professional service firms in downtown Vancouver quadrupled. A postal questionnaire was sent to such firms to which 796 firms replied, a response rate of 22%. This figure was reduced to 626 by eliminating firms who sold their services exclusively direct to the public and a stratified sample of 88 of these firms taken in order to conduct more in-depth interviews. Together the questionnaire and interviews revealed that the firms were typically small with 40% having five or fewer employees and only 11% having more than 50 employees. Under half (43%) of the companies were over ten years old while other data indicated that a large number of very small firms had disappeared between 1984 and 1985. The interview sample alone showed that 67% of business by value was conducted with the service sector and 16% with each of the manufacturing and resource sectors. Only 5% of firms obtained a significant share of their inputs from sources within British Columbia but outside of Vancouver while 27% identified significant sources outside British Columbia almost entirely in other nodal centres. In terms of output, 71% of business by value was obtained from customers in Vancouver, 12% from elsewhere in British Columbia, 10% from the rest of Canada and 7% from abroad. As might be expected, firms with Vancouver head

offices had a wider geographical spread of clients than branch offices as did the more newly established and larger firms. Further, industries such as advertising, banking, accountancy and legal services tended to have much more localized markets than geological and engineering services, real estate and management consultancy. The most popular international export markets proved to be the U.S. (32%), Europe (15%) and East and South East Asia (11%).

Ley and Hutton conclude that activity in British Columbia is consistent with the core-periphery model, especially for the service sector, with the corporate complex in Vancouver providing a one way service flow to the rest of British Columbia. Further, the spatial distribution of the markets of producer service firms is strongly related to their size and type of service. The extension of these services into new markets may be the result of a plateau being reached in local markets, the growth strategy, or the need to obtain new customers at a time when provincial markets are in recession, the survival strategy.

1.5.3 The U.K.

A relatively large number of case studies of producer services in the U.K. have been undertaken among which two series, by different authors, can be identified. Those are Marshall (1979, 1982a, 1982b, 1983, 1985b) and Daniels (1983b, 1984, 1986a, 1987). In order to assess the development of each writer's work the two series will be considered separately although they have certain points in common.

Marshall's papers, with the exception of Marshall (1979) which looks at the Northern region and Marshall (1985b) which looks at wider locational trends, use data collected in both postal and interview survey form for Birmingham, Leeds and Manchester. The contents of these papers have two main strands: an examination of the corporate organisation of the producer services sector and the relationship between producer services and manufacturing industry.

With respect to the corporate organisation of producer service firms Marshall (1982b) in examining the following five producer services industries - accountancy, advertising, computer services, management consultancy and marketing - found that a hierarchical corporate structure centred on London was the norm. (Marketing was the exception as it was characterized by a large majority of single site firms, over 90% in both London and the provinces.) Given this conclusion he went on to examine the impact of this external control on Birmingham, Leeds and Manchester. It appeared that the greater the degree of external control the more difficult it was for local producer service firms to enter the market, partly because multi-site firms, both in the service and manufacturing sectors, tended to use national producer service suppliers where they were available, as did 57.4% of single site firms. He also found that regional branches of producer service firms had relatively little autonomy but that this varied between regions and industries. For example, branches in Manchester appeared to have more autonomy than those in the other centres and branches of management consultancy firms had greater autonomy than those of banks. A possible explanation for this may be spatial differences in the organisation of producer service firms.

As regards the corporate organisation of producer services in the Northern region, Marshall's earlier (1979) paper estimated that 76.6% of service suppliers to independent firms were located in the region compared to 30.6% of those to branch offices. Consequently, any extension of external control will again reduce the market share of local suppliers and make entry more difficult due to the tendency of branch offices in all sectors to internalize more of their producer service requirements. He also found that, in general, producer service offices obtain more of their maintenance, legal and computing services and less of most other services from specialist suppliers than manufacturing plants do. Overall he concludes that the extension of external control in the producer service sector is at least as important a constraint on local service sector development as the pattern of manufacturing branch demand. Further, corporate organisation affects the occupational structure of an area. Small, single site firms have the largest proportion of multi-function senior executives whereas multi-site firms as they increase in size have declining proportions of senior executive and secretarial/clerical staff counterbalanced by increasing numbers of middle

management and technical staff with the exception of head offices which retain a relatively high level of senior managerial staff.

Marshall (1983) looked at the corporate organisation of producer service industries in the most depth, however. Using a postal questionnaire survey for the following 'core' producer services - accountancy, advertising, architectural services, computer services, insurance, solicitors, finance companies, consultant engineering and management consultancy - and interview surveys for the last two of these, he computed measures for three variables - service firm organisation, market linkage and firm performance -which were then cross-tabulated and standardised for the effects of other factors. As a result of this procedure he found that the producer services examined were dominated by small offices, with an average of twelve employees per site, most of which were part of independent firms and relatively recently established. Multi-site firms accounted for 48.5% of the offices surveyed with an average of eight offices per firm but 8.3% had over a hundred offices. Branch offices accounted for 67.3% of all offices in multi-site firms. As expected their head offices were mainly located in London and the South East (71.5%) with a few overseas, mainly in the USA. His conclusions with respect to the implications of this degree of external control are the same as before.

Organisational differences between producer service firms were found to influence the markets in which they operate independently of the types of service provided. Small offices, single site firms, independent companies and head offices of multi-site firms had most links with private individuals; larger offices and multi-site firms were more likely to include both central and local government and nationalised industries among their clients; and branch offices and externally owned companies generally maintained the widest range of links with both service and manufacturing industries. Spatially, however, there were differences in the market areas in which producer service firms operated with solicitors, finance companies and insurance brokers obtaining 50-70% of their business from the local area (1-10 miles) as opposed to computer services which obtained only 21.8% of their business locally and approximately 30% of their business from the national market. Even so,

there was still a tendency for small offices and independent companies to obtain the largest proportion of their income from within the local area (44% and 46.8% respectively) and for multi-site firms to obtain most of their business from outside the local area (62.3%), although branch offices had more localised markets.

Relocation from other areas and the establishment of branch offices of regional or national firms created relatively little additional producer service employment between 1976 and 1980 in contrast to firm creation which accounted for 47.6% of new employment in this sector. In percentage growth rather than absolute terms, however, the establishment of branch offices of national firms increased employment by 44.2% over the base year figure as opposed to 28.1% for firm creation. Two conclusions were drawn from this: firstly, the importance of the movement of national service companies into the provincial conurbations is declining relative to that of firm creation and, secondly, the main difference between the two is that branch offices of national service organisations grow more rapidly, and for a longer period, after they are first established.

Differential growth rates in individual producer service industries can be used to help explain the divergence in overall producer service employment growth in the three conurbations. Between 1976 and 1980, Leeds which was relatively specialised in the three fastest growing industries - computer services, management consultancy and advertising - increased its employment in producer services by 39.1% compared to 32.2% in Manchester and 30.9% in Birmingham, despite having a higher than average proportion of the slow growing architectural and consultant engineering services. Differences in organisational structure between the conurbations may also have a role to play in this differential growth in employment. For example, Birmingham which has the lowest growth rate is also the most reliant on firm creation and in being the closest to London is likely to have a more restricted market area than the other two. Finally, Marshall concludes that in none of the three conurbations is the indigenous producer service sector strong enough to compete successfully against externally controlled firms, except in the case of service provision for private individuals. Thus there is likely to be an under-representation of producer service

employment in the provincial conurbations as branch offices are quite frequently used as collection points for work which is then passed back to their regional or national headquarters.

Turning now to the second strand, the relationship between producer services and manufacturing industries, we return to Marshall's (1979) study of the Northern region. He attempted to quantify this relationship in terms of an organisational effect, measuring the extent to which services were externalized, and a distance effect, measuring the distance from the plant to its main supplier of services. Ownership status (independent, subsidiary or branch establishment) proved to be the most significant explanatory variable for differences in the internalization of services between firms. The most frequently used producer services were almost always internalized with independent establishments carrying out most of these activities at their own sites while branch plants relied most heavily on other establishments within their firms. Otherwise, the suppliers of independent plants were mainly located in the Northern region while externally owned plants with a head office outside the region obtained most of their services from outside the region, in particular from London and the South-East. It also appeared that small plants, those in a stable environment and those with greatest autonomy, have more local service linkages than plants for which the reverse is true. Putting these results together Marshall concludes that the scale of the external ownership of manufacturing in the Northern region and the propensity for indigenous plants to carry out smaller absolute amounts of service activity is likely to restrict the development of the producer service sector in the region because of lack of demand.

Marshall (1982a) found, with respect to the links between manufacturing and producer services, that 57.3% of service requirements were internalized by the manufacturing firms surveyed and their total expenditure on producer services was only 1.2% of the firm's turnover on average. Firms which purchased few services tended to restrict them to accountancy, banking and insurance while large purchasers demanded more advertising, computing and consultancy services. In all cases more than three-quarters of total services were purchased within the relevant economic planning region, the remaining quarter mainly

comprising stockbroking, advertising, market research and management consultancy, were generally obtained from London. Manufacturing plants in the North West internalized the most services of the three regions implicitly considered and the West Midlands the least.

Industrial structure, size of establishment in employment terms and the extent of external control were found to be independent and additive influences on the demand for producer services. The level of demand and type of purchase also varied across industries. Large plants, those with a continuous production technology, those in multi-site firms, branch plants and externally owned firms tended to obtain producer services most frequently from their own organisations. No simple relationship between external ownership and service demand was discernible, however, due to the influence of other organisational factors. Despite this, two tentative conclusions can be reached: firstly, more service activities were carried out in externally owned single site firms and head offices than in independent firms and branch plants; and, secondly, the pattern of corporate control in manufacturing firms is reflected by their external service purchases and, in the case of multi-site firms, the degree of decentralization of service activity at individual sites within them.

At regional level more branch plants of manufacturing firms (66%) were found in the North West than in the West Midlands (48.6%). Correspondingly, 86.4% and 68.1% of producer services were internalized. Thus it appears that where the local producer services sector is constrained by lack of demand the percentage of branch plants in that region may be an important explanatory factor. It is also the case, however, that those branches whose head offices were in the same planning region, internalized less of their service needs than those with head offices outside the region. In this respect the North West is again disadvantaged as it has the smallest number of branches with head offices in the same region.

In his final paper, Marshall (1985b) builds on his earlier examination of the structure of the producer services sector (see above) in order to gain a broader picture of locational trends in the sector. He argues that producer services are the main contributors to spatial

variations in service employment. Citing the trend towards centralization of these activities in the Greater South-East he uses his previous work to suggest that the more peripheral areas, such as the Northern and North-West regions, can be expected to experience a continuing deficiency in producer services due to lack of demand, partly as a result of manufacturing decline and partly as a result of the observed over-representation of branch plants in these areas. He cites this as evidence in support of the hypothesis that a 'dual economy' is emerging based on the North/South divide.

At this point a paper by Green (1985) becomes relevant. This contains case studies of producer service activities in Tyne and Wear and Berkshire representing the North/South and periphery/centre dichotomies for the period 1971-81. Producer services are found, not unexpectedly, to be over-represented in Berkshire and under-represented in Tyne and Wear. Both exhibit growth rates in producer service employment which are higher than the national average but the higher base for the former implies that the gap between them in the provision of these services may be getting wider. This provides further support for Marshall's (1985b) idea of the development of a dual economy.

Having looked at the series of papers by Marshall in some depth let us now move on to those of Daniels beginning with Daniels (1983b) and (1984). Both these papers are based upon a postal questionnaire and interview survey of business service establishments located in the city centres of Bristol, Carlisle, Cheltenham, Edinburgh, Harrogate, Plymouth, Preston and Sheffield. The establishments were drawn from the following industry groups which were present in all eight towns - accountancy, advertising, market research, banking, building societies, credit and finance companies, insurance, quantity surveyors, solicitors, surveyors and valuers - which on average accounted for 78% of all establishments in each town. The response was biased towards small firms but little difference in response rate appeared between cities although when the data was disaggregated by city and industry some groups proved to be so small as to make statistical analysis difficult. Even so, Daniels is able to assess the sector's characteristics in some detail.

With respect to the location and growth of producer service activity Daniels (1983b) found that changes in the indigenous firm sector were most likely to be attributable to new firm formation in contrast to branch relocation/formation for non-indigenous firms. Need for space and proximity to markets were important influences in locational decision-making while growth was strongest in towns which were least dependent upon externally controlled establishments. The proportion of branch offices at 56% was highest for banking, financial services and insurance being more than three times that for professional services (18%). Just under half (45%) of non-indigenous offices were head-quartered in London.

Daniels (1984) looks specifically at the sources of input and destinations of output for these business services offices. Labour accounted for 70% of input costs in most cases with the remainder being made up of a variety of inputs ranging from specialist advice to office equipment. In the 50% of cases for which these latter types of inputs were externalized, almost all were bought within the local area while head offices proved to be the most important internal source. As far as output was concerned the majority of external clients were located near the office in question while the destination of output to other parts of the firm was more widespread. Overseas clients accounted for a very small proportion of business (2-5%) for 15-20% of firms but whether these were internal and/or external was not specified.

Overall, Daniels concludes that business service establishment's behaviour varies according to whether they are indigenous or non-indigenous; smaller cities performed better in terms of producer service employment growth; business services offices are strongly oriented towards the local and sub-regional economies for inputs and outputs, though this is less true for the latter than the former; and that the leakage of service demand by such firms to head offices outside the region is larger than the extra-regional market for the firm's services, especially in the smaller cities.

Moving on to Daniels (1986a) a narrowing of focus for the case study is apparent. Here he examines the presence of foreign banks in London and New York and their role in

metropolitan development. Banking has become more internationalized in recent years and has shown a tendency to concentrate much of its international activity in a limited number of 'world cities' amongst which London and New York are prominent. Between 1974 and 1984 the number of foreign banks in London rose from 264 to 403 and in New York from 114 to 307 with the majority locating in small areas of the City and Manhattan respectively. A survey of these foreign banks revealed that most had opened offices there to diversify their activities and/or improve client access while agglomeration economies in the form of proximity to other banks were also important. Only a third, however, identified the availability of producer services as an important factor in their location.

Corporate clients form the main source of business for the foreign banks in both cities, most of which were situated in the cities themselves. Only 42% of New York's foreign banks had private clients compared to 61% in London while the figures for governmental clients were 40% and 71% respectively. In general, the New York based banks had a wider local geographical spread of clients than the London ones as over half of the former had clients elsewhere in the New York area compared to only 30% which had clients outside London for the latter. Paradoxically, however, London based banks were more likely to have corporate clients overseas than the New York based banks.

An analysis of the use made of services by the banks surveyed revealed that marketing, accounting and computer services were usually internalized but where they were bought were purchased locally; insurance, legal and property services were predominantly externalized; and the use of advertising was evenly split between internal and external provision. In all cases purchases tended to be localized but given that both London and New York have large producer service sectors this is not perhaps surprising. Almost all the banks indicated that their use of services had increased in recent years and that they themselves expected to increase their activities in the next five years including expanding into other cities in the host country.

The last of the case studies by Daniels (Daniels, 1987) examines the role of producer service firms in Merseyside. A survey of firms characterised as likely or potential users of producer services in both the manufacturing and service sectors was undertaken. It found that while 95% of firms used accountancy, banking and insurance services only 20-30% used marketing, management consultancy and research and development services. The larger the firm the more likely it was to internalize its producer service needs without going to a head office outside the region. Most externalized producer services were bought locally, the degree to which this was the case varying depending on their availability with the most specialized being bought from outside the region. Suppliers were partly chosen on the grounds of cost and reliability but the most usual factor proved to be business inertia, that is, certain suppliers had "always been used". Increased use of producer services, mainly advertising, marketing, transport and computing, in recent years was apparent for which an increase in the firms turnover and/or the provision of new services was usually responsible. From this survey Daniels concludes that a distinction can be made between the demand for ubiquitous and specialized producer services as the latter tend to be bought in more frequently and from a wider area. Even so, the Merseyside economy appears relatively self-contained in this respect.

Finally in this section we turn briefly to the case studies to be found in PSWP (1986). The first of these examines the internationalization of producer services and has already been partly covered in section 1.4.4. Suffice it to say here that its examination of producer service activities in London reveals that they are growing rapidly and becoming more centralized as London takes on its role as a world city, phenomena which are likely to continue in the wake of the deregulation of financial markets. Secondly, in the light of the internalization/externalization debate (see Chapter Two) they examine the significance of non-production employment in manufacturing. The distribution of such employment proves to be uneven due to the concentration of high-level head office functions in the South East with routine activities being carried out elsewhere in branch plants. They estimate that by 1981 up to 43% of manufacturing employment was in non-production activities. The third case study covers a "blue collar", "goods related" producer service - physical distribution -

and the fourth a "white collar" producer service - financial services. Total employment has fallen for the former in contrast to the rise for the latter indicating the diversity of behaviour subsumed in a wide definition of producer services. This reflects the decline in manufacturing activity to which distribution is the most closely related and the restructuring of distribution as retailers have taken increasing responsibility for moving the goods they sell. The major role played by London in the internationalization of financial services has aided growth in this sector although automation may restrict, or even reverse, employment growth in future. The fifth, and final, PSWP case study looks at business services offices and the influence of service organisation on location. This shows that firms have responded to the growth of large client organisations and their changing demand for services by diversifying in terms of services provided and locations served, leading to the development of corporate hierarchies in most regions. Routine functions are widely obtainable and more specialized functions are bought in from wider afield so that a new network of service provision is being established.

1.5.4 Mainland Europe

Four case studies will be examined in this section perhaps the most detailed of which is Pederson (1986) who looks at business services in Esbjerg, Denmark. To examine the demand from manufacturing for business services Pederson uses the iron and metal industry as representative of manufacturing as a whole. Most firms were found to undertake routine services such as typing but to buy in others such as auditing, the degree to which they did so depending upon the structure of the firm, the local availability of the services and the firms ability to produce it themselves. Small and independent firms both bought and produced fewer services than large and externally owned ones while firms which exported a large amount of their product also tended to use more services and to obtain them from a wider area than those firms with a more localised trade. As the large firms can internalize more of their service needs those services which they do externalize tend to be specialist in nature and are often obtained from Copenhagen, especially if the firm's head office is located there.

As a follow up to this initial examination Pederson conducted a postal questionnaire survey to examine the use of business services in the county of Ribe, of which Esbjerg is the major city. He asked firms located in Esbjerg, Varde, Bramming and Vejen which of forty-seven specified services they had used within the last year, how they had obtained them, which type of business service firms had supplied them and where these suppliers were located. The sample was composed of all firms with 20 or more employees and 60% of firms with 6-19 employees in manufacturing and business service industries, a total of 474 firms of which 229 (48%) replied. Of these 71% were located in Esbjerg and 43% were manufacturing firms and 19% in business services, with construction, wholesale, transport and consumer service firms making up the remainder. Again the more routine functions such as typing and personnel recruitment were found to be predominantly internalized by individual offices while electronic data processing, accountancy and economic planning were, where applicable, generally supplied by the firm's head or regional office. Overall, the services most often obtained from service firms relate to economic, legal and insurance problems, personnel training, equipment purchase, construction, environmental problems, energy conservation, advertising and transport. In general, those services used infrequently, which require specialised knowledge or are capital intensive are obtained from business service firms. Averaging across services and firms only 40% of firms used services, 18% of which internalized them within their own offices, 4% of which obtained them from their mother firm and 18% of which externalized them. Again service usage varied with size of firm and destination of product while the location of suppliers depended upon firm structure and local service supply. Specifically, business service firms in Esbjerg supplied 69% of their services to clients in Esbjerg, with usage by local companies being higher than that for branch plants (54% to 15%), while the bulk of the remainder were supplied to clients in neighbouring counties with only 2% going overseas. The degree to which the Esbjerg business service sector can attract customers from its hinterland diminishes rapidly with distance as respondents in Varde/Bramming (20-25 km away) have 41% of their service contacts there compared to just 12% in Vejen (50 km away).

The second of the European case studies, van Dinteren (1987), was conducted on a wider scale as it examined the business service sector in thirteen medium-sized Dutch cities, defined as those with 50,000-200,000 inhabitants. In recent years this type of city has exhibited higher than average growth in business services but even so business service employment is still concentrated in the large cities in the west of the Netherlands - Amsterdam, The Hague, Utrecht and Rotterdam.

A postal questionnaire survey was carried out among 770 business services firms, who employed more than five people, in the thirteen cities from which it was apparent that advertising, consultant engineering and computer service firms were most likely to be indigenous and/or have a market outside the city for their product. In terms of service usage indigenous firms were more intensely orientated towards local producers and services than non-indigenous firms. For business services in general, manufacturing, business service firms and government were the main consumers together accounting for 55% of turnover. Between industries, however, differences were apparent with, for example, computer services obtaining 47% of their turnover from business service offices compared to 7% for consultant engineering. In some cases, firms have a small number of clients which provide a large proportion of their turnover making them very vulnerable to changes in demand for their output. Again for all business services 43% of sales weighted by turnover are to clients over 30 km away while industry variations show that some services are more locally orientated than others. Legal and 'other' services have predominantly local markets while computer services sell to the wider surrounding area and consultant engineering and advertising sell their product both nationally and internationally. Hence indigenous firms tend to have larger market areas than non-indigenous ones. Overall, therefore, it appears that business services are not completely reliant on local markets or on manufacturing industry as clients while externally controlled offices create smaller local multiplier effects and are more likely to internalize their service inputs.

The third paper in this series by Bailley, Maillet and Coffey (1987) takes a similar line. Using evidence obtained from the Swiss cities of Aigle and Delemont five groups of

services are identified according to the destination of their product; retailing and maintenance which serve only local demand; the research-engineering-finance and legal-insurance groups which export some of their services beyond the region; and the industrial sector which exports the most. The authors further conclude that indigenous firms are more likely to purchase services from local establishments than externally controlled ones but where specific services are not available locally either they will be imported or, in the case of important strategic functions, firms may move away from the area to one in which such services can be found. This being so, they argue that high-order producer services can play an important role in the economic structure of small cities which they contrast with the North American case where evidence suggests that such activities remain concentrated in the larger cities.

The final study in this section is that of Cuadrado (1986) which examined the role of services in general for regional development in the Valencia region of Spain. On the demand side he found that the use of business services by Valencian companies exceeded 50% with legal services, taxation, accounting and administrative and management services displaying the highest levels of use in contrast to low usage of share placement, management control and industrial engineering. Less than half the companies surveyed, which themselves only covered five manufacturing industries, externalized their service demands except in the case of assistance and advice in all their forms, marketing and transport where quality and/or cost were the principal decision making factors. It appeared that commercial, communications and information based services were likely to exhibit the fastest growth in future demand.

On the supply side there has been considerable recent growth of business services in Valencia but the limited 'take up' of these services might reflect limited quality and/or an inability to adapt to market requirements. Where obvious deficiencies do exist public or institutional service provision is being encouraged although in addition some 23% of local private companies saw the need to expand their range of services, 28% to increase provision of existing ones, 20% to mechanize service production and 29% to introduce their product into new markets. Specialization of services appears likely for accounting and labour

advisory services, diversification for information technology services and market research, and the offer of integrated packages for insurance and advertising services.

1.6 Conclusion

After a relatively slow beginning interest in producer services has been rapidly gaining momentum, especially in the last two to three years. There is little doubt from the literature that the producer service sector is expanding rapidly in western industrialized countries, is becoming more internationalized and has an increasingly important role to play in economic development.

The existence of differential growth rates between parts of this sector, for example as shown by PSWP (1986), illustrates the heterogeneity of activity within this sector encompassed by a wide definition of producer services. This problem of definition was briefly addressed in section 1.2 where the distinction was made between the North American and European approaches. The former includes 'central administrative offices and auxiliary establishments' of firms and social services together with the 'core' group of producer services identified in section 1.2 while the latter includes some transport and distribution activities. The multiplicity of definitions and the heterogeneity of the services included therein to some extent blur the edges of the subject area to detrimental effect.

Section 1.3 points to another shortcoming of the literature - its lack of a theoretical base. Although, for example, central place and export base theory are mentioned by some authors many of these dismiss them with little further thought. Indeed, of the U.K. work only Daniels (1985) treats such theories in any depth and he concentrates on central place and information diffusion theory in the empirical part of his text. Thus no rigorous treatment of urban and regional growth theories and their (potential) implications for producer services has so far appeared. Chapter Three of this thesis sets out to remedy this by examining a range of theories in some depth to determine whether or not they can be applied to

(advanced) producer service industries. This then provides the context for the empirical work which follows.

The remainder of this section will be devoted to a summary and analysis of the principal findings of the literature surveyed in this chapter. The first point to emerge from section 1.4 is the spatial inequality in producer service provision between regions. This is observed by studies as diverse as those by Stanback (1979) for the U.S.A., Wood (1987) for Canada, Daniels (1985) for Europe and Gillespie and Green (1987) for the U.K. All observe a concentration of such activities within a few dominant 'service centres', usually large cities and their immediate hinterlands. For the U.K. the unequivocal dominance of London is apparent. Moreover, there is a strong tendency for producer service activities to be concentrated in the central business districts of these centres - for example, the City in London and Manhattan in New York. In addition, at individual industry level the more specialized a service is the more likely it is to establish itself at a central location and the wider is its market area likely to be. As a result of this centralization, Noyelle and Stanback (1984) found, not unexpectedly, that strong linkages exist between firms in these areas leading to the establishment of agglomeration economies which in turn re-inforce the centralizing process. This appears to be offset, however, by decentralizing influences such as increasing costs in the form of high office rents and congestion in the city centres. Indeed overall, both Noyelle and Stanback (1984) for the U.S.A. and Green and Owen (1985) for the U.K. note that more recently there has been a trend towards decentralization in producer service activity. In the U.S.A. this has largely taken the form of 'suburbanization' whereas in the U.K. the move has been out of London and into the Greater South East. In both cases, therefore, such moves have been relatively localized.

The case studies re-inforce the point that producer services tend to be spatially concentrated. Indeed, Marshall (1985b) goes as far as to say that producer services are the main contributors to spatial variations in service employment and that the disparities in provision between the core (London and the South East) and peripheral regions are contributing to the emergence of a 'dual economy' - a point with which Green (1985)

concurs. At a higher level, Daniels (1986a) examines the locational behaviour of the international banking industry and finds it to be greatly concentrated in a few world centres of which London and New York predominate illustrating that disparities exist between countries as well as within them. It is, however, the existence of regional inequalities within a country, specifically the U.K., in which we are interested here.

These spatial inequalities in producer service distribution may be an indicator of or a contributory factor to differential regional economic growth rates. As indicators their role would be essentially a passive one - producer service establishments would locate in certain areas simply because these areas were exhibiting strong growth - whereas as contributors producer service establishments would themselves assist in the creation and/or perpetuation of growth. It will be argued later in this thesis that (advanced) producer services in fact play the second of these roles, that is, they contribute directly to economic growth.

This brings us on to the relationship between producer services, other industrial sectors and regional growth. At national level the studies by Stanback (1979) and the Producer Service Working Party (1986) contradict each other slightly with regard to the relationship between the producer service and manufacturing sectors. While the latter maintains (see page 16) that producer services need a "dynamic" manufacturing sector in order to grow, the former concludes that a strong manufacturing sector in a region does not necessarily imply that there will be a correspondingly strong producer service sector. He concedes, however, that this may be due to 'in-house' provision of such services or because such services are located near corporate headquarters rather than production sites. In both cases it is assumed that the manufacturing-producer service linkage is of primary importance.

Most of the case studies which consider the client profile of producer service firms also assume this to be the case (Polese, 1982; Marshall, 1979, 1982a; Pederson (1986); Cuadrado, 1986) although Marshall (1982a) does find that some producer service firms use small amounts of such services themselves. Daniels (1987) departs slightly from this view by

including some selected service firms as potential users of producer services on Merseyside but these are by far outweighed by those in the manufacturing sector and little distinction is made between the two sectors in terms of their use of producer services. The strongest challenge to this established view is to be found in Ley and Hutton (1987). They found that the service sector, not manufacturing, was the main source of demand for producer services in British Columbia. Indeed, their postal questionnaire and interview surveys combined showed that 67% of business by value was derived from the service sector compared to 16% each for the manufacturing and resource sectors. They argue, however, that this may be a 'special case' as the area has traditionally been dependent on the extractive sector while the manufacturing sector has remained relatively under-developed and the service sector has largely been directed towards materials-handling services. Even so, it represents a challenge to the received view of the relationship between the producer service and other industrial sectors.

The direct relationship between producer services and regional growth has so far only been explicitly examined by Daniels (1986b). Using regression analysis he found that the number of producer service jobs per 10,000 population in each region was negatively correlated with the regional unemployment rate and positively correlated with the regional share of G.D.P. This implies that those areas with the highest level of producer service employment are among the most prosperous in economic terms. As already discussed above, however, the causality of this relationship is unclear - do producer service firms locate in areas where growth is already strong or does their presence contribute to regional growth?

That producer services behave differently compared to other services was shown by Driver and Naisbitt (1987). They found that, at national level, producer tradeable services (advertising and market research, other business services, accountancy and research and development services), like manufacturing, exhibited a marked cyclical trend. Producer non-tradeable services (road haulage contracting, miscellaneous transport haulage and storage, dealing in other industrial materials and machinery, central office services not elsewhere allocable and other professional and scientific services) also showed a slight cyclical trend

compared to the other service groups but this was much lower both in the short and the long run than that for the producer tradeable group. They argue that the principal reason for the cyclical trend in producer tradeable services is that expenditure on such services is largely discretionary and so is inherently likely to be more variable. Thus, producer tradeable services at least appear to embody a characteristic more usually associated with manufacturing, a cyclical trend. If such services relied entirely on manufacturing industry demand for their product, however, a much stronger cyclical trend than in fact exists would have been expected. Thus although in line with the received view of inter-sectoral relationships, that there is a strong linkage between the manufacturing and producer service sectors, this result does not provide conclusive evidence of the primacy of this linkage.

Three other major areas of interest emerge from the case studies - the corporate organisation of the producer service sector itself, the way in which the corporate structure of client firms influences their demand for producer services and the extent of the market for producer services.

There is a surprising degree of agreement regarding the corporate organisation of the producer service sector. The sector can be divided into its indigenous and non-indigenous components within a region. The former is made up of independent firms and companies head-quartered in the region and the latter of offices which have their head-quarters outside of the region. In the U.K. non-indigenous firms show a strong tendency towards a hierarchical corporate structure centred on London (Marshall, 1979, 1982b, 1983, Daniels 1983b) while such establishments in the U.S.A. (Noyelle and Stanback, 1984) tend to be head-quartered in one of the four national nodal centres - New York, Chicago, Los Angeles or San Francisco. In general, producer service firms tend to be small and relatively newly established (Beyers and Alvine, 1985; Ley and Hutton, 1987; Marshall, 1983) but there are significant exceptions to this, particularly in the non-indigenous sector which includes a number of companies with large national and even multinational networks. The potential importance of the corporate structure of the producer service sector is highlighted by Marshall (1983) who argues that it will influence the markets in which a firm operates. In

particular, he notes that small offices and independent companies obtain a larger proportion of their income locally than is the case for multi-site firms, although branch offices also tend to have localized markets.

The corporate organisation of (potential) client firms is likely to be of greater importance, however, in helping to explain the differential usage of producer services between firms and between regions. Polese (1982) states that the use of producer services is a positive function of size, that is, as a firm grows so its service needs will expand. There will then arise the question of whether these service requirements should be satisfied internally (intra-firm) or externally (inter-firm). Polese argues that "light" services such as financial and business services will mainly be internalized while "heavy" services such as transport and equipment rental will be externalized. The former will make up much of the inter-regional trade in services being comprised of intra-firm transactions from head offices to branches. The most frequently used producer services will be internalized to the greatest degree whereas more specialized services will be bought in when required (Marshall, 1979; Daniels, 1987; Pederson, 1986). Pederson (1986) takes this a step further by concluding that small and independent firms both bought and produced fewer services than large and externally owned ones and that export-orientated firms also tended to use more services and obtain them from a wider area than those with a more localized trade. Marshall (1979 and 1982b) argues, however, that the greater the degree of external control of (potential) producer service purchasing firms the more difficult it will be for local producer service firms to enter the market because multi-site firms tend to use national producer service suppliers. This in turn re-inforces the under-representation of producer service employment as branch offices are frequently used as collection points for work that is then referred back to head offices outside the region. Despite this, however, Marshall (1982a) estimates that over three-quarters of producer service purchases made by manufacturing firms were made within the economic planning region in which they were located with the remainder, principally stockbroking, advertising, market research and management consultancy being obtained from London. These purchases reflect the pattern of corporate control in the firms surveyed, with branch plants obtaining most of their services within their own organisation.

This brings us directly to the final point to emerge from the literature - the extent of the market area for producer services. In the past, services of whatever type have been assumed to have highly localized markets for their product. The limited evidence available for producer services suggests, however, that although local sales represent the major source of demand for producer services they do not account for all such activity. Marshall (1982a, 1983) and Daniels (1984, 1987) both found evidence that non-local sales were being made but that most producer service firms still had a large majority of clients in their local area. Differences between industries in terms of client location emerged in Marshall (1983), however, which found that whereas solicitors, finance companies and insurance brokers obtained 50-70% of their business from clients located within a ten mile radius only 21.8% of computer service firms' business was obtained from within this area while 30% was obtained from the national market. That some firms sell their services to a wider area still is illustrated by Daniels (1984) who found that 15-20% of firms had clients overseas although these accounted for a very small proportion of their total business, between two and five per cent. A similar phenomenon was observed by Pederson (1986). He found that, in aggregate, some 69% of the output of the producer service firms surveyed was supplied to clients in Esbjerg, 29% to the surrounding counties and 2% to overseas clients. Importantly, however, he also found that the ability of producer service firms in Esbjerg to attract customers from its hinterland diminished rapidly with distance. Among the other studies which have looked at the market for producer services Beyers and Alvine (1985), Ley and Hutton (1987) and van Dinteren (1987) have produced similar results. Of these, Beyers and Alvine (1985) is the most comprehensive. Alone among the surveys they considered market trends over time and concluded that, in aggregate, the markets of business service firms were becoming less localized and that there was evidence that a significant non-local (export) market exists, at least for the Central Puget Sound region.

Overall, therefore, the case studies indicate that the market for producer services is not wholly localized. Indeed, there is some evidence that the growth which has taken place in this sector has led to a corresponding expansion in market area. This is corroborated by

the increasing internationalization of parts of the producer service sector, for example banking as shown by Daniels (1986a).

A number of points have emerged in this section which can be summarized as follows:

a) there is a need to define what is meant by 'producer services' more precisely in order to achieve a greater degree of homogeneity of services included in this group;

b) a theoretical base for the study of producer services needs to be more firmly established;

c) significant spatial inequality exists in the distribution of producer service activity;

d) the relationship between the producer service and other industrial sectors needs to be explored further - a simple framework in which producer services are assumed to be heavily dependent upon manufacturing is not sufficient;

e) the relationship between producer services and regional economic growth needs to be examined more specifically;

f) the corporate organisation of the producer service sector and the corporate structure of firms which purchase such services are likely to influence the level of provision and demand for such services at regional level; and

g) there is some evidence that the market for producer services extends beyond the local area.

CHAPTER TWO

THE DEFINITION OF ADVANCED PRODUCER SERVICES

7.1 Introduction

As was indicated by section 1.2 above the definition of producer services varies between countries and even between individual papers. This phenomenon is further complicated by the way the terms 'producer services' and 'business services' are used interchangeable. For example, while Daniels (1984) uses the term business services to denote a specific sub-group of his wider producer services category, Pederson (1986) uses it to refer to a much larger group of services more akin to Daniel's producer services. In general, however, producer services is the most widely used.

2.2 The Theoretical Basis of 'Producer Services'

For many years the Fisher-Clark classification which divided industries into one of three sectors - primary, secondary or tertiary - remained unchallenged. The growth of interest in service industries during the 1970's led, however, to new classifications which distinguished between types of activity within the tertiary sector. Of these Singer (1971) was the first to make an explicit distinction between production and consumption services. He identified the following categories of services:

i) Production Services: commerce, transportation, communications and warehousing.

ii) Collective Consumption Services: government, education, health and other social services.

iii) Individual Consumption Services: professional services, domestic service, repair services and other personal services.

Singelmann (1978) refined this distinction further by listing the following categories:

a) Distributive Services: transportation and storage, communications, wholesale trade and retail trade.

b) Producer Services: banking, financial services, insurance, real estate, engineering and architectural services, accounting and book-keeping, legal services and miscellaneous business services. These are intermediate rather than final outputs.

c) Social Services

d) Personal Services

These definitions share the problem of a lack of a conceptual base - they merely enumerate those services which they think should be included. This failing is also true of subsequent variations of these classifications which have been produced. Marshall et al (1985) provide what appears to be the best definition of producer services available in the literature so far, their criteria being "those services which supply business and government organisations rather than provide individuals, whether in agriculture, mining, manufacturing or service industries" (p. 5). They then divide producer services into three types: information processing services, e.g. research and development, consultancy; goods related services, e.g. wholesaling and distribution; and personal support services, e.g. cleaning and catering. Their final list of components of the producer services group is as pragmatic as its predecessors.

2.3 The Issues Involved in a Definition of Producer Services

The principal problem in such a definition is that of ascribing services to a particular group. In the case of the distinction between consumer and producer services the most relevant factor is their market. Consumer services are those purchased by private individuals as opposed to companies which, whether they are in the primary, secondary or tertiary sector, constitute the main market for producer services, although such services may also be purchased by government organisations. This distinction is not necessarily clear cut,

however, as some service-producing organizations such as banks operate in both markets simultaneously.

In practice, the distinction between producer and consumer service activity in such circumstances is constrained by data availability, it being impossible to seperate activities within an individual Minimum List or Activity Heading of the Standard Industrial Classification. Consequently inclusion of 'mixed' activities like banking in the producer services group leads to an over-estimation of employment in the group, a problem which has to be balanced with the likely importance of these activities to companies.

Although in general producer services are regarded solely as private sector activities this is not in fact always the case. For example, government departments provide services to companies through regional development policies, small firm and employment initiatives while until recently much of the transport sector was held under government auspices, as is still the case with British Rail. Further, there are also activities which cross the public-private and consumer-producer divides. These include education and health where although the majority of provision is in the public sector there is a small but expanding private sector. In addition, although both of these services are regarded primarily as services to individuals they are also producer services in the sense that they 'maintain' the workforce.

The last point which needs to be made in this section is that of the distinction between internal and external producer service provision. Many of the activities generally characterized as producer services can be either produced by companies themselves or 'brought in' from other firms. Again due to the nature of the data available the degree to which the former occurs is difficult to determine except through case studies. In the light of this a useful distinction can be made between producer services per se and producer service industries.

2.4 Definition of Advanced Producer Services

The heterogeneity of service activity included in a wide definition of producer services, as used in most of the U.K. literature, has the drawback of disguising significant disparities in trends within the sector. This is illustrated by PSWP (1986) who found that employment in physical distribution services had shown a marked decline in contrast to a very rapid rise in employment in financial services over the study period. Moreover, the inclusion of parts of the distributive sector within the producer service group has been inconsistent.

In the light of this, a narrower definition of producer services is required in order to strengthen its conceptual base. Section 2.3 identified two core issues in this respect a) the market for and b) the method of provision of such services. The principal difference between producer and consumer services is that the former are directed towards corporate clients and the latter towards individuals. Producer services may be provided internally within a firm or purchased from an outside body. Alone, however, these two criteria are not enough to identify a cohesive group of services.

The next step is to consider the role such services play in the operation of the firm which purchases them. A distinction can be made here between services which make a (potentially) significant or a peripheral contribution to the production process. The former, for example research and development, play a key role in the firm's operation while the latter, for example catering, do not affect the firm's output. A further distinction can be made between services which play an intermediate role in the production process and those which constitute services to the final product. Prominent among the latter group are, of course, transport and distribution.

Services performing an intermediate role may improve the quality, design and/or performance of a product or indeed publicize or promote it. This being the case the following production function can be constructed for a firm which purchases such services:

$$Q = q\ (L,K,N,T,PS) \qquad (2\text{-}1)$$

where Q = output, L = labour, K = physical capital, N = land, T = technology and PS = producer services. In the short-run we would expect certain inputs to be fixed so that:

$$Q = q\ (L,\bar{K},\bar{N},\bar{T},PS) \qquad (2\text{-}2)$$

Thus the availability of producer services adds a potentially important flexibility into the production process and facilitates product differentiation.

In order to accommodate these distinctions the term 'advanced producer services' (a.p.s.) will be used throughout the remainder of this thesis. The advanced producer service sector can therefore be defined as including those services which are externally purchased (usually from the private sector), are directed at least partly toward the corporate market and have an important intermediate role in the production process. In addition, such services can be characterised as information intensive. This being the case, they may in the long run operate to alter the nature of the fixed inputs. For example, owning a dealing in real estate may affect the land input and research and development the technology input.

Having established the characteristics of the advanced producer service sector it remains to enumerate the services which are contained therein. At this point the constraint of data availability must be noted. Several of the services which satisfy the criterion of playing a (potentially) significant intermediate role in the production process also have a consumer service element. As no distinction is possible between these functions within the

relevant Minimum List of Activity Heading all such employment is allocated to the advanced producer service group leading to an over-estimate the size of which cannot be determined. This counterbalanced, however, by the omission of similar employment which occurs within firms allocated to other industry groups. Thus in practical terms the boundaries of the group are slightly blurred but this does not seriously affect the homogeneity of the group.

Specifically, those activities which fall within the definition of advanced producer services are:

	1968 MLH	1980 AH
Telecommunications and postal services	708	7902 and 7901
Insurance	860	8200 and 8320
Banking	861	8140 and 8310
Other financial institutions	862	8150 and 8310
Owning and dealing in real estate	863	8500 and 8340
Advertising and market research	864	8380 and 8395(2)
Other business services (including computing services and management consultancy)	865	8394 and 8395 (except 8395(2))
Accountancy services	871	8360
Legal services	873	8350
Research and Development	876	9400
Architects, surveyors and consulting engineers	879(1)	8370(1)
Other scientific and technical services	879(2)	8370(2)

How then does my definition compare with its predecessors? The relative narrowness of the advanced producer services group has already been mentioned. It omits transport and distribution on the grounds that they are unlikely a priori to contribute significantly to

regional economic growth due to their ubiquity and their high degree of substitutability while at the same time they are largely 'low-level' capital intensive services which lie outside the scope of the definition. Their exclusion should therefore reduce any possible disparity in statistical trends within the group.

Of the other services, banking, insurance, financial and legal services operate in both producer and consumer markets. All, however, have at least the potential to be key factors in a firm's operation, for example in providing investment advice and risk finance, and for which there appears to be increasing demand as the rules under which firms operate become more complex. Telecommunications are by their very nature information-intensive and given current trends are likely to become increasingly important to firms in the future as they facilitate the transfer of information between company offices as well as providing links between firms and their clients. Postal services also fulfil this role but are mainly included because of their inseparability from telecommunications in the 1968 Standard Industrial Classification.

2.5 The Importance of Advanced Producer Services

In the de-industrialisation debate of the late 1970's (Blackaby 1979) one of the arguments put forward (the "Cambridge View") was that both demand and supply side factors were operating to bring about the decline in manufacturing employment and output in the 1970's and now the 1980's. On the demand side, Britain's high income elasticity of demand for imports relative to the rest of the world's income elasticity for U.K. exports came under scrutiny. On the supply side it was argued that, partly because of the weakness in demand, Britain was unable to exploit the same economies of scale which its competitors enjoyed. In addition, many goods were believed to exhibit the negative characteristics of poor quality, design and performance. As advanced producer services are an intermediate input into the production process they are, therefore, (potentially) important supply side influences.

If this is the case then the same may be true at regional level so that disparities in economic performance are reflected by the distribution of producer service employment. Evidence for this point of view can be found in the work of Marshall (1985) and Green (1985) whose analyses shows that those regions with the strongest manufacturing base also have the highest level of producer service activity.

2.6 Conclusion

Building on section 1.2 I have explored the problem of defining producer services in more depth in this chapter. The result has been the formulation of my own definition - the 'advanced producer services' group which, in being narrower than the producer services group, has the advantage of a greater degree of homogeneity. Again admittedly the theoretical basis of the definition is rather weak but this appears unavoidable given the nature of the subject. Nevertheless it provides a clear workable basis on which my research can progress.

CHAPTER THREE

THEORIES OF URBAN AND REGIONAL ECONOMIC GROWTH AND LOCATION

3.1 Introduction

Having discussed the definition of advanced producer services in the previous chapter it is now time to consider the second problem identified in the literature survey, that of the lack of a strong theoretical basis for the work which has been done in this area to date.

This chapter attempts, therefore, to assess the contribution existing theories of urban and regional economic growth and location can make to the understanding of advanced producer service activity. One potential problem in this respect is that most of the theories to be examined are specifically directed towards manufacturing industry which has for a very long time been considered to be the principal growth generating sector of the economy to the exclusion of the service sector. Thus although some of the theories may be amenable to the incorporation of advanced producer services others will not and will have to be abandoned.

Three groups of theories can be identified: those which are demand-orientated, supply-orientated and information based respectively. Each of these groups is examined independently in the next three sections and their combined implications for the study of advanced producer services outlined in section 3.5.

3.2 Demand-Orientated Theories of Growth

3.2.1 Export Base Theory

This theory identifies the following two types of industry: basic and non-basic. The former is defined as one which exports its product to another area while the market for the

latter is purely local. This implies that only basic sector industries create wealth for, and generate growth in, an area. Traditionally, basic industries have been equated solely with manufacturing while all tertiary sector activity has been classified as non-basic.

The simplest and most frequently used export base model is based on a Keynesian-type income multiplier and takes the following form:

$$Y_t = E_t + X_t - M_t \qquad (3.1)$$

where Y_t is the income of a region at time t, E_t represents domestic expenditure, X_t represents exports and M_t is the region's imports. In addition,

$$E_t = e_t Y_t \qquad (3.2)$$

$$M_t = m_t Y_t \qquad (3.3)$$

that is, expenditure on domestic goods and imports are both functions of regional income.

Substituting (3.2) and (3.3) into (3.1) gives

$$Y_t = e_t Y_t + X_t - m_t Y_t$$

$$(1-e_t+m_t)Y_t = X_t \qquad (3.4)$$

$$Y_t = \frac{X_t}{1 - e_t+m_t}$$

where X_t is deemed to be exogenous to the system, that is $X_t = \overline{X}_t$. Thus regional income is a multiple of exports (the export base) as long as the marginal propensity to spend locally (e_t-m_t) is less than one. From (3.4) the regional multiplier can be derived by dividing through by X so that:

$$k = \frac{Y_t}{X_t} = \frac{1}{1-e_t+m_t} \qquad (3.5)$$

The higher is e_t, the marginal propensity to consume domestic goods, and the lower is m_t, the marginal propensity to import, the greater will be the multiplier effect. In general, large regions tend to have higher multiplier values than smaller ones due to a lower propensity to import and a larger ratio of income to exports.

Lewis (1972) introduced a growth effect and investment into the model as follows:

$$Y_t = C_t + I_t + X_t - M_t \qquad (3.6)$$

$$C_t = a_1 + b_1 Y_t \qquad (3.7)$$

$$M_t = d\ T_t \qquad (3.8)$$

where Y, M and X are the same as in the first model and C is consumption (domestic expenditure). Investment is then introduced as a function of exports:

$$I_t = a_2 + b_2 X_t \qquad (b_2 > 0) \qquad (3.9)$$

Substituting (3.7) to (3.9) in (3.4) gives

$$Y_t = a_1 + b_1 Y_t + a_2 + b_2 X_t - d\ Y_t$$

Rearranging $$Y_t = \frac{1}{1-(b_1-d)} [(a_1+a_2)(1+b_2)X_t] \qquad (3.10)$$

He then assumes the parameters of the system to be constant so that income changes only when the export volume changes.

The multiplier is now $\frac{1 + b_2}{1-(b_1-d)}$ (3.11)

Assuming that $(b_1+d) < 1$ and $b_1 > d$, that is, the sum of the marginal propensities to consume domestic product and to import is less than one and that the former is larger than the latter, then the total income multiplier is greater than one.

The growth effect is built into the model by assuming exports are increasing at a constant rate, that is,

$$X_t = X_0 \quad e^{rt} \tag{3.12}$$

Substituting (3.12) into (3.10) gives

$$\dot{Y}_t = \frac{dY_t}{dt} = d \left[\frac{1+b_2}{1-(b_1-d)} X_0 e^{rt} \right]$$

$$= \frac{r(1+b_2) X_0 e^{rt}}{1-(b_1-d)} \tag{3.14}$$

The rate of growth in Y can now be defined by:

$$\frac{\dot{Y}_t}{Y_t} = \frac{r (1+b_2) X_0 e^{rt}}{(a_1+a_2)+(1+b_2) X_0 e^{rt}} \tag{3.15}$$

Behind this formalized model lie a number of principally methodological problems which arise when the model is used for empirical studies. The first of these is to decide which unit of measurement should be used to determine the size of the base - employment figures, payrolls, value added, value of production, physical production, community income

or community expenditure. In practice, however, employment figures are most frequently used. A number of different analytical techniques have also been used in empirical studies of export base theory including the residual method, sales-employment conversion, sampling, dollar flow measurement, minimum requirements and location quotients. Of these, the two 'aggregate-comparative' methods, minimum requirements and location quotients, which compare the employment pattern of an area with that of other areas (usually cities) of the same size or nation respectively, are most frequently used and hence merit closer examination.

The minimum requirements technique was first used by Ullman and Dacey (1960) who divided U.S. cities into six groups according to their size, took a sample of cities for each group and then allocated the cities' employment into fourteen industry categories. The city with the lowest percentage of employment in each category per size group was then ascertained and the minimum levels of the fourteen categories summed to give a total which represents the non-basic sector of a city of that size, that is, the minimum level of activity necessary to sustain it. Thus the cities whose activity is above this level are engaged in exporting to other areas. The idea that larger cities engage in more specialized activity is confirmed by the fact that the larger the city the greater is the minima value, and hence these cities are more self-contained. Ullman and Dacey also found that the value of the minima differs between industries as well as between cities. In particular, professional services tended to increase the most with city size. This implies that activities of the advanced producer service type will be concentrated in large cities. If so, this gives the first indication of the likely spatial distribution of advanced producer services. This will be explored further in section 3.2.3.

The location quotient in any given industry i can be expressed as:

$$LQ_i = \frac{e_i/E_i}{e_t/E_t} = \frac{e_i/e_t}{E_i/E_i} \qquad (3.16)$$

where e_i = industry employment and e_t = total employment for the region and E_i = industry employment and E_t = total employment for the nation. A location quotient value greater than one indicates that the region is relatively specialized in that industry and implies that it exports some of its product to other regions. This method assumes that the region exhibits at least average productivity in the industry concerned and that the region's consumption per capita and hence demand approximates to the national average. Location quotients are more reliable the more disaggregated are the industries under consideration but tend to underestimate regional trade by assuming that a region becomes self-sufficient in a product before it begins to export it which may not be the case. This erroneously implies that industries which are under-represented (LQ<1) will not export at all. As this drawback of the technique is not, however, as serious as the one implied by minimum requirements - that all cities export and none import - location quotients, which are also the easiest to calculate, appear to be the better measure.

Export base theory's distinction between basic and non-basic industries does not in itself imply the allocation of individual industries or sectors to either one category or the other. It is the interpretation of the theory which is important. The belief that manufacturing industry can be equated with the basic and service industries with the non-basic sector has become firmly established. This can be regarded as an over-simplification, however, as it is apparent that manufacturing firms are not necessarily exporters themselves. A case in point is that of a firm, say in the motor industry, which supplies component parts solely to another firm in the same area which uses them to make the finished product, cars. As the cars may then be sold outside the region or overseas both firms are in effect being treated as exporters although only the second is directly engaged in exporting the product. If component suppliers are treated in this way why are advanced producer service firms which also supply intermediate inputs, although often in a less tangible form, excluded from similar consideration? Thus it can be argued that either all suppliers of intermediate inputs should be included in the basic sector or none at all.

This is just one aspect of the problem, however. The assumption that only manufacturing industries export has largely precluded investigation of whether any service industries do so. Therefore, it is assertion rather than evidence which excludes services from the basic sector. This can, and will, be challenged in this thesis. Advanced producer services as suppliers to the corporate market are ideally placed to test this assumption. While it can be argued that, for example, consumer services such as food retailing will have a clearly defined population related local market this is not true of advanced producer services which exhibit an uneven spatial distribution. The literature indicates that some producer service firms sell their services to clients outside the region in which they are located. In most cases, however, the notable exception being Beyers and Alvine (1985), this point is treated as being incidental to the main findings of the papers concerned. It is the intention of this thesis to re-focus this approach by treating the question of whether advanced producer services export as fundamental to the investigation of the activities of this sector.

In this case, the size of export base will, other things being equal, be greater than before the inclusion of such services resulting in a higher regional income (equation 3.4). This effect is likely to be most substantial in areas with a large advanced producer service sector and may consequently lead to greater regional disparities in income along the lines predicted by the cumulative causation model (see section 3.3.1).

Differences in the level of export activity between advanced producer service firms and industries may be apparent - Marshall (1983) finds some evidence of this. The more specialised is a firm's product the more likely it is to sell it over a wider market area so that, for example, consultant engineering firms might be expected to require a geographically larger market area than insurance brokers. This in turn may be influenced by the firm's corporate structure, that is, those with a large branch network will have the most clients.

Overall, however, we would expect advanced producer service firms as a group to have a significant non-local market.

Two main approaches can be used to establish the level of export activity of advanced producer service firms. The first of these is the location quotient technique examined above. This will give an indication of which areas are over-represented in terms of the advanced producer service group and individual industries within it at both planning region and city level. As previously noted, however, this technique assumes that an area become self-sufficient in the activity being measured before it begins to export. Thus it is possible that the level of exports will be significantly under-recorded. In order to test this and gain a further insight into the exporting behaviour of advanced producer service firms a survey of such firms in selected areas will be carried out in which firms will be asked to specify the area in which their clients are located and the industrial sector to which they belong. In this way it will be possible to determine the strength of the relationship between the advanced producer service and the manufacturing sectors as well as the degree to which such firms export their product directly.

Export base theory, therefore, has at least the potential to provide a theoretical framework for the study of advanced producer services.

3.2.2 Multiplier Theory

The income multiplier was derived in equation (3.5) above so in this section the employment multiplier comes under scrutiny. Assuming that employment is proportional to income and production in an area, the marginal and average propensities to spend are roughly equal and that employment can be divided into basic and non-basic, as in the export base model, the employment multiplier can be derived as follows:

Let $T = B + S$ (3.17)

where T = total, B = basic and S = non-basic employment

and $S = a_0 + a_1 B$ (3.18)

Substituting (3.18) into (3.17) gives:

$$T = B + a_0 + a_1 B = a_0 + rB \quad (3.19)$$

where $r = (1 + a_1)$ is the employment multiplier.

Weiss and Gooding (1968) refined this model to allow the calculation of differential multiplier estimates for separate export sectors. In doing so, however, they identify several criticisms of the economic base type regional multiplier. These are: non-basic employment may grow independently of any change in the export sector; it fails to recognise the important role which a diversified non-basic sector may play in the development of large regions; imports and the multiplier effects of import substitution are ignored; and, finally, it neglects differences among local industries in terms of linkages in production, wages and productivity. The introduction of differential multipliers is designed to offset this last problem.

The model they use is:

$$T = S + X \quad (3.20)$$

$$\text{and } S = ahT = a + hS + hX \quad (3.21)$$

where T, X and S are total, export (basic) and non-basic employment respectively. Equation (3.21) is then disaggregated so that:

$$S_i = a_i h_s S_i + h_i X_i \qquad i=1, \ldots,n \quad (3.22)$$

where S_i is non-basic employment supported directly by export jobs. The h coefficients represent the marginal ratios of non-basic employment changes to direct changes in S and X

and, in particular, the h_i coefficients measure the differential effects of the export sectors on non-basic employment. Any change in X_i will therefore have both direct and indirect (induced) effects on S.

The reduced form of equation (3.22) is:

$$S_i = \frac{a_i}{1-h_s} + \frac{h_i}{1-h_s} X_i \qquad (3.23)$$

and

$$S = \Sigma S_i = \Sigma \left[\frac{a_i}{1-h_s} \right] + \Sigma \left[\frac{h_i}{1-h_s} Xi \right] \qquad (3.24)$$

where the coefficients $(h_i/1-h_s)$ are the multipliers of export to service employment change which can be determined by least squares regression. The differential multipliers of export to total employment changes are given by:

$$k = \frac{1 + h_i - h_s}{1 - h_s} \qquad (3.25)$$

These show that the differential multiplier impacts of a change in the export sectors can be attributed to relative differences in the direct and indirect effects of changes in export jobs (reflected in the h_i) as against induced effects within the non-basic sector (h_s) which are assumed to be similar regardless of the initial source of change in export employment.

The employment multiplier states that employment in the non-basic sector is a direct function of employment in the basic sector. Thus if advanced producer services are part of the basic sector as was hypothesised in section 3.2.1, then they assist in the creation of other employment in the region rather than having a dependent role themselves. It will be the case, therefore, that areas with the largest advanced producer service sectors will have an

advantage over other areas in terms of employment creation (assuming parity of size with respect to their manufacturing sectors).

If advanced producer services are indeed part of the basic sector then they should be included in the regional employment multiplier calculations but as this would also require consideration of manufacturing such calculations lie outside the scope of this thesis.

3.2.3 Location Theory

Most variants of location theory are designed to explain manufacturing location and hence place a great deal of emphasis on the physical product of a firm or industry. Thus they appear to be of little relevance to services in general, and advanced producer services in particular, whose product is often intangible. This can be shown by considering the simplest location theory model upon which almost all the others are based - the locational line.

In this model a uniform cost surface is assumed so that distance or 'transport inputs' are the sole determinants of location. The locational line then takes the form:

C _____ M Figure 3.1

where C is the point where the consumers of a firm's product are located and M is the only source of a raw material necessary for the firm's product which is not available universally at a constant price. The more immobile is the raw material the closer to M the firm will locate along this line and vice versa. This model can then be extended by weakening its assumptions, for example by allowing for more than one non-ubiquitous raw material or bringing in other types of input such as labour.

The exception with respect to location theory models is central place theory (CPT) which was put forward by Christaller (1935) and developed by Looch (1944). Central place theory assumes that identical consumers are distributed at uniform densities on a plain over which they can move freely in any direction, and that all consumers have the same downward sloping demand curve.

Under this model a good, x, is sold at price p but the actual price to consumers is p + mt, where m is the number of miles from the retail point and t is the transport cost per mile. The quantity of x consumed will decrease as the distance from the retail point grows and transport costs rise until point r is reached where total price is p = rt and no x will be demanded. Thus the 'ideal' trade area is a circle with radius r. The total quantity of x demanded within this circle can be obtained by calculating the area under the demand curve using the equation:

$$D_i = S \int_0^{2\pi} \left[\int_0^{m=r} f(p_i + mt)\, m\, dm \right] d\theta \qquad (3.26)$$

The aggregate demand curve can then be obtained by plotting the values of D_i and p_i from equation (3.26) as is shown in Figure 3.2 where D is the aggregate demand curve and C is the retailer's long run average cost curve. Figure 3.2 shows that the optimum size for a retail outlet for good x is at D_M where the price of x is P_M. If C and D did not intersect at all no store would be established to supply x.

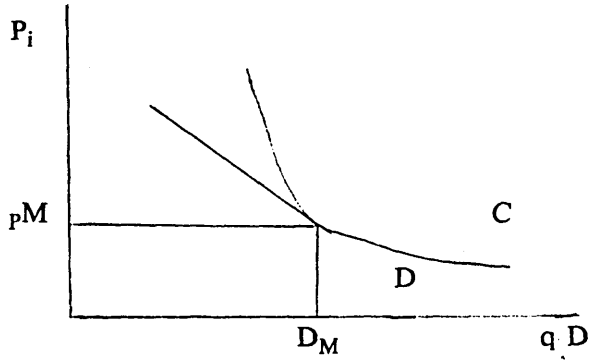


Figure 3.2

In general, however, it is assumed that the required conditions hold throughout the plain so that it is covered by circular market areas which in order to serve all consumers must

be overlapping. The optimum market areas are then obtained by joining the centre points of each circle to those of its three neighbours to form a network of hexagonal market areas (see Figure 3.3). This replacement of circular by hexagonal market areas occurs because consumers wish to consume as much as they can for their money, that is the economic rationality assumption holds, so that the over-lapping areas will be bisected as consumers reduce transport costs by travelling to the nearest store. When the market structure changes into a hexagonal form total demand at price p_m will fall and so the aggregate demand curve of figure 3.2 will shift to the left. Finally, if complete freedom of entry is assumed the closer the stores are to each other the further to the left the aggregate demand curve will move as consumers minimize their travelling distance.

It is at this point that the Christaller and Losch models of CPT begin to diverge. The former expresses his model in terms of "urban hierarchies" based on the "marketing principle" in which businesses providing a large number of goods and/or services are ranked in descending order of their minimum size market areas. The highest order retail locations are deemed to define a central place from which all other goods and services will be provided. Given this phenomenon a store wanting to set up in a non-central-place location will find its optimum site to be at the midpoint between three of the central places and the good(s) sold there will have a hexagonal market area. By carrying out this transformation throughout the plain a second network of smaller hexagons can be derived and this process can be repeated until a complete urban hierarchy of centres is established (Figure 3.3). The downward progression of centres by size class is 1,2,6,18,54 . . ., and the progression of market areas of each level is 1,3,9,27,81 . . .. In addition, there is a corresponding hierarchy of transport routes whereby each major city is connected to regional cities by six primary and six secondary transport routes.

In contrast to Christaller, Losch builds his system from the lowest order good upwards to form an "economic landscape". He begins by assuming the plain to contain a

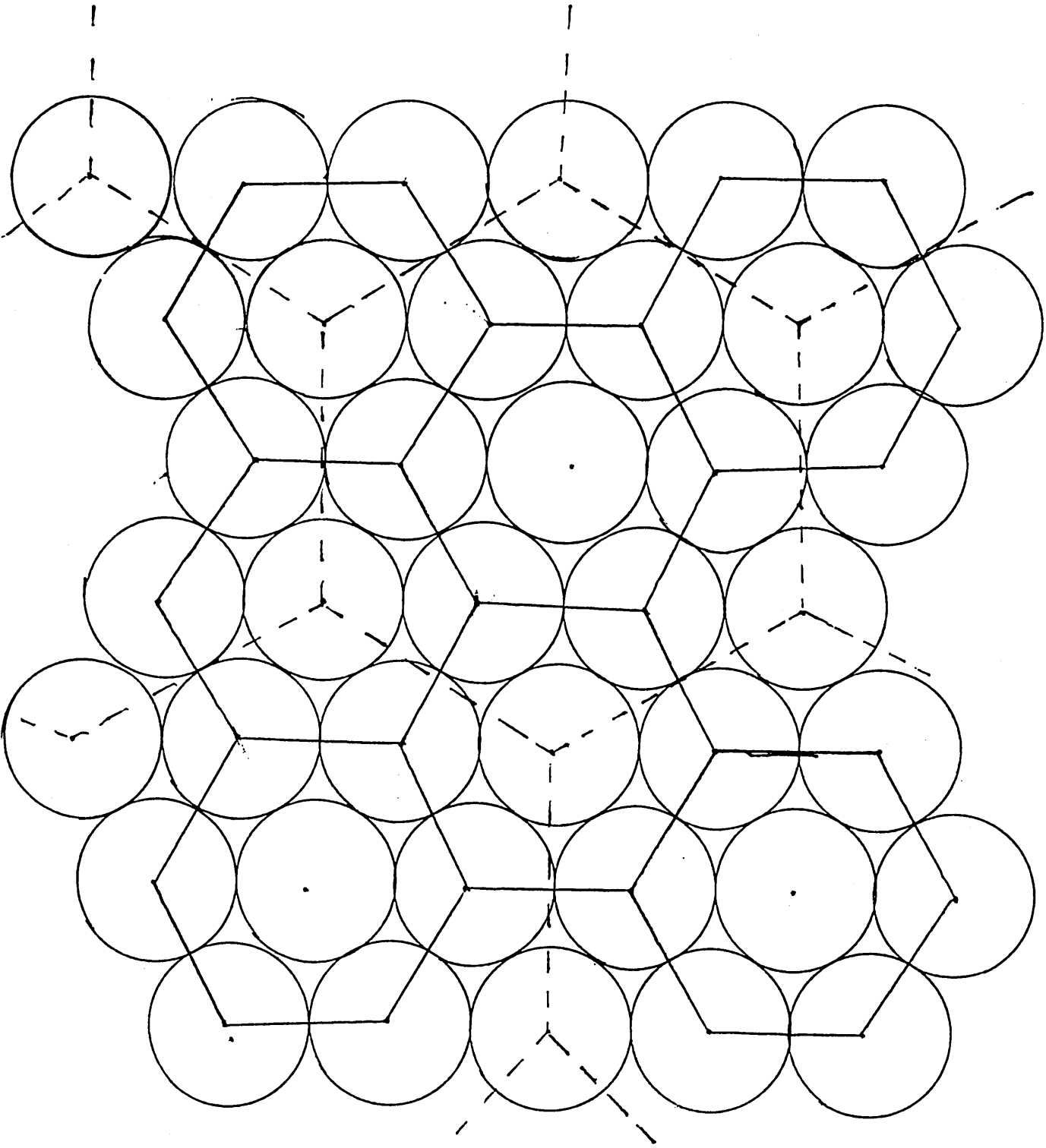


FIGURE 3.3. MARKET AREAS AS DEFINED BY CENTRAL PLACE THEORY

triangularly-distributed pattern of settlements rather than a continuous distribution of population over it and from this derives an optimal hexagonal arrangement of centres and market areas. Each lower order hexagon includes eighteen outlying villages plus the central village in which the business is located. The next steps of the hierarchy are composed of those goods and services whose required market areas are between one and three, three and four, and four and seven times greater than the lowest order hexagonal market size respectively. These steps continue as long as is necessary to exhaust the number of goods and services the relevant figures being 9, 12, 13, 16, 19, 21, 25 . . .. To describe this pattern Loach defines the levels of the hierarchy in terms of the bifurcation ratio for the centres such that K = k+1 where k is the bifurcation ratio. Thus, for example, the goods which require a market area ranging from one to three times the basic hexagonal unit will locate in a K=3 network and so on. Finally, Loach rotates the sets of hexagons at different levels until there is a maximum agglomeration of activities in the centres. As a result of this an economic landscape can be obtained centred on a metropolis and comprised of six sectors with many, and six with only a few, production sites.

Unlike most locational models central place theory as a model of retail development is service orientated but it is questionable whether it can provide a satisfactory model for the spatial development of the advanced producer service sector. It's assumption of identical consumers distributed at uniform density across the plain is unrealistic and its focus on transport costs inapplicable with respect to advanced producer services but its result provide a possible means of understanding how market areas are formed. Centres at the top of the hierarchy will provide all the same services as the centres further down the hierarchy plus the more specialized services which require a larger market area. Advanced producer services are likely to fall into the latter category although those services such as banking which also have a consumer element will be provided in a greater number of centres.

The dominance of London to the provision of producer services is already apparent from the literature reviewed in Chapter One. It is less clear, however, the extent to which advanced producer services follow the model at the lower levels, that is, is the progression of centres 1,2,6,18 . . . as the model states? If so, then advanced producer services can be said to form a locational pattern akin to other service activities, if not, this provides supplementary evidence that advanced producer services behave 'differently', perhaps more in line with manufacturing.

Due to data limitations this idea cannot be tested by examining the number of establishments in each centre, employment in advanced producer services will have to be used as a proxy variable. Hierarchies of centres can be constructed at both national and regional level and this will be done in the following chapters. If advanced producer services are found to be heavily concentrated in dominant regional centres this will provide support for the hypothesis that the most specialized activities locate near the top of the hierarchy. It should be noted, however, that this model is largely descriptive and can give no indication of what changes may occur in future.

The more concentrated advanced producer service firms are in a few high level centres the more likely it is that they will export and/or export a higher proportion of, their product at least to other parts of the planning region in the case of a dominant regional centre and nationally in the case of a dominant national centre (such as London). Thus a model of the locational characteristics of these services could help to form expectations regarding their trading behaviour.

3.3 Supply-Orientated Theories of Growth

3.3.1 The Neo-classical and Cumulative Causation Models

These two theories are examined together as they are 'opposite sides of the same coin' in that relatively few alterations in their assumptions lead them to reach the conclusions usually associated with the other model.

The neoclassical model has several versions ranging from simple, naive to general, complex ones. As an illustration of this model, however, we will use that outlined by Richardson (1979) which is constructed as follows:

$$y_i = a_i k_i + (1-a_i)\, l_i + t_i \qquad (3.27)$$

$$k_i = \frac{s_i}{v_i} \pm \sum_j k_{ji} \qquad (3.28)$$

$$l_i = n_i \pm \sum_j m_{ji} \qquad (3.29)$$

$$k_{ji} = f\,(r_i - r_j) \qquad (3.30)$$

$$m_{ji} = f_l\,(w_i - w_j) \qquad (3.31)$$

where subscript i(j) = region i(j); y, k, l and t = growth rates in output, capital, labour and technical progress respectively; s = savings/income ratio; v = capital/output ratio; k_{ji} = annual net capital flow from j to i divided by region i's capital stock; n = rate of increase in indigenous labour supply; m_{ji} = annual net migration of workers from j to i as a fraction of region i's labour supply; r = rate of return to capital and w = wage.

Equation (3.27) is the aggregate neo-classical definitional equation and equations (3.28) to (3.31) embody the contribution of inter-regional flows of factors of production to growth. Equations (3.30) and (3.31) make explicit the hypothesis that capital and labour

move in response to inter-regional differences in the rates of return and that marginal factor returns are inversely related intra-regionally and hence the probability of regional convergence is increased. For the above system of equations to reach an equilibrium position the rate of return to (marginal product of) capital (r_i) must equal the interest rate (m). Thus steady growth requires that:

$$m = r_i = a_i \frac{Y_i}{K_i} \qquad (3.32)$$

If the interest rate, m, is given then Y and K must grow at the same rate if a_i is to remain constant, so that $y_i = k_i$. Substituting for k_i in (3.27) gives:

$$y_i = k_i = \frac{t_i}{1-a_i} + l_i \qquad (3.33)$$

A special case of this model exists if t_i=0. In this case output, labour and capital must all grow at the same rate if steady growth is to be achieved. This does not imply that all regions must grow at the same rate, however, principally because the supply of labour is likely to differ between regions. In the more general case when t_i is not equal to zero, the equilibrium conditions for the model are complex. For example, if the capital/output ratio (v_i) is flexible, capital and output may be allowed to diverge in terms of their growth rates. Even if v_i is not flexible the growth rate of capital may exceed that of output in a region which is able to import capital from other regions.

The cumulative causation model is constructed rather differently (Richardson, 1979):

$$r = a + by \qquad (3.34)$$

$$w = c + dr \qquad (3.35)$$

$$y = e - fw \qquad (3.36)$$

Substituting (3.34) and (3.35) into (3.36) and introducing a time term gives:

$$y_{t+1} = e + f(ad-c) + bdf\, y_t \qquad (3.37)$$

or, $$y_{t+1} = gy + h \qquad (3.38)$$

where $g = bdf$ and $h = e + f(ad-c)$.

The equilibrium growth rate, y_e, is obtained by setting $y_e = y_t = y_{t+1}$ in (3.38) so that:

$$y_e = \frac{h}{1-g} = \frac{e + f(ad-c)}{1 - bdf} \qquad (3.39)$$

and the first order linear equation (3.38) has the general solution:

$$y_t = (y_0 - y_e)\, g^t + y_e \qquad (3.40)$$

where y_0 is the initial growth rate. Throughout this system of equations y = growth rate of output, r = rate of productivity growth, w = rate of growth in efficiency rates and a,b,c,d,e,f,g and h are coefficients (b being the Verdoorn coefficient). The conditions for cumulative growth in this model are (a) that g is greater than one and (b) that y_0 is greater than y_e. If the former does not hold then growth will be convergent rather than cumulative, more akin to the neoclassical model.

What then are the similarities and differences between the neo-classical and cumulative causation models? For convergency to exist in the neo-classical model all of the following assumptions pertaining to it must be adopted, however inappropriately, as most of them are, to a disaggregated regional model. They are: full employment; perfect competition; a homogeneous capital stock; zero transport costs; a fixed labour supply; no technical progress; and regionally identical production functions exhibiting constant returns to scale. The mechanism through which convergence occurs is as follows: given these

assumptions it can be shown that the wage (marginal product of labour) is a direct function of the capital/labour ratio (K/L) and that the return to capital (marginal product of capital) is an inverse function of this ratio. As regional production functions are identical labour will move from low to high wage regions and capital will flow in the opposite direction as it can obtain higher returns in the low wage regions. This process continues until factor returns are equalized and hence regional growth becomes associated with a convergence in regional per capita incomes.

The replacement of perfect with imperfect competition and constant with increasing returns to scale are the basis of the cumulative causation model which operates as follows: increasing returns favour the rich regions which become increasingly industrialized at the expense of the poor regions which in turn become relatively more backward while movements in the terms of trade also favour the rich regions because of the existence of imperfect competition in the manufacturing sector compared to near perfect competition in agriculture. This continued growth in the richer regions is likely to be checked, however, by 'spread effects' (Mtyrdal, 1957; Kaldor, 1970) which include:

a) diffusion of growth and the increase in demand for 'complementary' products from poor regions;
b) the possibility of diseconomies of scale occurring in the richer regions;
c) inter-regional labour mobility which will help to dilute divergencies in real wages; and
d) built-in fiscal stabilisers.

Both models have their drawbacks, the neo-classical model in its unrealistic assumptions and the cumulative causation model in its need for an unspecified trigger to set off the process of regional divergence. Of the two, however, cumulative causation appears more able to explain the trends in producer services observed in Chapter One. Green and

Owen (1985) and Marshall (1985b) indicate that, for the U.K. at least, there has been little change in the regional inequalities of employment in this sector but that this has tended to be in the direction of increased divergency - the regions most specialized in this activity continuing to be so and increasing their relative advantage over time.

At a theoretical level Faini (1984) provides support for the hypothesis that the cumulative causation model is the most applicable to producer services. He argues that the limited evidence available suggests that producer services exhibit increasing returns to scale which, given their influence on regional economic performance, will lead to a cumulative divergence of regional growth rates. Regions in which there is a relative deficiency of such services will tend to use less of them and concentrate upon activities which have low service input requirements. This in turn restricts industrial development and inhibits the growth of the producer service sector. Two points emerge from his study, however, which limit its applicability to this thesis. Firstly, while he argues that capital intensive producer services, for example transport, will almost certainly exhibit increasing returns to scale he admits that the position is less clear cut for labour intensive producer services. Advanced producer services consist almost entirely of the latter category. Increasing returns may exist for this group as a result of the specialisation of labour and the cost-cutting effects of the implementation of new technology as he suggests. If not, then the question of whether the cumulative causation model can be applied in this context is reopened. Secondly, Faini persists in regarding producer services as being non-traded inputs. This is not the case. While producer services which are internalized within a firm can be designated as non-traded inputs those which are involved in inter-firm transactions cannot. Ample evidence is presented in Chapter One that producer service firms do sell their product directly to other companies. Although this weakens the assumptions upon which Faini's model is based it does not, however, invalidate it as such a trade provides another mechanism through which increased regional divergence can take place.

If such trade occurs solely within a region then regions with a thriving producer service sector are likely to establish and attract firms which use these services allowing agglomeration effects to develop. If inter-regional trade exists regions well provided with such services will benefit further as they are in a better position to attract purchasers of services from outside the region. As more firms purchase services from regions other than the one in which they are located then so the indigenous producer service sector will decline leading more firms to buy their services from further afield and so on. Thus cumulative divergency takes place.

This provides a link with the core hypothesis of this thesis that advanced producer service firms export their product and so can be regarded as basic (see section 3.2.1). If such firms are found to trade extensively then the mechanism outlined in the previous paragraph might be expected to operate especially in the case of the most specialized services which require a large market area.

Equalisation of factor returns as predicted by the neo-classical model is likely to be of relatively little importance to advanced producer services. As they are labour intensive differing regional returns to capital are unlikely to have much of an impact, most of the overheads taking the form of wages and office rents. There may, however, be an incentive to move activities from areas where rents are exceptionally high, in particular London, to areas where they are lower. Gains obtained from doing so have to be offset by the costs associated with such a move, for example, the loss of skilled staff. The existence of skills shortages and segmented labour markets may restrict the scope of these moves still further so that increasing labour costs cannot exert any significant pressure on firms to move to low wage areas. This is in line with the observation of Green and Owen (1985) that where decentralization of producer service activity from London has occurred it has largely been to the Greater South East rather than the other planning regions while at the same time growth in these activities has remained strongest in those regions in which they are over-

represented. On balance, therefore, the evidence points towards cumulative divergency in (advanced) producer service activity as predicted by the cumulative causation model.

3.3.2 Growth Pole Theory

Perroux (1955) identified three concepts which form the basis of growth pole theory:

a) the existence of a "key or propulsive industry" which by increasing its output induces increases in the output of other industries;

b) the potentially destabilizing effects of a cluster of oligopolistic industries = "the non-competitive system of the cluster" - which will influence prices, output and inputs in that group depending upon their relative strengths; and

c) the "occurrence of territorial agglomeration" which intensifies the effects of a) and b) due to the proximity of the actors involved.

From these, a growth pole is defined as a group of industries (or firms) which are able to generate economic growth and have strong contacts between each other and with the propulsive industry. Relatively fast growth occurs within this group because of its highly dynamic nature, for example, its tendency to have a high innovation rate. Boudeville (1966) extended the theory by introducing space into the model through which he hypothesized that the dynamic group of industries might be spatially clustered, located in an urban area and would have spill-over effects particularly in the hinterland of the urban area in which it was situated.

The idea of spill-over effects can be formalized through the inclusion of Myrdal's (1957) spread and backwash effects in the growth pole model so that the result of each effect is related to distance. For example, the effect of spread at a distance of r miles from the centre of the growth pole (S_r) may be represented by:

$$S_r = S_0 e^{-ar} \qquad (3.41)$$

where S_0 = spread measured at the pole and is the distance decay coefficient.

Spread (favourable) effects include the propagation of innovative, investment and growth attitudes and are represented as a logistic function of time (Figure 3.4). Backwash (unfavourable) effects can be represented by the quadratic function of Figure 3.5.

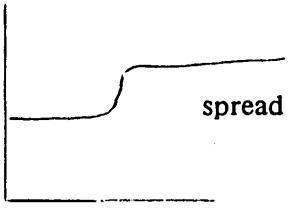


Figure 3.4

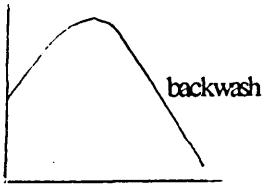


Figure 3.5

Thus these effects are initially high and increasing as resources move towards the pole but later weaken as limits to the spatial reallocation of factors are reached. In both cases the process tends to take place over quite a long period of time. By combining the likely patterns of these two effects a net spill-over function (Figure 3.6) can be obtained. The exact form of this function will differ between places and over time due to variations in pole sizes, the strength of policies promoting their growth (where applicable) and local economic, social and political conditions. In general, however, their form is similar to that of Figure 3.6 with backwash dominating in the early years until the maximum polarization point t_i is reached after which spread becomes increasingly more dominant until the "net spill-over cross-over

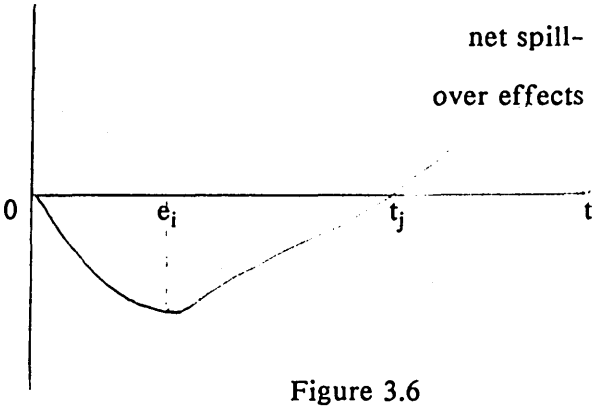


Figure 3.6

point" t_j is reached. From t_j onwards net positive spill-over continues to increase until the upper limit where a saturation point is reached.

Growth pole theory is again strongly orientated towards manufacturing industry which is deemed to play the "propulsive" role in contrast to the dependency on agriculture which characterises "backward" regions. Services are not taken into account. As advanced producer services have a role in providing intermediate inputs into manufacturing production processes, however, they may play a part in the building of a growth pole, helping to create what Noyelle and Stanback (1984) would call a "complex of corporate activity". There is nothing inherent in the model which says this cannot be the case.

If so, we would expect advanced producer services to be concentrated in areas with strong manufacturing sectors and the fortunes of the two to be closely linked, that is, if manufacturing began to decline advanced producer services would follow suit. In the light of the analysis of section 3.2.1 the possibility of an advanced producer service industry being "propulsive" within the growth pole framework also exists. Until it can be established that advanced producer services belong to the basic sector, however, this idea cannot be seriously entertained and even then there is no evidence that this could be the case or that in any event it would be possible to identify the propulsive industry with any certainty.

3.4 Information Based Theories of Growth

3.4.1 Network Theory

Dunn (1980) identifies two types of relational network, tree and circuit networks, which encompass the resource-transformation-consumption cycle of activity. Tree networks, used for example to represent the material and energy inputs of a household, are principally composed of linear, converging or branching paths. Circuit networks, used for example to represent the case where a raw material is supplied to a manufacturing industry whose

product is then used in turn by a raw material supplier, are closed systems. When two or more of these networks of either type are combined a forest network exists. The economy as a whole is deemed to be a huge closed circuit network in which the household in being the ultimate source of final demand (the terminus of a variety of forest networks) and the source of labour inputs into the transformation process is the most important actor. Thus the tree and circuit networks can be used as building blocks to identify larger networks such as urban activity networks which are formed by a spatial agglomeration of activities determined by the 'decision rules' which govern information processing in the system. Three types of establishment can be identified within this system - resource, intermediate (transformative) and household - each of which attempt to reduce costs and increase revenues (maximize profits) by substituting inputs and outputs and changing location when necessary, in particular to benefit from economies of scale so that agglomeration of similar units occurs.

The emergence of the system of cities is the result of several effects of spatial agglomeration which occur in differing combinations. Firstly, the prevalence of a highly localized resource will attract establishments that use it to a site, especially if the resource is relatively immobile. Secondly, the input and/or output orientation of an establishment will help determine the location, leading to different mixes of activities in various urban centres. Thirdly, differences in transformation and transfer scale economies between establishments and the number of related establishments which seek the same location will influence the size of centres which are likely to display a hierarchical pattern. Finally, differences in transfer channels (roads etc.) between centres may also have significant effects.

This list of influences on the formation of a system of cities has obvious parallels in central place theory (see section 3.2.3) but Dunn argues that the central place model is too limiting in that it ignores the off-centring effects of resource and non-trade intermediate activities which may lead to lower order centres carrying out activities which higher order centres do not. Dunn also suggests that under the network system the boundaries of urban

centres can be more meaningfully defined by drawing them in such a way as to maximise the number of circuit networks within them relative to the number of cross-boundary tree network transfers, that is, to obtain the maximum level of system closure. Urban areas defined this way tend to include a wider hinterland than those produced by methods using urban densities. A hierarchy of urban centres can then be derived based on the degree of circuit network concentration.

The next step in the development of network theory is to consider the role of information processing activities which are likely to exceed the physical processing activities solely considered above in number. Information processing activities can be divided into four types, those which relate to: physical activity processes, for example, inventory control; environmental transactions, for example, distribution flow information; developmental information processes, for example those which change producer/consumer behaviour and problem solving; and the information processing activities of households. Only the first and third of these are likely to be of any relevance to advanced producer services and then only to a very limited degree.

The network system developed by Dunn from the above is extremely complex with individual physical and information processes exhibiting different characteristics as a result of different functional linkages, economies of scale and differential behaviourial characteristics of units operating with the system. For both physical and information processes these linkages intersect, however, and form tree and/or circuit networks at transaction/transport nodes and along common transfer channels leading to agglomeration in these areas and hence urban centres.

As well as the static network forms described above there are dynamic elements in the system. When environmental disturbances occur the individual components of the urban network adopt an adaptive, problem-solving response. This response can be programmatic,

that is a straightforward growth or decline in the volume of transactions for each establishment and the network as a whole, which may result in a change in the mix of activities and products, or developmental, which entails the formulation of a "new way of doing things, new things to do, and new final objectives" (Dunn, 1980, ch. 3), i.e. an innovative phase. Developmental changes are likely to expand the urban region boundaries formed by network closure; increase the frequency of cross-boundary transactions; lead to changes in settlement patterns and activity densities with a tendency towards multinodal agglomerations; increase the number of transport channels; make households, establishments and urban regions more interdependent; and to favour the regions which are relatively more specialized in information processing activities.

The complex and highly abstract nature of network theory makes it application to advanced producer services difficult. While in general terms it is possible to identify advanced producer service firms as being intermediate (transformative) establishments within the framework of the theory only the parts of it which examine the role of information processing activities are likely to be relevant here. Those networks identified above as developmental information processes which change producer/consumer behaviour and aid problem solving are likely to have the greatest impact. For example, management consultancy services may allow a firm's owners to gain new insights into their business and perhaps change the way in which it operates. For parts of the advanced producer service group such lines are, however, tenuous.

Thus while network theory in being information based appeared superficially attractive in attempting to explain advanced producer service behaviour due to the information intensive nature of this group it is in practice too underdeveloped to be of any real use. At best it reiterates the view of central place theory that advanced producer services will be located near the top of the hierarchy in areas that are 'information-rich'.

3.4.2 Information Diffusion Theory

Information diffusion theory is similar to network and central place theory in that they are all communications based. The principal difference is, however, that information diffusion theory is not concerned with physical transportation networks except where they coincide with important information relaying networks.

Hagerstrand (1966) provides a basis for information diffusion theory through his treatment of the spread of innovation as a social communications process. He found that three phases of spatial diffusion can be identified as follows:

a) initially diffusion will be limited, taking place among people and/or firms in the immediate area around the innovation (information) centre - the "neighbourhood effect".

b) news will spread outwards from the centre in a radial pattern, corresponding to the main communications routes between cities, so that new agglomerations are formed while growth is still continuing at the original place.

c) a saturation stage is reached near the centre even though the idea has not been fully adopted in peripheral areas. Thus diffusion of innovation cannot be easily separated from diffusion of information - would-be adopters of an innovation must be aware of its existence which entails their being in receipt of information through either public, for example, the mass media, or private, for example social network, channels.

Hagerstrand (1967) presents three models designed to illustrate likely patterns of diffusion and their spatial consequences. These are:

Model 1

Assumptions The entire population is informed from the beginning. The adoption decision of each person is independent from that of others, i.e. no neighbourhood effect. Information is uniformly available and spread through public channels.

Outcome A random spatial distribution of adopters.

Model 2

Assumptions Information is available only through private channels and at constant time intervals. Initially there is only one innovator who is located in the centre of the plain. The probability of information transmission declines with distance.

Outcome Clusters of adoptions in the second phase of diffusion especially around the centre. Radial diffusion from subsequent agglomerations.

Model 3

Assumptions Varying degrees of resistance by potential adopters which can in some cases be worn down by repetition of information.

Outcome Greater spatial concentration of adoptions - the higher the average degree of resistance the more spatially concentrated is the distribution of adoptions.

Of these models the first is unrealistic in assuming uniform availability of information. There is little to choose between the other two models, however, the difference hinging on the issue of repetition, the importance of which may differ between places, people and over time.

Both Hagerstrand's works seem to imply that diffusion is a hierarchical process which can be said to reflect the fact that many communication links are inter-urban and that most communication nodes, which are responsible for the transmission and receipt of messages are

located in urban areas - in particular the 'high-level' centres. While Hagerstrand's theory does not specifically consider any industrial sector its bias towards innovation implies, initially at least, links with the manufacturing sector. Hagerstrand himself, however, also considered agricultural innovations. The extension of the model to services and more specifically to advanced producer services is potentially just the next step in the process. As many of these activities are office-based innovation may take the form of the adoption of new technology - the computerization of offices, for example, which may change their structure and location.

The focus of the theory upon information relaying rather than physical transportation networks heightens its applicability to advanced producer services which are by definition information-intensive. The theory goes at least part of the way to explain the regional differences in the level of advanced producer service activity found by, for example, Green and Owen (1985) by allowing for the possibility that unequal access to the information on which advanced producer service providing firms rely and which they themselves disseminate exists. The observed concentration of advanced producer service activity in and around London is possibly the result of Hagerstrand's "neighbourhood effect" where diffusion of information from the centre (London) takes place in the immediate area surrounding it. If so, regions furthest away from London would be expected to be the least developed in this sense.

Of the three models outlined in this section Model 2, assuming centrality is not a strong prerequisite, is probably closest to reality for the advanced producer service group. While explaining the pattern of advanced producer service provision around London a similar pattern would be expected to occur around other major conurbations, especially those which dominate a particular region. For example, Birmingham might be expected to be the main centre for such activities in the West Midlands with diffusion taking place from there into the surrounding area. A hierarchy of advanced producer service activity would be expected

to exist based upon availability of information. Thus, as is the case for network theory, information diffusion theory predicts that advanced producer services will be concentrated in 'information-rich' areas which, in terms of the system of cities, means major urban centres.

3.5 The Implications of the Theories of Advanced Producer Services

Regional disparities in advanced producer service activity became apparent from the literature reviewed in Chapter One. Of the theories reviewed in this chapter, three-central place theory, network theory and information diffusion theory - cover locational behaviour. The first two of these, however, are, respectively, too orientated towards physical transportation networks and too abstract to be of much assistance in explaining advanced producer services' locational behaviour. In general terms they predict that advanced producer service firms are most likely to concentrate in metropolitan regions due to the relative specialization of the services they provide and due to the 'information rich' nature of these regions. In terms of the central place model London can be clearly identified as being the city at the top of the hierarchy. Whether the model holds for the remaining levels of the hierarchy at national level and whether similar hierarchies exist at regional level will be examined in Chapter Five.

The reliance of central place theory upon physical transport channels is a drawback which is not shared by information diffusion theory which concentrates instead upon information relaying networks, although of course the two may coincide. By doing so, information diffusion theory allows for the possibility of establishment of 'off-centred' service providing places. Although constructed less precisely than central place theory it appears to provide an explanation of observed producer service activity in London and the

South East but it is unclear if it can also do so for Great Britain as a whole and at planning region level. This will also be tested in the following chapters.

This exploration of the locational behaviour of advanced producer service activities is necessary because it provides a framework in which to consider the potential contribution such services can make to regional growth. If a relative uniformity of provision of advanced producer services were observable between regions then there would be little incentive for an inter-regional trade in them to develop. If, on the other hand, wide disparities exist then either some regions use less of such services than others or regions which have an over-representation of them sell them to regions in which a deficiency exists.

This brings us directly back to export base theory. As already stated, there is nothing inherent in the theory to forbid sectors other than manufacturing being identified as basic. The non-ubiquitous nature of advanced producer services and their orientation towards the corporate rather than the personal consumer market both make it possible that such services are in fact part of the basic sector. This is the core hypothesis of this thesis. Specifically, two mechanisms may be at work. Firstly, advanced producer services as intermediate inputs into the production process add value to a product which is then exported. Secondly, and more importantly, firms providing these services may be exporters themselves and hence make a direct contribution to regional income generation and growth. The following chapters test this hypothesis in a number of ways - an examination of whether advanced producer services are population related, regression analysis to try to establish whether there is a clearly defined relationship between advanced producer service employment and regional G.D.P., the calculation of location quotients and a survey of firms in this sector in order to determine the location of their clients.

If advanced producer services are indeed found to be part of the basic sector then regional inequalities in their distribution may have long term effects on the relative

prosperity of the regions. Regions with the greatest concentration of advanced producer services are likely to be those with the strongest export capability so that regions which are less developed in this sense will purchase services from them. This will inhibit the growth of the indigenous advanced producer service sector in the under-developed regions which will in turn widen the inter-regional disparities in income. Thus the cumulative causation model will apply. This will be tested in Chapter Five by examining the trends in advanced producer service employment over time. An increase in the concentration of such activity can be construed as support for the cumulative causation model.

As this section indicates there is a potentially strong relationship between locational trends in advanced producer service activity and their contribution in regional growth. Several of the theories reviewed in this chapter can, therefore, be employed in seeking a better understanding of this sector. Export base theory is, however, the one of primary importance in the context of this thesis.

3.6 Conclusion

This chapter provides a theoretical base for the study of advanced producer services which is lacking in most of the literature. In particular, through the use of export base theory, the role of these services with respect to urban and regional growth is questioned. It is hypothesized that advanced producer services are part of the basic sector and so assist in regional income and employment generation. This is the main theme throughout the rest of this thesis.

This cannot, however, be completely separated from the locational characteristics of advanced producer service firms, their structure and their relationships with other industry sectors. All these factors may influence the export behaviour of firms in the advanced producer service sector and consequently are also examined in the remainder of this thesis.

CHAPTER FOUR

NATIONAL TRENDS IN ADVANCED PRODUCER SERVICES

4.1 Introduction

In order to provide a contextual background for the tests of the theories which are carried out in the remainder of this thesis the following two sections examine trends in advanced producer service and other industry sector employment. Specifically, section 4.2 examines the historical trends and section 4.3 current trends in employment, the latter for the period 1971-84 which is the time span of the subsequent analysis as detailed regional figures are only available for this period (see Appendix A). Section 4.4 looks more closely at the structure of advanced producer service employment, breaking down the national total into its male/female, full-time/part-time and industry group components and analysing changes over time. Sections 4.5 and 4.6 examine whether advanced producer services are population related and whether there is a relationship between advanced producer services and G.D.P. respectively, providing an initial indication of the behaviour of this group of services and indirect tests of whether they are 'different' to other services and perhaps could be classified as basic.

4.2 Historical Trends: 1948-1968

The statistics for this section were obtained from the Department of Employment's (1970) "British Labour Statistics Historical Abstract 1886-1968". The post-war period was chosen for analysis as prior to this the level of advanced producer service employment in the U.K. was very low and also as the statistics are not available during the war years there would have been a gap in continuity. Up to 1958 the figures were published for the groups of the 1948 Standard Industrial Classification and from 1959 to 1968 for the 1958 Standard Industrial Classification groupings.

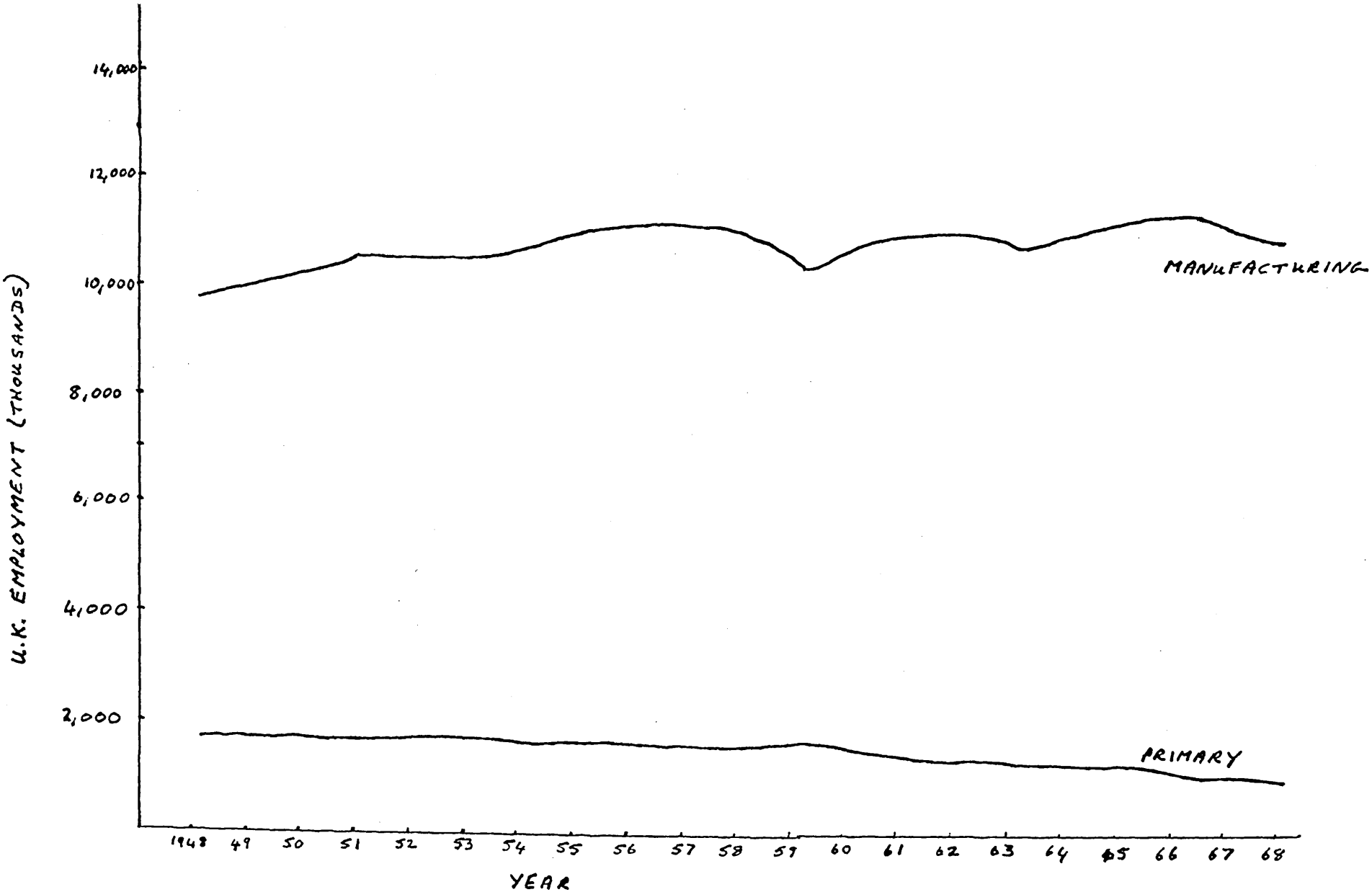

14,000
12,000
10,000
8,000
6,000
4,000
2,000
U.K. EMPLOYMENT (THOUSANDS)
MANUFACTURING
PRIMARY
1948 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68
YEAR

FIGURE 4.1

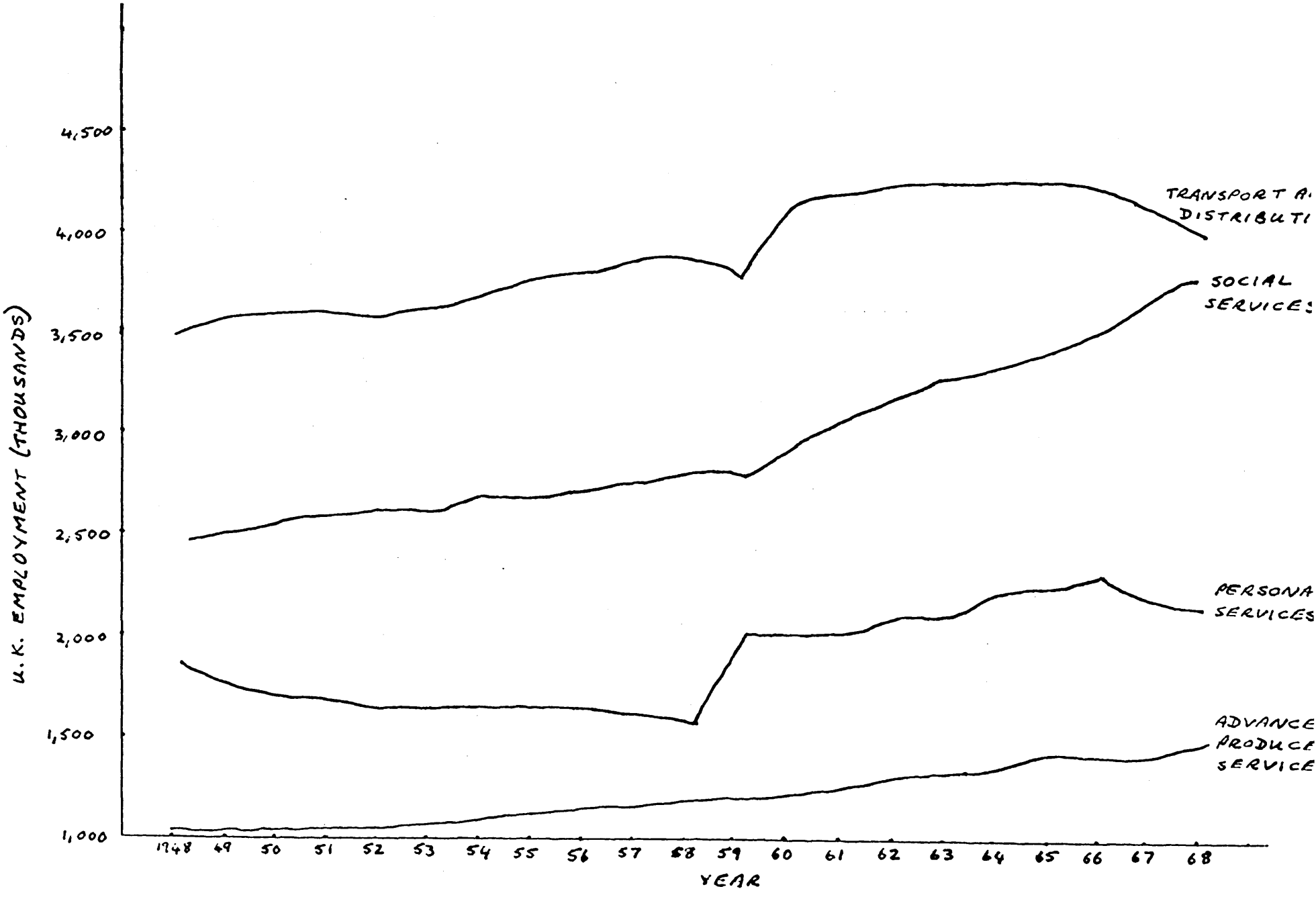

U.K. EMPLOYMENT (THOUSANDS)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
1948
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
YEAR
TRANSPORT A
DISTRIBUTI
SOCIAL
SERVICES
PERSONA
SERVICES
ADVANCE
PRODUCE
SERVICE

FIGURE 4.2.

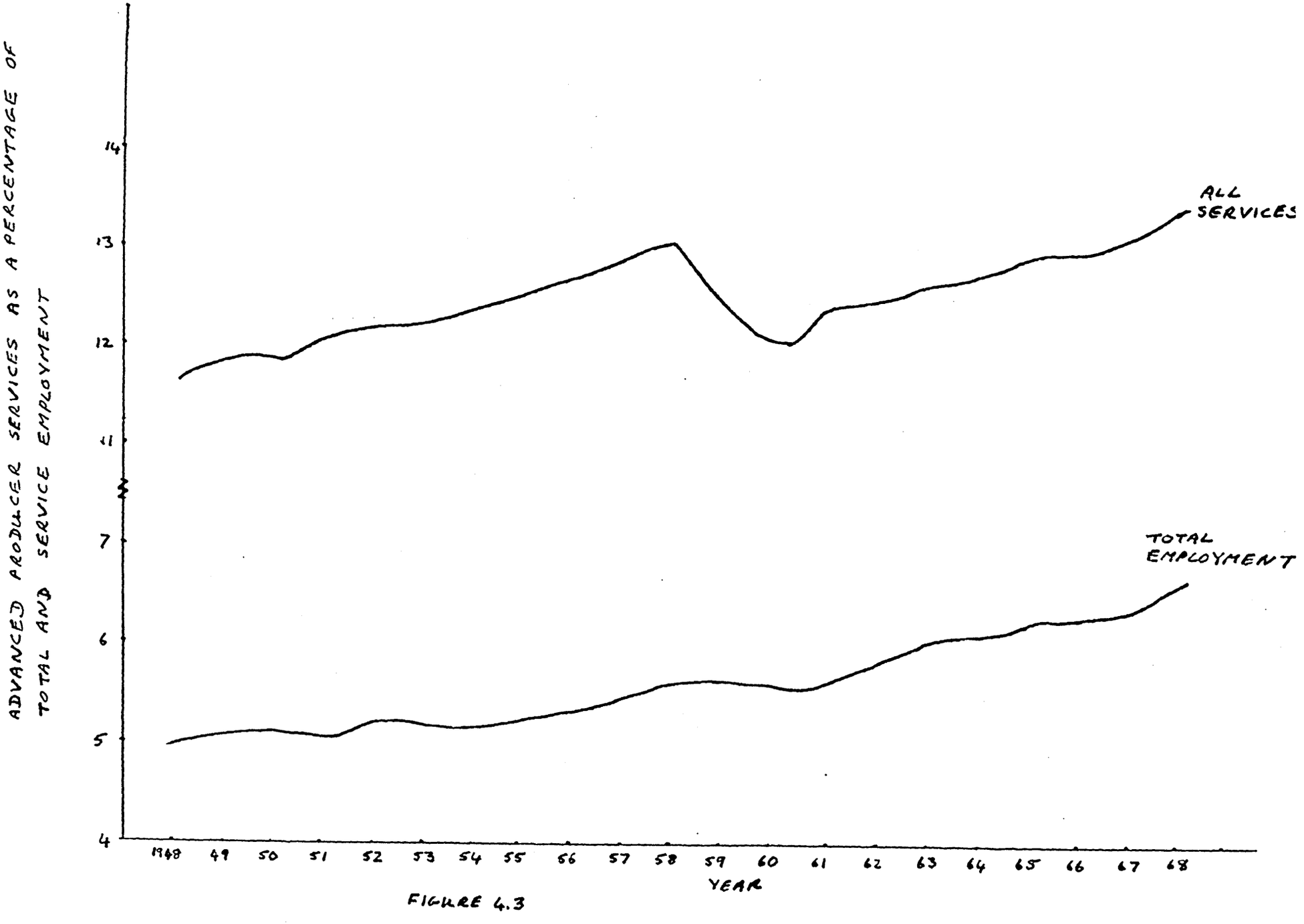

ADVANCED PRODUCER SERVICES AS A PERCENTAGE OF TOTAL AND SERVICE EMPLOYMENT
14
13
12
11
7
6
5
4
ALL SERVICES
TOTAL EMPLOYMENT
1948 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68
YEAR

FIGURE 4.3

Figures 4.1 and 4.2 show the employment trends over the period for primary and manufacturing industries and the four service groups respectively. It is apparent from these that manufacturing was a much larger sector than all the others throughout the period and that the primary sector was declining fairly steadily in employment terms while the service sectors were increasing their employment. Of these, the advanced producer services group still had the lowest absolute number of employees but showed a steady growth throughout the period as did social services. The other two service sectors also grew but more erratically.

The advanced producer services group increased its employment by 48% over the period second only to social services at 52% although of course the former started from a lower base so that the absolute increases in employment for these groups are 492,100 and 1,292,100 respectively. The increase in advanced producer service employment served to raise its share of both total and service employment as can be seen from Figure 4.3. Its share of the former rose from 5% to 6.5% and of the latter from 11.6% to 13.25%.

4.3 Current Trends: 1971-1984

The statistics for this section were derived from the National On-Line Manpower Information System (NOMIS) (see Appendix A). Figures 4.4, 4.5 and 4.6 correspond to figures 4.1, 4.2 and 4.3 of the previous section respectively. The primary sector remained relatively stable in employment terms over the period while manufacturing employment declined increasingly rapidly. By 1971 social services had overtaken transport and distribution to become the dominant service group but both have shown tendency to stabilize their level of employment since then. In contrast employment in both advanced producer and personal services has been rising quite steadily.

These findings are further illustrated by Figure 4.7 which shows the percentage of total employment accounted for by each of the six industry groups.

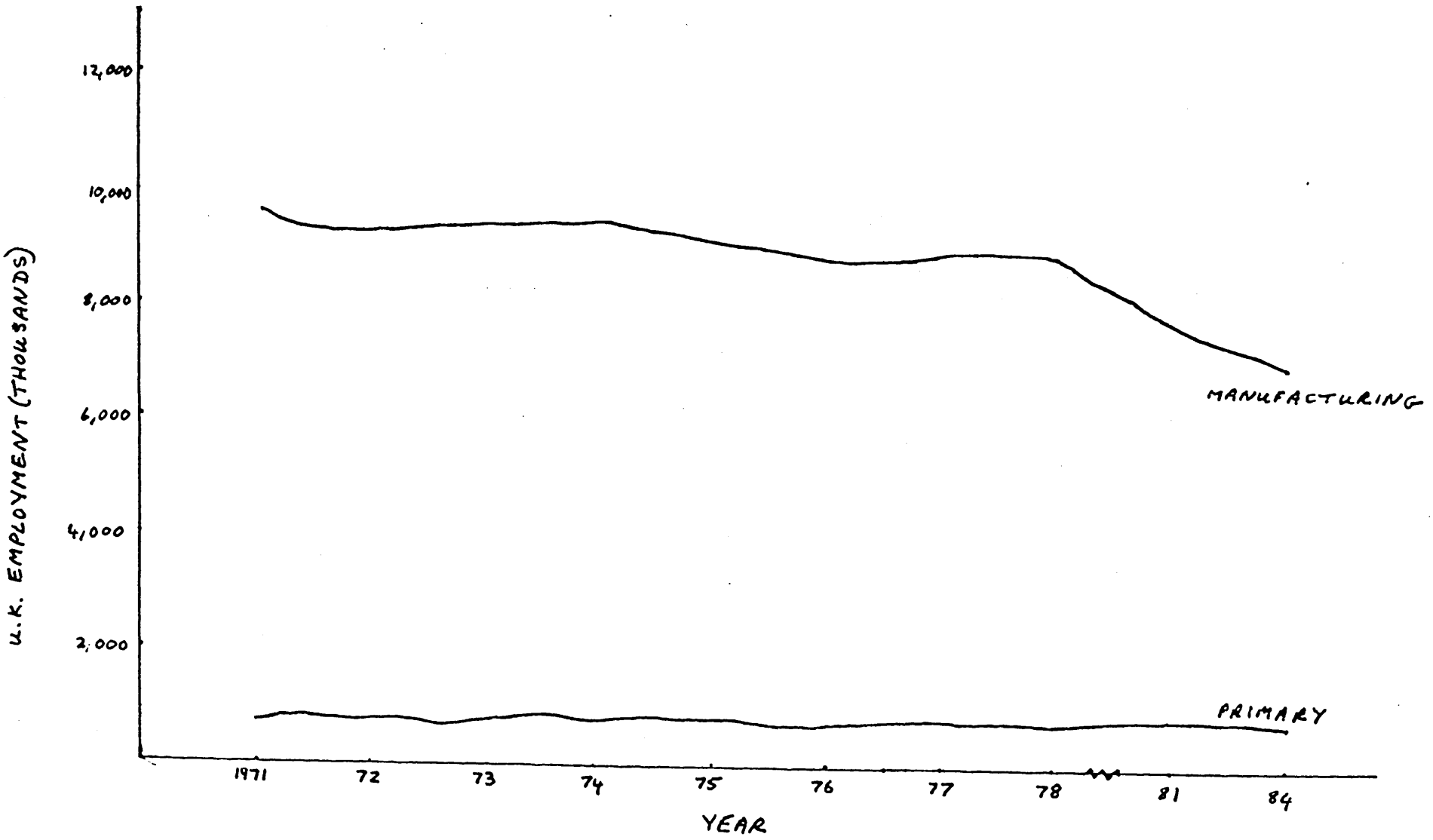

12,000
10,000
8,000
6,000
4,000
2,000
U.K. EMPLOYMENT (THOUSANDS)
MANUFACTURING
PRIMARY
1971
72
73
74
75
76
77
78
81
84
YEAR

FIGURE 4.4.

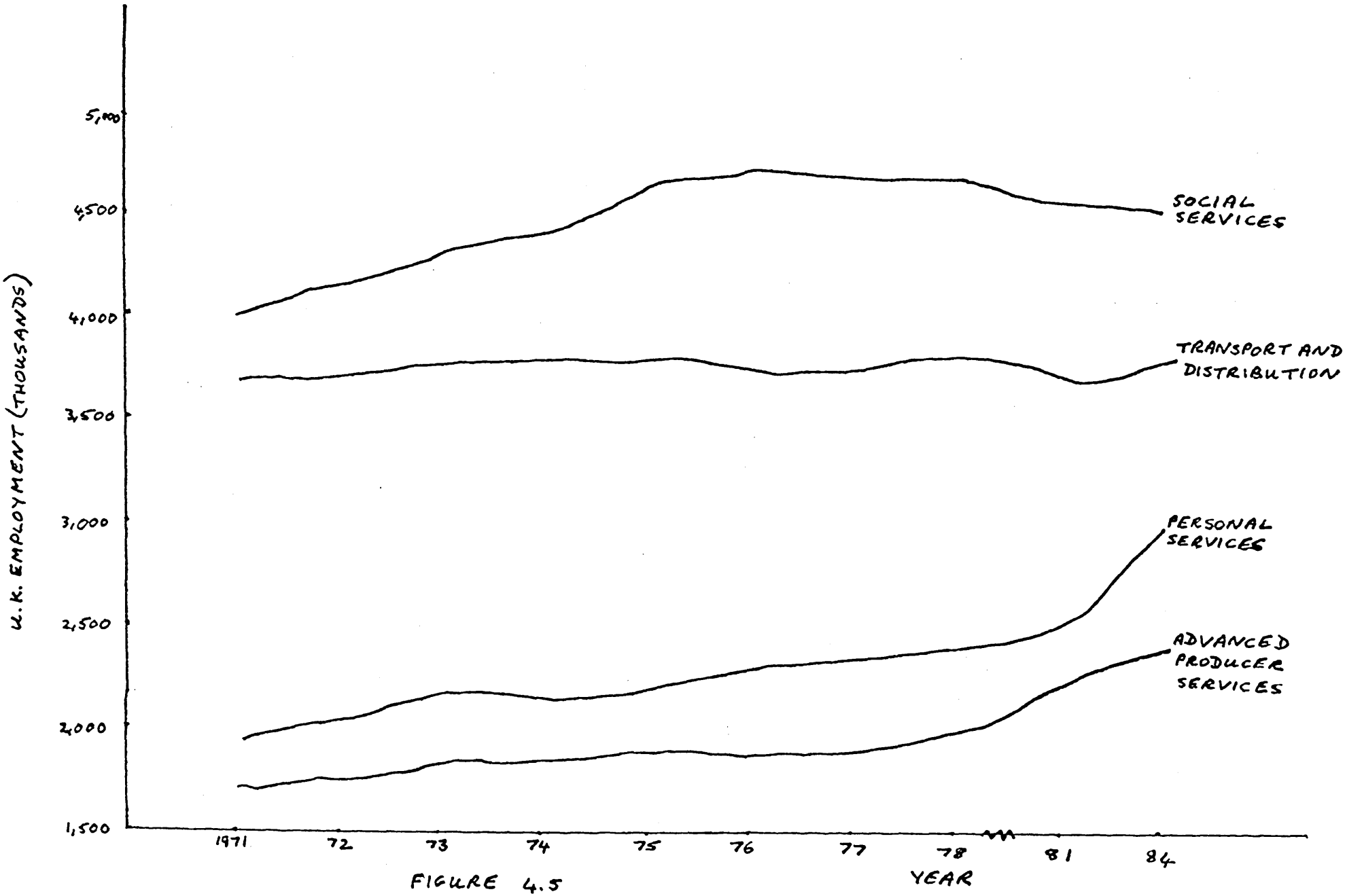

U.K. EMPLOYMENT (THOUSANDS)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1971
72
73
74
75
76
77
78
81
84
YEAR
SOCIAL SERVICES
TRANSPORT AND DISTRIBUTION
PERSONAL SERVICES
ADVANCED PRODUCER SERVICES

FIGURE 4.5

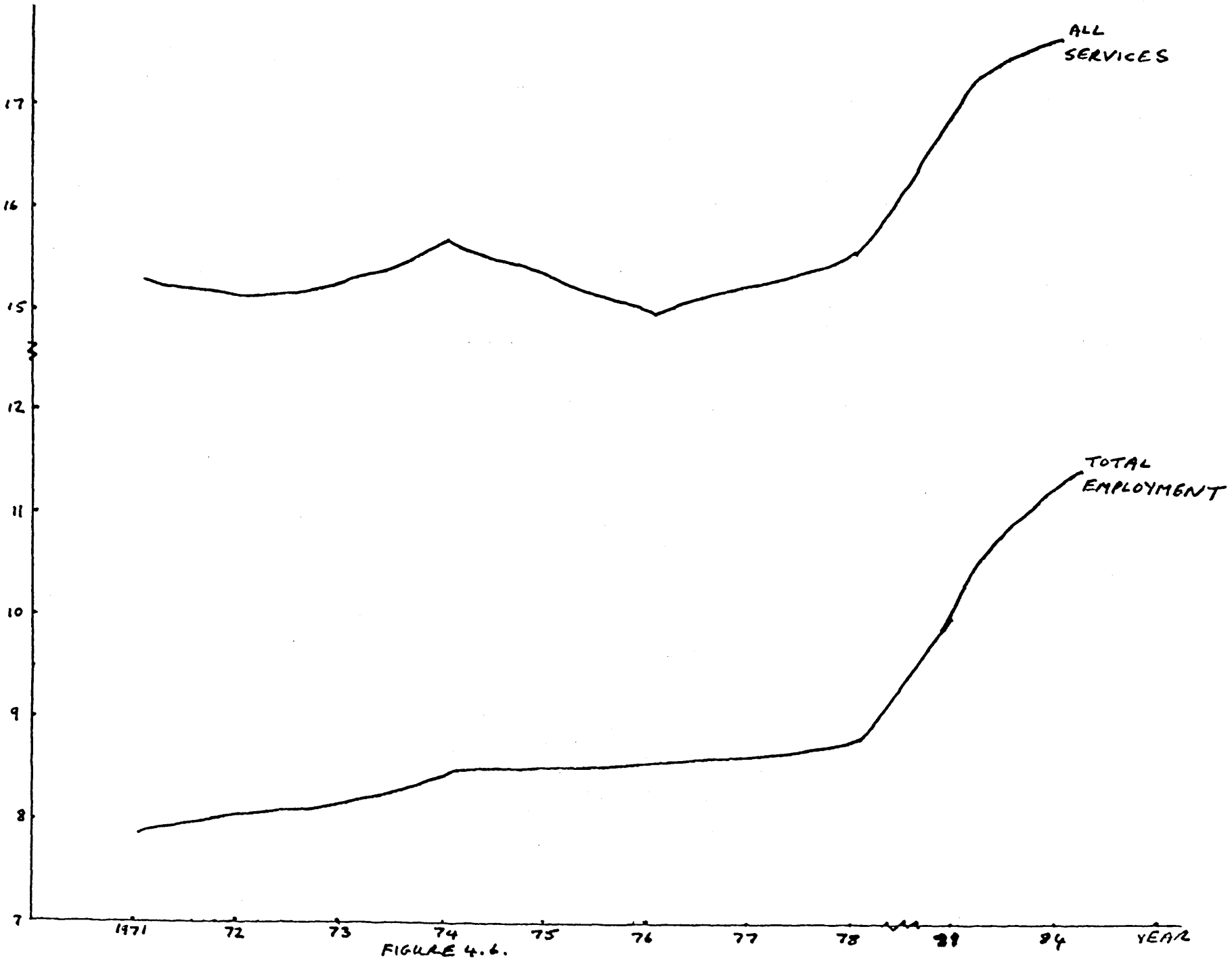

ADVANCED PRODUCER SERVICE EMPLOYMENT AS A PERCENTAGE OF TOTAL EMPLOYMENT. AND SERVICE EMPLOYMEN
17
16
15
12
11
10
9
8
7
ALL SERVICES
TOTAL EMPLOYMENT
1971
72
73
74
75
76
77
78
79
84
YEAR

FIGURE 4.6.

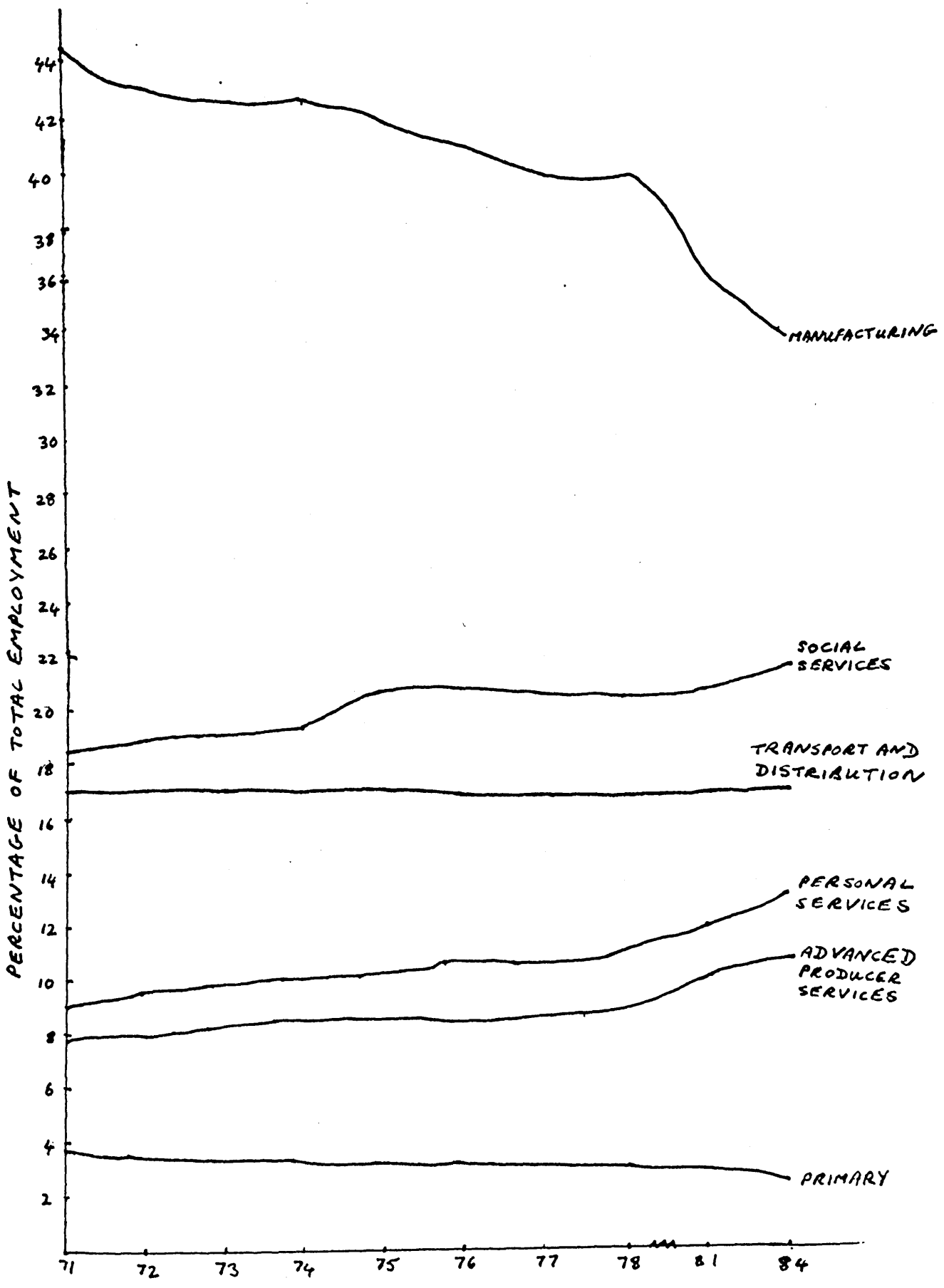

PERCENTAGE OF TOTAL EMPLOYMENT
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
MANUFACTURING
SOCIAL SERVICES
TRANSPORT AND DISTRIBUTION
PERSONAL SERVICES
ADVANCED PRODUCER SERVICES
PRIMARY
71
72
73
74
75
76
77
78
81
84
YEAR

FIGURE 4·7

The advanced producer services group again showed the second highest percentage increase in its employment, this time by 32.7% compared to 53.9% for personal services. As a result the group's share of total employment rose from 7.9% in 1971 to 11.3% in 1984 and its share of all service employment from 15.2% to 17.5% in the corresponding years. Taking the whole period from 1948 to 1984, therefore, the advanced producer service group more than doubled its share of total employment and increased its share of service employment by just over 50%.

Thus, advanced producer services have been, and are, experiencing a quite rapid increase in employment averaging just over 34,000 employees per year, only social services at 59,000 have shown a higher average increase.

4.4 The Structure of National Advanced Producer Service Employment

From sections 4.2 and 4.3 it is apparent that advanced producer service employment has been growing rapidly but exactly what type of employment has been created? Can it serve to replace the jobs being lost in manufacturing or is it bringing new workers into the labour force? This section, using the figures for the 1971-84 period briefly examines the structure of advanced producer service employment, that is, it breaks it down into its male/female, full-time/part-time and industry components. It should be mentioned at this stage that due to confidentiality restrictions imposed by the Department of Employment with respect to its NOMIS database exact figures cannot be published. As a result the figures contained in this and subsequent sections have been rounded to the nearest thousand or disguised as appropriate.

Table 4.1 shows the male/female, full-time/part-time and total a.p.s. figures for 1971 and 1984. While all the groups increased their number of employees the male full-time group decreased its share of the total over the period and also exhibited a lower than average growth rate (32.9% compared to 38.5%). Even so, however, it retained its dominant share of

Table 4.1 The male/female, full-time/part-time breakdown of advanced producer service employment in Great Britain, 1971 and 1984 (thousands)

	1971	%	1984	%	% increase
Total a.p.s. employment	1,716	100.0	2,376	100.0	38.5
of which					
Male full-time	941	54.8	1,251	52.6	32.9
Female full-time	556	32.4	798	33.6	43.5
Male part-time	38	2.2	66	2.8	73.9
Female part-time	181	10.6	261	11.0	44.2

Table 4.2 Industry breakdown of advanced producer service employment in Great Britain, 1971 and 1984 (thousands)

	1971	%	1984	%	% increase
Total a.p.s.	1,716	100.0	2,376	100.0	38.5
of which					
Postal and telecoms	435	25.3	426	17.9	- 2.1
Insurance	266	15.5	299	12.6	12.4
Banking	263	15.3	421	17.7	60.1
Other financial	91	5.3	118	5.0	29.7
Property services	74	4.3	197	8.3	166.2
Advertising	31	1.8	42	1.8	35.5
Other business	173	10.1	296	12.5	71.1
Accountancy	77	4.5	123	5.2	59.7
Legal services	98	5.7	143	6.0	45.9
Research and development	89	5.2	109	4.6	22.5
Other professional	117	6.8	201	8.5	71.8

jobs (52.6%). The fastest rate of growth occurred in male part-time jobs (73.9%) but from a relatively low base so that the absolute gain in such employment was comparatively small.

Just as growth was uneven for the groups shown in Table 4.1 so it was for industries within the a.p.s. sector (Table 4.2). Although the postal services and telecommunications group was by far the largest employer in both 1971 and 1984 it was the only group to experience a decline while at the same time its share of total a.p.s. employment fell dramatically. Indeed, by 1984 the banking group had grown enough to be challenging this dominant position. With regard to the other industry groups, insurance, other financial institutions, research and development and advertising all exhibited below average growth. The fastest growth rate was, however, apparent for property services which more than doubled its employment.

Overall then it appears that part-time employment was increasing more rapidly than full-time employment between 1971 and 1984 but that the latter still far outweighed the former both in absolute terms and in its share of total a.p.s. employment. Similarly differential growth rates were apparent between individual industries but, with the exception of postal services and telecommunications, all the industries were expanding their employment. In the light of this the a.p.s. sector has obviously been a source of job creation between 1971 and 1984.

4.5 Are Advanced Producer Services Population Related?

From the above it is apparent that the advanced producer service group is expanding quite rapidly. This is most likely to be the result of an increasing market for these services, although part of the effect may be due to increased externalization of these services by user firms. That businesses provide the main market for the a.p.s. group was asserted in Chapter Two which defined it. This can be tested indirectly, however, by examining the relationship between advanced producer services and the population figures for Great Britain as obtained from the Population Census for 1971 and 1981.

Table 4.3 Advanced producer service employment per thousand population, Great Britain, 1971 and 1981

	1971	1981	change
Postal services and telecommunications	8.05	7.86	-0.19
Insurance	4.92	5.28	0.36
Banking and bill discounting	4.87	6.50	1.63
Other financial institutions	1.68	2.33	0.65
Property owning and managing	1.37	2.45	1.08
Advertising services	0.57	0.69	0.12
Other business services	3.20	5.61	2.41
Accountancy services	1.43	1.92	0.49
Legal services	1.81	2.20	0.39
Research and development services	1.65	2.09	0.44
Other professional, scientific services	2.16	3.37	1.21
All a.p.s.	31.71	40.30	8.59

Table 4.4 Advanced producer service employment per thousand population, planning regions, 1971 and 1981

		Highest	Lowest	Average
Postal services and telecommunications	1971	19.53	4.57	7.51
	1981	18.61	4.70	7.40
Insurance	1971	14.41	2.52	4.49
	1981	12.83	2.26	4.89
Banking and bill discounting	1971	15.03	2.81	4.40
	1981	19.09	3.61	5.85
Other financial institutions	1971	5.76	0.47	1.48
	1981	6.63	1.28	2.11
Property owning and managing	1971	3.81	0.67	1.23
	1981	5.27	1.49	2.29
Advertising services	1971	3.01	0.08	0.445
	1981	3.08	0.11	0.445
Other business services	1971	11.42	0.86	2.62
	1981	16.02	2.06	4.83
Accountancy services	1971	4.00	0.80	1.32
	1981	4.95	1.05	1.78
Legal services	1971	3.89	1.12	1.71
	1981	4.59	1.52	2.08
Research and development services	1971	3.73	0.40	1.44
	1981	4.90	0.57	1.79
Other professional, scientific services	1971	6.79	0.89	1.94
	1981	8.20	2.08	3.07
All a.p.s.	1971	88.88	17.16	28.64
	1981	100.86	22.58	36.63

Dividing the numbers employed in each a.p.s. industry by the population figure and multiplying by a thousand gives the number of jobs in each industry per thousand population (Table 4.3). All industries except postal services and telecommunications increased their representation nationally between 1971 and 1981 and even in this case the decline was relatively small given that this group still had the highest a.p.s. per thousand figures in both years. In contrast, the other business services group showed the largest positive change over the period.

The relatively wide disparities between the a.p.s. industry per thousand figures ranging from 8.05 to 0.57 in 1971 and 7.86 to 0.69 in 1981 appear to indicate either that they are not population related or that there are significant differences in the propensity to consume individual services.

The former conclusion is reinforced by disaggregating the figures to planning region level. Table 4.4 summarizes the results of this analysis by giving the highest, lowest and average figures for each industry and total a.p.s. in 1971 and 1981. It is apparent from Table 4.4. that the level of a.p.s. per thousand varies, sometimes quite considerably, between industries and regions. Given that large regional differences in the propensity to consume services would not be expected then the a.p.s. group cannot be said to be population related. Moreover, the figures imply that either some regions have greater a.p.s. needs than others or they export their services to other areas, or both.

4.6 The Relationship Between Advanced Producer Services and Gross Domestic Product (GDP)

Just as section 4.5 indirectly tested the hypothesis that advanced producer services are not population related so this section provides an indirect test of whether they are basic in the export base theory sense, that is, is there a relationship between the level of advanced producer services and gross domestic product (G.D.P.)?

If, as hypothesized, advanced producer services are basic then a positive relationship between employment in this sector and G.D.P. might be expected, that is, rising levels of G.D.P. would be associated with rising levels of a.p.s. employment. Singelmann (1978) suggests that this may be the case as he found that it is the 'mature' economies of the Western world which have the highest level of producer services while also having the highest levels of G.D.P. per capita. Daniels (1986b) found a similar relationship for the U.K. It should be noted, however, that even if such a relationship exists, its causality is unclear. It may be that advanced producer services contribute to G.D.P. or that a high level of a.p.s. employment is the result of high levels of G.D.P. Thus, at best, the regression analysis which follows is a tentative guide to whether advanced producer services can possibly be categorized as basic.

Using time series data for 1948 to 1981 regression equations of the form

$$Y = a + bX + \ldots + u \qquad (4.1)$$

and logarithmic form

$$\log Y = a + b \log X + \ldots + e \qquad (4.2)$$

were estimated using ordinary least squares (OLS) for the following variables: DP = gross domestic product, PRI = primary, MAN = manufacturing, SS = social services, APS = advanced producer services, PER = personal services and TD = transport and distribution - all being per capita figures.

The linear equation for these variables was:

$$\begin{aligned} DP = {} & -13{,}060.86 + \underset{(3.35)}{8{,}7015.99}\ SS + \underset{(6.53)}{130{,}495.21}\ PRI \\ & + \underset{(2.36)}{134{,}176.63}\ APS + \underset{(1.45)}{29{,}133.3}\ PER + \underset{(1.15)}{8{,}087.61}\ MAN \\ & - \underset{(0.06)}{11{,}868.6}\ TD \end{aligned} \qquad (4.3)$$

$\bar{R}^2 = 0.93079$ F = 68.244 DF = 6,24

DW = 0.65925
(t statistics in brackets)

and the logarithmic form

$$LDP = 16.198 + \underset{(4.18)}{3.296}\ LAPS + \underset{(5.44)}{1.85}\ LPRI + \underset{(4.73)}{4.486}\ LSS \qquad (4.4)$$

$$\underset{(0.69)}{-0.241}\ LTD$$

$\bar{R}^2 = 0.98014$ $\quad F = 371.11$ $\quad DF = 4,28$

DW = 0.70072

The $\bar{R}^2$ figures for both these equations indicate a good fit while the F statistics indicate that both equations are themselves significant. Similarly the t-statistics for the social services, primary and advanced producer service variables in both equations are significant at the 95% level. The low Durbin-Watson statistic shows, however, that the error term exhibits signs of positive autocorrelation.

This aside, the equations show that as might be expected advanced producer and social services have positive coefficients in both equations. Manufacturing and personal services also do so in the first equation although neither are significant but it is somewhat surprising that the coefficient for the primary sector is also positive and significant as this sector has been declining over the period covered by the data.

A further insight into the relationship between the sectors and G.D.P. can be gained by looking at the planning region figures for 1971 onwards (detailed sectoral figures for the regions are not available prior to this). In general terms these show that contrary to the national figures there is a negative relationship between G.D.P. and the primary and manufacturing sectors. They support the positive relationship between G.D.P. and advanced producer services but no clear trend emerges with respect to the other sectors. Given that the regression equations calculated for the regions generally exhibited low $\bar{R}^2$ and F values

and that the F and t statistics were rarely significant little reliance can be placed on these trends, however.

As expected, a positive relationship between advanced producer service employment and G.D.P. does appear to exist at both national and regional level. The poor fit and lack of statistical significance of most of the equations generated by the regression analysis means, however, that this conclusion is seriously weakened. The low Durbin-Watson statistics for equations (4.3) and (4.4) also indicates that a trend effect might be present. Indeed, given that G.D.P. was rising fairly steadily over the period at a time when all types of service employment were increasing in numbers such an influence might well be expected to be at work. In all, therefore, although the analysis of this section reveals the expected relationship between advanced producer services and G.D.P. if such services were to be part of the basic sector it cannot be relied upon too heavily - more evidence is needed.

4.7 Summary and Conclusions

There is little doubt that the advanced producer service sector has, although starting from a low base, grown steadily and significantly during the post-war period. Between 1948 and 1984 the sector increased its employment by more than 1.15 million jobs while its share of total employment rose from 5% to 11.3% and its share of service employment rose from 11.6% to 17.5%. A large majority of jobs in this sector are full-time but there has been a rapid expansion of part-time jobs in recent years with female employment also growing more rapidly than male employment. Over the period 1971 to 1984 all the advanced producer service industries except postal services and telecommunications have expanded their employment with property services, other professional and scientific services and other business services exhibiting the fastest growth compared to much lower rates of growth for insurance, research and development and other financial services.

From section 4.5 it appears that advanced producer services are not population related, that is, they are indeed orientated towards the corporate rather than the consumer

market. The wide variations between industries and regions in terms of employment in these industries per thousand population may, however, be a reflection of different propensities to consume such services. With this in mind, the market for advanced producer services will be examined more explicitly in Chapter Six via the survey of firms in Leeds and Sheffield.

Finally, section 4.6 provides an initial indication that a relationship exists between advanced producer services and G.D.P. so that the former may have a role to play in the generation of growth. The regression analysis reveals that high levels of G.D.P. are associated with high levels of advanced producer service employment at both national and regional level. As discussed above, however, the nature and indeed the existence of such a relationship cannot be stated with any certainty from these results. It requires further examination and this will be done in the next two chapters.

Overall, then, this chapter provides a background for the work which is to follow while also providing an initial, tentative, look at two of the points raised in earlier chapters - that advanced producer services are orientated towards the corporate market and that they may have a role to play in the generation of growth. The latter point is taken up explicitly in the following chapter which examines locational trends in the advanced producer service sector including the calculation of location quotients which are one of the major tools in testing export base theory and hence whether advanced producer services can be identified as basic.

CHAPTER FIVE

THE LOCATIONAL CHARACTERISTICS OF ADVANCED PRODUCER SERVICES

5.1 Introduction

This chapter is designed to provide the first direct tests of the applicability of the theories outlined in Chapter Three to the advanced producer service sector. The inter-relationship between the locational and growth theories was discussed in section 3.5. To re-iterate, however, the pattern of location of advanced producer service activities will influence their trading behaviour. If provision of such services is uniform across regions then demand for them should be satisfied locally, that is, it would be unnecessary for firms wishing to purchase advanced producer services to do so from suppliers outside of the region in which they are located, except perhaps in the case of a few highly specialized services. If, on the other hand, significant differences exist between regions in terms of the availability of advanced producer services there is a greater incentive for inter-regional trade to occur as in areas where the required services are not available firms must either buy them from outside of the area or not use them at all. This highlights one of the ways in which consequent disparities in regional growth may occur. If such services are unavailable in a region firms to which they are essential will not establish themselves there but instead locate or re-locate in regions where advanced producer services are freely available. This in turn will inhibit the growth of these services in the original region due to insufficient demand leading to a perpetuation of this process over time as predicted by the cumulative causation model.

The existence of such a trade in advanced producer services would imply, contrary to prior usage of export base theory, that they help generate regional income directly and hence can be classified as basic within the context of the theory. This implies that the regions with the largest advanced producer service sectors will be in a strong position vis-

a-vis other regions as the former will have a greater export capability and so will be able to attract a higher level of income from this source. Export base theory is tested specifically in sections 5.2.2 and 5.3.3 through the calculation of location quotients for the planning and metropolitan regions respectively for both the advanced producer service group as a whole and individual industries within it.

The remainder of this chapter examines the locational behaviour of advanced producer services with a view to assessing the ability of the three locational models-central place theory, network theory and information diffusion theory to 'explain' it. As already indicated in Chapter Three network theory is too abstract to be of much assistance in doing so. The only prediction that can be made from it is that the nature of advanced producer services would lead them to be concentrated in 'information-rich' areas, probably major cities. Similarly, central place theory's focus upon physical transportation networks is likely to limit its applicability to advanced producer services for which these are relatively unimportant. Despite this, however, Christaller's urban hierarchies model is the most precisely formulated of the theories and so can be used as a starting point for the study of advanced producer service location. Information diffusion theory, by concentrating on information relaying, rather than physical transportation, networks allows for the possibility of 'off-centred' service providing places and so may help to explain any unexpected locational patterns. Again, however, advanced producer services appear likely to be concentrated in large cities where multiple information relaying networks converge.

The difficulties of testing information diffusion theory in this context resulting from its imprecise nature mean that most of this chapter is directed towards examining the applicability of central place theory to advanced producer services. Where this breaks down, information diffusion theory can be considered as a possible supplement to, or even replacement for, it. That it will break down appears likely from the analysis of section 4.5 of the previous chapter. Central place theory as a model of retail development is orientated towards personal, rather than corporate, consumption of services so that its hierarchy of

centres will be population related. That is, large population centres will have the widest range of services containing all those provided by lower level centres plus the more specialized services which require a large market area. Advanced producer services, operating in the corporate market and apparently not population related, are less likely to conform to this pattern.

Finally, changes in location over time are considered to see if advanced producer services are becoming even more concentrated in regions in which they were already over-represented, as cumulative causation theory would predict, or if an equalization of a.p.s. activity is taking place along the lines of the neoclassical growth model. This chapter, therefore, provides the first real insights into the behaviour of, and the applicability of the theories of growth and location to, the advanced producer service sector.

5.2 The Planning Regions

5.2.1 The Planning Region Hierarchy

In terms of the number of employees in advanced producer services in 1984 (the latest year for which detailed figures are available) London dominates the other regions with well over a quarter of a million more such jobs than the South East, the next region in the hierarchy (see Figure 5.1). The dominance of London can also be seen in terms of its percentage share of total a.p.s. employment (Table 5.1) although its share has declined since 1971. Three other regions have experienced a fall in their relative share, the North West, Wales and Scotland. All four of these regions have, however, experienced gains in a.p.s. over the 1971-84 period so that their relative decline is the result of slower rates of growth than the other regions.

This point is illustrated in Table 5.2 column 1 which shows that these four regions exhibited the smallest percentage changes in a.p.s. employment between 1971 and 1984, each being below the Great Britain average. In terms of the number of jobs created, however, London did best of all increasing its a.p.s. employment by over 175,000, followed by the

South East with just over 125,000. At the other end of the scale lay Wales with 14,000 far below the next lowest of 30,000 for the East Midlands. Broadly speaking, growth in a.p.s. appears to be strongest in the South while northern regions exhibit relatively weak growth.

The remaining two columns of table 5.2 give the share of a.p.s. in total regional employment in 1971 and 1984 from which it can be seen that in all regions the share of this group increased over the period. In 1971 London, the South East and East Anglia had a.p.s. levels above the national average but by 1984 this was only the case for London.

Thus it appears that the regional hierarchy of a.p.s. activity is dominated by London despite its slower rate of growth. This is of course principally the result of its larger base in 1971. Further, London and the South East combined accounted for almost half of Britain's a.p.s. employment in 1984. Although this was 1.26% less than in 1971 the adjacent regions of East Anglia and the South West increased their share by 1.84% so that the concentration of a.p.s. in the South slightly increased.

Fig. 5.1 Planning Region Hierarchy: Employment in a.p.s., 1984

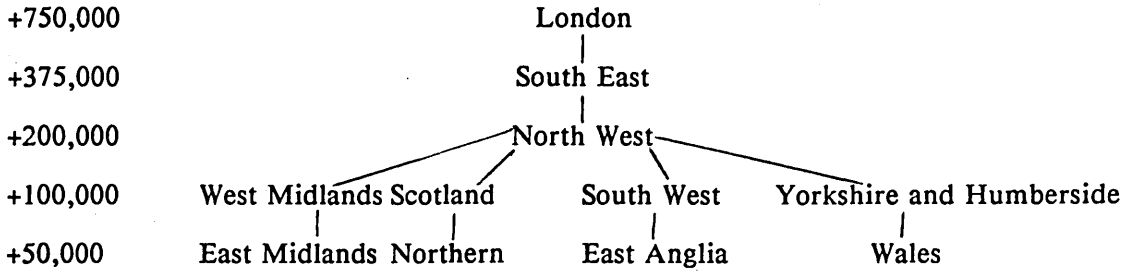


Table 5.1 Planning Regions: Share of Great Britain's total a.p.s. employment (%) 1971 and 1984

Region	1971	1984	Change
London	35.22	32.94	-2.28
South East	15.64	16.66	+1.02
East Anglia	2.49	3.18	+0.69
South West	6.05	7.15	+1.10
West Midlands	7.03	7.54	+0.51
East Midlands	3.89	4.07	+0.18
Yorkshire and Humberside	5.59	5.65	+0.06
North West	10.36	9.31	-1.05
Northern	3.14	3.51	+0.37
Wales	2.86	2.66	-0.20
Scotland	7.73	7.33	-0.40

Table 5.2 Growth rates of a.p.s. employment in the planning regions 1971-84

Region	% change in a.p.s. employment 1971-84	A.p.s. employment as a percentage of total regional employment	
		1971	1984
London	29.49	16.62	22.53
South East	47.52	8.73	10.55
East Anglia	77.18	9.32	10.64
South West	63.72	7.96	10.93
West Midlands	48.63	5.83	9.03
East Midlands	44.89	5.07	6.68
Yorkshire and Humberside	39.93	5.40	7.54
North West	24.53	7.20	9.65
Northern	54.81	4.88	7.83
Wales	28.63	5.62	7.14
Scotland	31.21	7.33	9.15
Great Britain	38.48	8.63	11.40

Thus the spatial inequality of a.p.s. employment is clearly apparent. Differences between regions in terms of the proportion of total employment accounted for by this group (Table 5.2) are greater than would be expected if all regions were to be just self-sufficient in such services. At the same time, differences in regional growth rates of a.p.s. employment are pronounced. The pattern of change suggests that although a decentralization of these activities from London is taking place this effect is localized as it is the South East, South West and East Anglia which have benefitted most. Moreover, a relative shift in activity may also be taking place away from Scotland, the North West and Wales towards central England.

Figure 5.1 shows that a hierarchy of a.p.s. activity does exist for the planning regions but that it does not develop along the lines of the central place model as the first three tiers each consist of only one region. Indeed, of the locational theories information diffusion theory appears the most applicable. The rate of growth of a.p.s. employment is slower for London than that for its surrounding regions (Table 5.2) while at the same time London's share of total a.p.s. employment is falling. This may imply that diffusion of this activity is taking place from the centre (London) to its hinterland. If so, then we would expect regions in the hinterland (South East, South West and East Anglia) to increase their share of total a.p.s. employment as in fact is the case. Further, limited diffusion of information relating to these activities may account for the 'tapering off' of this effect as we move northwards, perhaps explaining why it is the regions most remote from London which have also decreased their share of the total as a result of their lower than average growth rates in a.p.s. employment.

The applicability of these theories will be examined further in section 5.2.3 at individual planning region level. As central place theory is founded on a city rather than a regional basis its use in the context of this section may be inappropriate, hence the finding that the observed pattern of a.p.s. activity does not conform to this model. Before this, however, section 5.2.2 examines export base theory through the calculation of planning region location quotients.

5.2.2 Location Quotients for Advanced Producer Services in the Planning Regions 1971 and 1984

The degree of over- or under-representation of advanced producer services in the planning regions is shown in Tables 5.3 and 5.4 which cover 1971 and 1984 respectively. To recap, these are calculated by means of equation (3.16) in Chapter 3 and a location quotient value greater than one implies that the region is specialized in a.p.s. and exports some of its product to other regions. Figures are given for both individual a.p.s. industries and total

a.p.s. These take the form of the highest and lowest location quotients together with a list of regions for which the location quotient is greater than one.

Thus it appears that London was by far the most frequently over-represented in a.p.s. activities as might be expected from the figures given in section 5.2.1. In 1971 and 1984 London had a location quotient greater than one for ten of the eleven a.p.s. industries, the exception being research and development, and consequently for the a.p.s. group as a whole. Between 1971 and 1984, London increased its over-representation in postal services and telecommunications, banking and bill discounting and legal services in contrast to falling location quotients for the other groups in which it was over-represented. It is apparent, however, that the shift of activity away from London was relatively localized in spatial terms. This can be seen by considering the other regions which had high location quotients for each industry. For example, the decline in London's over-representation in insurance appears to have been the result of a movement of activity to East Anglia, the South West and South East which increased their over-representation or became over-represented in 1984.

The concentration of a.p.s. activity in the South is emphasised by the fact that of the northern regions only the North West for insurance and Scotland for legal services were over-represented in 1971 while in 1984 this was the case only for Yorkshire and Humberside in other financial services and Scotland in legal services and other professional and scientific services.

The highest value for the individual industry location quotients rose in only three cases between 1971 and 1984 - postal services and telecommunications, banking and bill discounting, and legal services - while falling for all the others as well as total a.p.s. The lowest value, on the other hand, rose for all groups except insurance for which it fell.

In 1984 East Anglia replaced the South West in being over-represented in postal services and telecommunications; the North West replaced the South West and South East in

being over-represented for insurance; Yorkshire and Humberside and the South West joined London in being over-represented in property owning and managing; the South East became over-represented in legal services; and the South East and Scotland become over-represented in other professional and scientific services.

The analysis of location quotients provides some support for the hypothesis that a.p.s. can be said to be 'basic' or exporting activities. In all cases at least one region is significantly over-represented with respect to the industry concerned while very low location quotients in some cases indicate a significant degree of under-representation in other regions. Although it may be that different regions have different a.p.s. needs, the range of location quotient values appears too large for this to be the sole reason for such disparities. Indeed as already mentioned in section 3.2.1 the location quotient approach implies that a region will become self-sufficient in a product or industry before it begins to export which may not in fact be the case. This will be examined further in Chapter 6 which, among other aspects, looks at the export behaviour of a.p.s. industries in Yorkshire and Humberside. If the self-sufficiency argument is true then this region would only be expected to export other financial services to other regions on the basis of the 1984 data.

In spatial terms the location quotients reinforce the planning region hierarchy of Figure 5.1 to a certain extent although East Anglia is more frequently over-represented in a.p.s. activities than might have been expected.

A closer look at the highest and lowest location quotient figures given in Tables 5.3 and 5.4 reveals that in general the difference between them is greatest for the more specialized types of services. For example, in 1984 the widest disparity between the figures was for advertising and market research, followed by other business services and research and development. This implies that the more specialized a service is the more likely it is that organisations which provide such services will be concentrated in specific areas. Consequently, they will sell their product to a wider hinterland than is the case for more

ubiquitous services. As most of the other services which form the advanced producer service group are also concentrated in London, however, it may be the case that a distinction can also be made between more and less specialized activities within each industry. Whether this is actually the case cannot be determined due to the aggregate nature of the data - it would require the carrying out of industry case studies which lies outside the scope of this research.

In all, then, it is apparent from this section that London is the principal location for advanced producer services; with a few exceptions it is the planning regions in the south of England which are over-represented in these activities; some convergence of location quotient values is taking place; changes are occurring in terms of the planning regions which are under-/over-represented in such services; and that the more specialized services tend to be the most concentrated in a few regions. On the basis of the location quotient figures some export activity is occurring for all the industries in the advanced producer service group. This will be explored further in section 5.3.3 when similar calculations will be made for the metropolitan regions.

5.2.3 The Intra-Regional Distribution of Advanced Producer Service Employment

Having examined the distribution of advanced producer services between planning regions in section 5.2.1 this section extends the analysis by disaggregating the data to explore trends in employment in this sector within individual planning regions. In order to do so, the CURDS functional region system is used (see Appendix A). This enables us to distinguish between upper-tier metropolitan regions and lower-tier free-standing functional regions.

If the predictions of central place and information diffusion theory are applicable to advanced producer services the largest concentration of them should be found in the metropolitan regions and a hierarchy of centres of a.p.s. provision should exist in each planning region. The hierarchy being most easily derived from the top downwards would

therefore be expected to conform most closely to the Christaller model of central place theory (see section 3.2.3) although it is very unlikely that it would be identical. Indeed, Figure 5.1 shows that the national hierarchy itself does not conform precisely to this model.

Table 5.3 Location quotients for a.p.s. in the Planning Regions, 1971

Industry group	Highest	Lowest	LQ>1
Postal services and telecommunications	1.677	0.591	London (1.677), South West (1.072)
Insurance	2.024	0.528	London (2.024), East Anglia (1.085), North West (1.004)
Banking and bill discounting	2.133	0.540	London (2.133)
Other financial services	2.365	0.454	London (2.365)
Property owning and managing	1.921	0.497	South East (1.194), London (1.921), South West (1.041)
Advertising and market research	3.645	0.158	London (3.645)
Other business services	2.463	0.278	London (2.463), South East (1.161)
Accountancy services	1.915	0.608	London (1.915)
Legal services	1.482	0.644	London (1.482), South West (1.232), Scotland (1.155), South East (1.032)
Research and Development	2.785	0.278	South East (2.785), East Anglia (1.789), South West (1.586)
Other professional, scientific services	2.168	0.423	London (2.168)
All a.p.s.	1.937	0.563	London (1.937), South East (1.025)

Table 5.4 Location quotients for a.p.s. in the Planning Regions, 1984

Industry group	Highest	Lowest	LQ>1
Postal services and telecommunications	1.795	0.688	London (1.795), East Anglia (1.079)
Insurance	1.755	0.465	London (1.755), East Anglia (1.333), South West (1.217) South East (1.041)
Banking and bill discounting	2.287	0.620	London (2.287)
Other financial services	1.509	0.664	London (1.509), Yorkshire and Humberside (1.197), South West (1.066)
Property owning and managing	1.741	0.635	London (1.741), South East (1.005)
Advertising and market research	3.141	0.234	London (3.141)
Other business services	2.207	0.356	London (2.207), South East (1.229)
Accountancy services	1.800	0.658	London (1.800)
Legal services	1.606	0.668	London (1.606), Scotland (1.123), South West (1.078)
Research and development	2.296	0.285	South East (2.296), East Anglia (1.962), South West (1.108)
Other professional, scientific services	1.597	0.599	London (1.597), South East (1.151), Scotland (1.050)
All a.p.s.	1.860	0.632	London (1.860), South East (1.034)

Before proceeding with the analysis, three operational difficulties must be noted. Firstly, it is necessary to combine the London and South East planning regions as by

definition the London metropolitan region is larger than the London planning region; secondly, East Anglia will be an exception to the general pattern as it contains no metropolitan regions; and, thirdly, some of the free standing functional regions span more than one planning region - where this is the case they will be allotted to the planning region in which the largest of their component areas is situated.

The structure of the a.p.s. sector in each of the planning regions can be summarized as follows:

A) **London and the South East**

This area contains three metropolitan regions - London, Brighton and Portsmouth - and twenty-two free-standing functional regions. In terms of a.p.s. provision London totally dominates the region accounting for 87.3% of such services in 1971 and 84.2% in 1984. Of the other centres only four accounted for more than one per cent of regional a.p.s. employment - the other two metropolitan regions, Oxford and Southampton. In all these five regions combined contained 93.7% and 92.4% of a.p.s. employment in 1971 and 1984 respectively. Given that (from table 5.1) London and the South East combined included 50.86% of a.p.s. employment in Great Britain in 1971 and 49.6% in 1984 this again clearly illustrates the massive over-representation of London in a.p.s. activity.

B) **East Anglia**

This region contains no metropolitan regions and eight free-standing functional regions. Of these Norwich (1971, 30.4%; 1984, 27.0%) and Cambridge (1971, 26.0%; 1981, 29.6%) stand at the top of the hierarchy, together accounting for over 50% of the total. Next come Ipswich (1971, 16.15%; 1984, 15.7%) and Peterborough (1971, 14.1%; 1984, 15.0%) while the remaining four free-standing functional regions each account for a much lower proportion, between 4.2% and 2.2%. Thus in East Anglia, which has the smallest share of the national total of a.p.s. employment (see Table 5.1), the top four cities combined held 86.65% of its

a.p.s. employment in 1971 which rose to 87.3% in 1984, again indicating a concentration of these activities in a few centres.

C) **South West**

This region has only one metropolitan region, Bristol, and eighteen free-standing functional regions. In 1971 30.2% of the South West's a.p.s. employment was to be found in Bristol compared to 30.5% in 1984. Of the other cities, only one, Bournemouth, contained more than 10% of the region's a.p.s. employment (1971, 12.85%; 1981, 12.0%) and another three contained more than 5% in 1971 - Plymouth (8.0%), Exeter (6.7%) and St. Austell (5.6%) - compared to four in 1984 - Swindon (7.5%), Exeter (6.9%), Plymouth (6.9%) and Cheltenham (5.1%). In total, therefore, the five cities with the largest shares in each year comprised 63.35% of the total in 1971 and 63.8% in 1984. Thus it appears that a.p.s. employment in the South West is more evenly spread than that for the previous two regions.

D) **West Midlands**

This area contains two metropolitan regions, Birmingham and Coventry, and eight free-standing functional regions. Birmingham is the dominant centre in this region (1971, 64.4%; 1984, 62.0%), followed by Coventry (1971, 10.9%; 1984, 12.8%) so that again the metropolitan regions are at the top of the hierarchy together accounting for 75.3% of regional a.p.s. employment in 1971 falling to 74.8% in 1984. The next three cities in the hierarchy - Stoke on Trent (7.6%, 7.85%), Shrewsbury (5.1%, 4.5%) and Worcester (4.6%, 3.5%) are the only ones which contain more than 2.5% of the West Midlands a.p.s. employment. Combining the five gives figures of 92.6% in 1971 and 90.65% in 1984, indicating a high degree of centralization.

E) **East Midlands**

This area contains one metropolitan region, Nottingham, and thirteen free-standing functional regions. Nottingham stands at the top of the hierarchy (1971, 30.9%; 1984, 32.1%) followed by Leicester (1971, 20.9%; 1984, 20.1%) and Northampton (11.3%; 13.6%). Of the

remaining free standing functional regions only three accounted for more than 5% of the regions a.p.s. employment in either or both years - Derby (9.5%, 9.4%), Lincoln (6.3%, 5.6%) and Chesterfield (6.2%; 4.7%). Together, the five regions which contained over 5% of the region's a.p.s. employment in both years accounted for a total of 78.9% in 1971 and 80.8% in 1984.

F) **Yorkshire and Humberside**

This region contains two metropolitan regions, Leeds and Sheffield, and eleven free-standing functional regions. As the pattern which appears to be emerging from the above indicates that metropolitan regions be at the top of the hierarchy within the planning regions it is no surprise to find this to be true of Yorkshire and Humberside as well. Leeds (1971, 30.6%; 1984, 31.5%) and Sheffield (19.2%; 21.0%) appear clearly as the first and second tiers while the third comprised of Bradford (11.4%; 10.3%), Hull (9.0%; 9.7%) and York (6.8%; 6.25%) is also clearly discernible. These five cities together accounted for 77% of regional a.p.s. employment in 1971 rising to 78.75% in 1984.

G) **North West**

This region contains four metropolitan regions - Manchester, Liverpool, Preston and Blackburn - and six free-standing functional regions. Manchester (1971, 49.3%; 1984, 49.6%), followed by Liverpool (35.1%; 32.7%), lies at the top of this regional hierarchy. The remaining two metropolitan regions, Preston (3.9%; 5.8%) and Blackburn (2.5%; 2.3%), have rather low shares, principally because of the strength of Liverpool and Manchester in much the same way as was the case for Brighton and Portsmouth in the London and South East region. Of the free-standing functional regions Blackpool (5.2%; 4.3%) performs better than Blackburn in both years and better than Preston in 1971. Together the four metropolitan regions plus Blackpool accounted for 96% of regional a.p.s. employment in 1971 and 94.7% in 1984.

H) **Northern**

There are two metropolitan regions in this planning region, Newcastle-upon-Tyne and Teesside, and eight free-standing functional regions. As might be expected Newcastle-upon-Tyne (1971, 53.2%; 1984, 50.4%) appears at the top of the hierarchy followed by Teesside (19.0%; 22.8%). A third level of three cities - Carlisle (6.5%; 6.0%), Sunderland (5.8%; 5.5%) and Darlington (4.5%; 3.9%) - then exists. The five named regions contained 89% of such employment in 1971 falling to 88.6% in 1984.

I) **Wales**

This region contains three metropolitan regions - Cardiff, Swansea and Newport- and six free-standing functional regions. Again the metropolitan regions fare well with Cardiff (1971, 41.3%; 1984, 42.9%) being followed by Swansea (15.3%; 13.0%) and Newport (9.8%; 12.0%). In 1971, however, Merthyr Tydfil's share of regional a.p.s. employment was higher at 12.2% than that for Newport but this fell to just 3.0% in 1984. Otherwise, Llandudno (9.75%; 9.8%) and Llanelli (8.8%; 9.3%) had the highest shares of a.p.s. employment. Together the five strongest regions in 1971 accounted for 88.35% and in 1984 for 87%.

J) **Scotland**

Here there are two metropolitan regions, Edinburgh and Glasgow, and fifteen free-standing functional regions. The metropolitan regions are again at the top of the hierarchy - Glasgow (1971, 40.5%; 1984, 38.1%) and Edinburgh (25.4%; 26.1%) - while the third level of the hierarchy is composed of Aberdeen (6.5%; 9.0%) and the fourth of Dundee (4.7%; 4.6%) and Inverness (3.5%; 5.0%). Together these five regions accounted for 80.6% of the planning region's a.p.s. employment in 1971 and 82.8% in 1984.

This region by region account of a.p.s. activity in the planning regions over the period 1971 to 1984 can now be drawn together to provide an indication of the trends, if any, in a.p.s. employment throughout the regions during this period. Beginning with the role of the metropolitan regions it is apparent that the more of these there are in a region the higher is

the proportion of a.p.s. activity contained within them. For example, in 1971 the metropolitan regions accounted for 90.9% of a.p.s. employment in London and the South East and 90.8% in the North West where there are three and four metropolitan regions respectively. This contrasts with the figures for the regions with only one metropolitan region, the South West (30.2%) and the East Midlands (30.9%). By 1984 the range had decreased with the figures being 90.4% for the North West and 88.6% for London and the South East, and 30.5% for the South West and 32.1% for the East Midlands. In all, the metropolitan regions share had fallen in five regions (London and the South East, the West Midlands, North West, Northern and Scotland) and risen in four (South West, East Midlands, Yorkshire and Humberside and Wales). Thus there is no clear cut pattern regarding the changes in the metropolitan regions share of a.p.s. activity in the planning regions, that is it is not possible to say if overall a centralization of a.p.s. activity is taking place or vice versa.

Given the fact that the planning regions have different numbers of metropolitan regions within them perhaps a better guide to the degree of centralization is to consider the share of the five metropolitan/free-standing functional regions which have the largest numbers of workers employed in a.p.s. industries. For this group the range between the highest and the lowest figures is much smaller than for the metropolitan regions alone. In 1971 the highest figure was 96% in the North West and the lowest 63.55% in the South West and in 1984 the corresponding figures were 94.7% and 63.8% for the same regions. Five planning regions increased and five decreased the share of their a.p.s. employment contained within this group between 1971 and 1984 so again no clear cut trend is evident. This is also true of the relative distribution of employment between centres in the five centre groups where, for example, decentralization has occurred away from London towards the other centres in the case of London and the South East but centralization towards the two metropolitan regions has taken place in the West Midlands.

It appears from the above, despite having shown that a.p.s. are not population related (see section 4.5), that the largest population centres at metropolitan and free-standing

functional region level have correspondingly relatively high numbers of workers in a.p.s. employment. This at first sight appears to imply that the meshing of networks predicted by central place theory for several types of services/economic activity holds but the existence of off-centred a.p.s. providing placed weakens this hypothesis. Regional hierarchies of a.p.s activity do in practice exist but do not take the Christaller form of 1,2,6,18 . . . centres at progressively lower levels. The commonest structures are 1,1 (9 regions); 1,1,3 (5 regions); 1,1,3,5 (4 regions) and 1,1,4,3 (2 regions). Thus, with the exception of London and the South East, there appears to be one dominant centre in each region followed by another less dominant centre rather than two which would be the case for the Christaller model.

In terms of information diffusion theory the existence of a dominant regional centre is also to be expected. The pattern of diffusion from this centre is, however, unclear. It appears that a high level of adoption and/or a significant meshing of information networks takes place in a second centre within the region but after this no consistent picture emerges. The theory therefore seems to have little explanatory power in this context.

From this analysis of the intra-regional distribution of advanced producer services we can conclude that the structure of a.p.s. provision varies between planning regions although the metropolitan regions are always among those with the largest share of a.p.s. activity and hence are at or near the top of each regional hierarchy (except in East Anglia which has no metropolitan regions). Among the free-standing functional regions the largest population centres also tend to have the highest levels of a.p.s. activity but this is by no means universal and so cannot be authoritatively stated as a general case. The relative strengths of the component areas within each planning region appear to alter over time, 1971 to 1984, but the movement has not been consistent in any one direction, for example, towards centralization of a.p.s. in the upper reaches of the regional hierarchies. Finally, the planning region hierarchies do not conform to central place theory in their structure and information diffusion theory appears unable to explain the observed phenomena.

5.3 The Metropolitan Regions

Each metropolitan region, as defined by Coombes et al (1980, 1981), consists of one Dominant functional region plus those Sub-Dominant functional regions having over 7.5% of their employed residents working in the Dominant or an adjacent Sub-Dominant functional region. Significant differences in the size of the metropolitan regions are apparent, for example, in 1971 the population of the largest metropolitan region, London, was 12,814,000 compared to only 274,000 for the smallest, Blackburn.

5.3.1 Advanced Producer Service Employment in the Metropolitan Regions 1971 and 1984

Figure 5.2 shows the hierarchy of metropolitan regions in 1984 in terms of numbers employed in a.p.s. (again due to confidentiality restrictions the numbers are rounded to the nearest 5,000). This clearly shows the dominance of London over all the other metropolitan regions in terms of a.p.s. employment while table 5.5 which gives each metropolitan regions share of national and regional a.p.s. employment for 1971 and 1984 reinforces this point. From table 5.5 it is apparent that the fall in the metropolitan region's total share of national a.p.s. employment is largely due to the falls displayed by four of the regions with the highest shares in both years, London, Manchester, Liverpool and Glasgow. Thus a slight decentralization of activity appears to be taking place from the larger to the smaller metropolitan regions and the free-standing functional regions.

Comparing the national with the regional shares of employment reveals, for example, that although Birmingham had a smaller share of national a.p.s. than Manchester in 1971 Birmingham was more dominant in the West Midlands planning region than Manchester was in the North West. This implies that the national percentage shares are more reliable than regional percentage shares when examining the relative importance of the metropolitan regions.

In absolute terms, as shown in Table 5.6, London exhibited by far the largest increase in a.p.s. employment over the period, some seven times greater than that for Birmingham which exhibited the second highest increase. Apart from these, all the metropolitan regions except Swansea which remained stable, increased their a.p.s. employment. In terms of the percentage change, however, Teesside increased its a.p.s. employment by 90% and Preston did so by 85.7% although these were, and still are, two of the 'smallest' metropolitan regions according to this criterion. Liverpool showed the lowest percentage growth at 16.1%, followed by Newport at 20%. No apparent trend is discernible between size of region and the percentage increase in a.p.s. employment.

A comparison of the percentage change figures for the metropolitan regions with the national percentage change figure of 38.5% indicates that eleven of the twenty metropolitan regions increased their a.p.s. employment at a rate above the national average but only one of these, Birmingham, is to be found in the upper reaches of the metropolitan region hierarchy.

Thus, a.p.s. employment in the metropolitan regions increased in nineteen out of twenty cases over the period 1971-84 but insufficiently to prevent a fall in the share of overall national a.p.s. employment accounted for by these twenty regions from 76.1% to 73.54%. This was largely due to the decline in share of the metropolitan regions at the top of the hierarchy which was mirrored by the fall in share of regional a.p.s. employment for the same regions. The rate of growth of a.p.s. employment differed significantly between regions. Although no obvious trend exists between rate of growth and size of metropolitan region it appears that where there is more than one metropolitan region in a planning region the metropolitan region at the top of the planning region hierarchy is likely to be growing less fast than the others. For example, Birmingham has a slower growth rate than Coventry, Leeds has a slower growth rate than Sheffield, and Glasgow has a slower growth rate than Edinburgh. This also holds true for London and the South East and the Northern region but not for Wales or the North West.

From Figure 5.2 it is apparent that central place theory is more robust for the metropolitan regions than was the case for the planning regions. London is again clearly identifiable as the dominant centre at the top of the hierarchy and, as predicted by the Christaller model, the second tier is composed of two centres, Birmingham and Manchester. Moreover, if the third and fourth tiers of Figure 5.2 were combined this would create a new tier of six centres as also predicted by the model. This is, however, somewhat of an ad hoc arrangement. That central place theory should be more applicable to the metropolitan than the planning regions is not particularly surprising as it is based on the system of cities. In contrast, information diffusion theory appears potentially less applicable to the metropolitan regions than it was for the planning regions. The position of London at the top of the hierarchy would indeed be expected but the diffusion of information regarding advanced producer services and consequently their locational pattern would lead us to expect that centres nearest London would also be near the top of the hierarchy. This is not the case. A possible explanation for this is, however, that the pattern of adoption of such activities is not in fact spatially random. That is, some metropolitan regions are better placed in informational terms than others. As most of the centres at the top of the hierarchy shown in Figure 5.2 are large urban areas this suggests that a meshing of information networks takes place in these centres enabling them to make better use of information than is the case for smaller areas and consequently the former are more able to attract information-intensive activities of the advanced producer service type.

With respect to the applicability of the cumulative causation or neo-classical growth model to advanced producer service activity the evidence is unclear. The metropolitan regions share of total a.p.s. employment fell from 76.1% in 1971 to 73.54% in 1984, principally due to the fall in share of London, but they increased their employment in advanced producer services over this period by 660,000 jobs. In absolute terms the metropolitan regions having the highest level of advanced producer service employment in 1971 continued to do so in 1984 (Table 5.6) despite their comparatively low rate of growth

of such employment. This suggests that the prediction of the cumulative causation model that areas most specialized in an activity will continue to be so may hold but the evidence is by no means conclusive.

The appearance of large population centres at the top of the metropolitan region hierarchy (Figure 5.2) again raises the question of whether the level of provision of advanced producer services may be population related. This was examined at planning region level in section 4.5 which found that it was unlikely that such services are population related. In the light of the hierarchy derived in this section, however, this possibility requires further examination. The following section therefore carries out a similar analysis to that undertaken in section 4.5, this time for the metropolitan regions.

Figure 5.2 Metropolitan Region Hierarchy, employment, in a.p.s., 1984

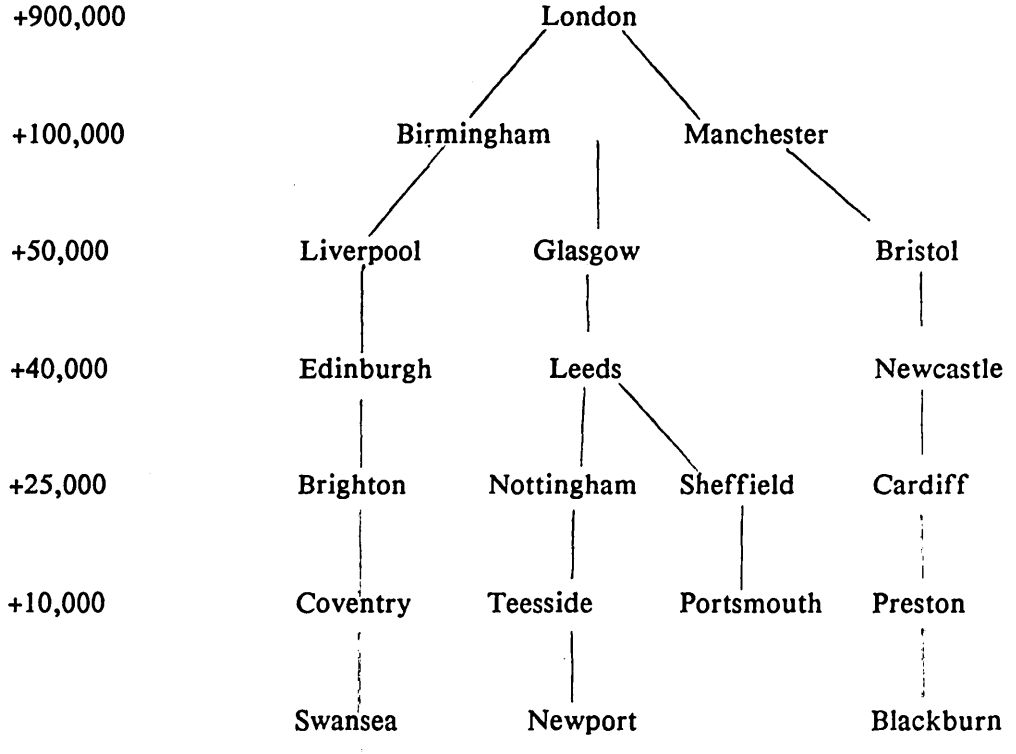


Table 5.5 Metropolitan Region's Share of National and Regional a.p.s. Employment 1971-84

Metropolitan Region	% of national a.p.s. employment		Change	% of regional a.p.s. employment		Change
	1971	1984	1971-84	1971	1984	1971-84
London	44.40	41.77	-2.63	87.3	84.2	-3.1
Manchester	5.11	4.62	-0.49	49.3	49.6	+0.3
Birmingham	4.61	4.67	+0.06	65.5	62.0	-3.5
Liverpool	3.64	3.05	-0.59	35.1	32.7	-2.4
Glasgow	3.13	2.79	-0.34	40.5	38.1	-2.4
Bristol	1.83	2.18	+0.35	30.2	30.5	+0.3
Edinburgh	1.97	1.91	-0.06	25.4	26.1	+0.7
Leeds	1.71	1.78	+0.07	30.6	31.5	+0.9
Newcastle	1.67	1.77	+0.10	53.2	50.4	-2.8
Brighton	1.19	1.39	+0.20	2.3	2.8	+0.5
Nottingham	1.15	1.31	+0.16	29.6	32.1	+2.5
Sheffield	1.07	1.19	+0.12	19.2	21.0	+1.8
Cardiff	1.18	1.14	-0.04	41.2	42.9	+1.7
Portsmouth	0.68	0.77	+0.09	1.3	1.6	+0.3
Coventry	0.78	0.97	+0.19	11.1	12.8	+1.7
Teesside	0.59	0.80	+0.21	19.0	22.8	+3.8
Preston	0.41	0.54	+0.13	3.9	5.8	+1.9
Swansea	0.44	0.35	-0.09	15.3	13.0	-2.3
Newport	0.28	0.32	+0.04	9.8	12.0	+2.2
Blackburn	0.26	0.22	-0.04	2.5	2.3	-0.2
All	**76.10**	**73.54**	**-2.56**			

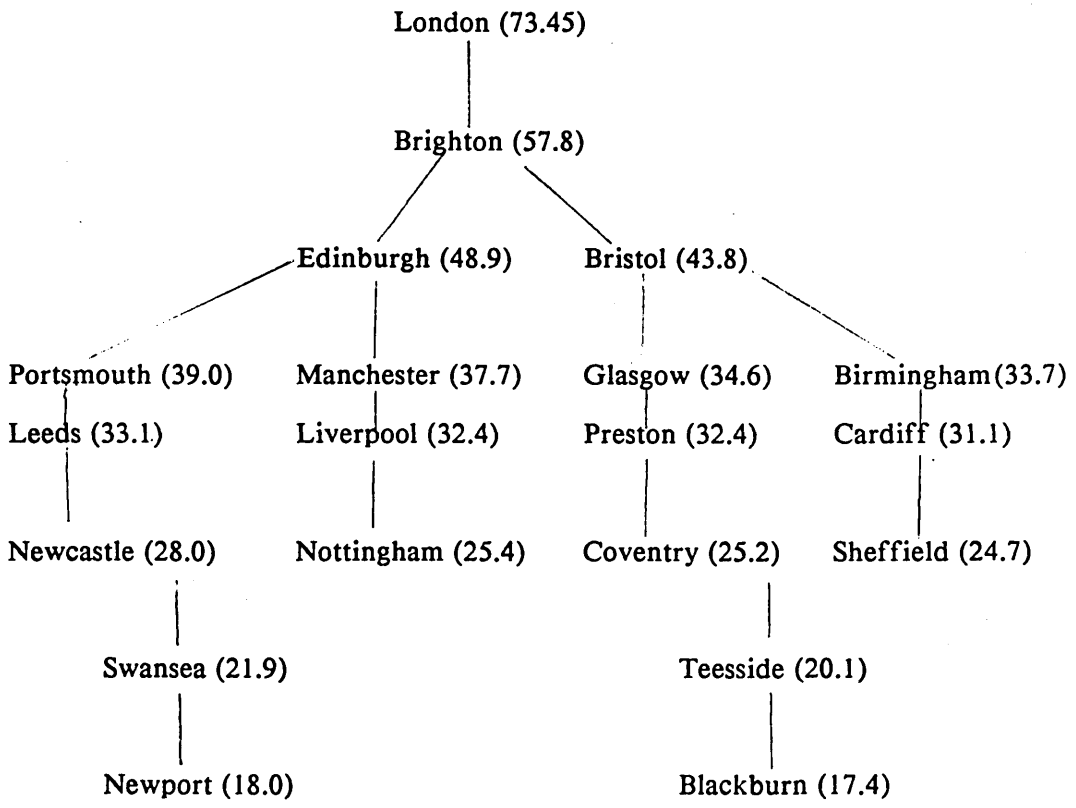
Table 5.6 Changes in a.p.s. employment in the metropolitan regions 1971-84 (thousands)

Metropolitan Region	A.p.s. employment		Absolute change	% change
	1971	1984	1971-84	1971-84
London	762	992	230	30.2
Manchester	88	110	22	25.0
Birmingham	79	111	32	40.5
Liverpool	62	72	10	16.1
Glasgow	54	66	12	22.2
Edinburgh	34	45	11	32.4
Bristol	31	52	21	67.7
Leeds	29	42	13	44.8
Newcastle	29	42	13	44.8
Brighton	20	33	13	65.0
Cardiff	20	27	7	35.0
Nottingham	20	31	11	55.0
Sheffield	18	28	10	55.6
Coventry	13	23	10	76.9
Portsmouth	12	18	6	50.0
Teesside	10	19	9	90.0
Swansea	8	8	0	0.0
Preston	7	13	6	85.7
Blackburn	4	5	1	25.0
Newport	5	6	1	20.0
Great Britain	1,716	2,376	660	38.5

Table 5.7 A.p.s. employment per thousand population for the metropolitan regions 1971-81

Metropolitan Region	A.p.s. per thousand population		Difference
	1971	1981	1971-81
London	59.4	73.45	14.05
Manchester	28.6	37.7	9.1
Birmingham	26.2	33.7	7.5
Liverpool	26.3	32.4	6.1
Glasgow	25.9	34.6	8.7
Edinburgh	38.65	48.9	10.25
Bristol	30.7	43.8	13.1
Leeds	23.8	33.1	9.3
Newcastle	20.1	28.0	7.9
Brighton	37.6	57.8	20.2
Cardiff	24.3	31.1	6.8
Nottingham	18.4	25.4	7.0
Sheffield	16.2	24.7	8.5
Coventry	17.7	25.2	7.5
Portsmouth	21.85	39.0	17.15
Teesside	13.5	20.1	6.6
Swansea	17.4	21.9	4.5
Preston	21.8	32.4	10.6
Blackburn	16.05	17.35	1.3
Newport	13.6	18.0	4.4

Figure 5.3 Metropolitan Region Hierarchy, a.p.s. per thousand population, 1981



5.3.2 Advanced producer service employment per thousand population for the metropolitan regions 1971-1984

In some ways the calculation of a.p.s. per thousand figures for the metropolitan regions gives a better indication of relative a.p.s. activity than those figures presented in Tables 5.5 and 5.6. As Table 5.7 and Figure 5.3 show, the use of a.p.s. per thousand figures alters the structure of the metropolitan region hierarchy. (Again 1971 and 1981 are used as they are the only years for which population figures are available from the Census of Population). Although London still dominates the hierarchy the other large population centres do not perform as well using this measure. Indeed, Brighton one of the smaller metropolitan regions becomes the sole second tier city while Birmingham and Manchester for example now lie in the fourth tier alongside cities such as Portsmouth and Leeds.

From table 5.7 it is apparent that the South-Eastern and South-Western metropolitan regions have shown the largest increase in a.p.s. per thousand but there is no other clear cut regional pattern. The difference between the largest and the smallest a.p.s. provision in each year rose from 45.9 in 1971 to 56.1 in 1981 even though all the metropolitan regions have increased their representation of a.p.s. per thousand population. The differential amounts by which they have done so accounts for this rise. Thus the evidence for the metropolitan regions provides additional support for the finding of section 4.5 that a.p.s. are not population related.

The hierarchy of Figure 5.3 does not conform to that predicted by central place theory but it does provide some support for information diffusion theory in that the metropolitan regions closest to London tend to lie on higher levels of the hierarchy than was the case for Figure 5.2. In particular, as already mentioned, Brighton now forms the second tier of the hierarchy while Portsmouth has also improved its relative position in the hierarchy. The presence of Edinburgh in the third tier again suggests, however, that a simple pattern in which the level of a.p.s. activity decreases with distance from London is inappropriate. The other striking feature of the hierarchy, the movement of Birmingham and

Manchester from second and third to eighth and sixth place respectively, is further evidence against the hypothesis that advanced producer services are population related. If they were, these two large population centres would still be expected to lie on the upper levels of the hierarchy. Although differences in the propensity to consume such services could be put forward as a reason for the differing figures between metropolitan regions the disparities are so wide that this is a very unsatisfactory explanation, especially as there are quite significant differences between cities within the same planning region, for example, Birmingham and Coventry or Leeds and Sheffield.

Given this additional evidence that advanced producer services are unequally distributed spatially but not as a result of differing population levels it appears even more likely that a trade between regions, in this case the metropolitan regions, will exist in such services. This bring us back to export base theory. The next section therefore calculates location quotients for the metropolitan regions both for total a.p.s. and individual industries in 1971 and 1984, paralleling the analysis of section 5.2.2.

5.3.3 Metropolitan region location quotients 1971-1984

Location quotients like the levels of a.p.s. per thousand population examined in the previous section adjust for size but this time for the region's employment relative to other regions rather than population. A value greater than one indicates the relative specialization (over-concentration) of a.p.s. in the metropolitan region.

Table 5.8 shows the location quotients for each metropolitan region in 1971 and 1984 together with the change in the location quotient over the period for the advanced producer services group as a whole. London not surprisingly has the highest location quotient for both years. Brighton and Edinburgh were also over-represented in both years and Bristol increased its location quotient to just over one in 1984. In general terms, thirteen of the

twenty metropolitan regions raised their location quotient over the period. The greatest increase in the location quotient was for Teesside (+0.225) followed by Coventry (0.188) while the greatest decrease was for Edinburgh (-0.098).

Tables 5.9 and 5.10 show the highest and lowest location quotients for each a.p.s. industry together with a list of the metropolitan regions over-represented in these services for 1971 and 1984 respectively. Apart from London which is over-represented in eleven services in both 1971 and 1984, Brighton in eight and nine and Edinburgh in nine and six a.p.s. groups respectively, the metropolitan regions show a severe degree of under-representation in many a.p.s. industries. This is partly the effect of the dominance of London in most groups. The highest location quotient figure fell for seven groups between 1971 and 1984 the exceptions being postal services and telecommunications, insurance, banking and bill discounting and other financial services, while the lowest figures rose for seven groups and remained constant for two, the only falls being in insurance and other business services. Changes have also occurred among the over-represented metropolitan regions for the industry groups. For postal services and telecommunications Edinburgh, Portsmouth and Liverpool which were over-represented in 1971 ceased to be so in 1984 and were replaced by Preston. For insurance, Bristol replaced Manchester in being over-represented while Liverpool became so for banking and bill discounting. Bristol, Coventry, Leeds and Birmingham became over-represented in other financial services while Edinburgh ceased to bo so. Newcastle and Edinburgh joined the three metropolitan regions already over-represented in property owning and managing while Birmingham, Manchester and Liverpool joined London in being over-represented in advertising and market research.

Table 5.8 Location quotients for the metropolitan regions, total a.p.s. 1971 and 1984

	Location Quotients		
Metropolitan Region	1971	1984	Change
London	1.668	1.576	-0.092
Manchester	0.872	0.865	-0.007
Birmingham	0.745	0.842	+0.097
Liverpool	0.850	0.849	-0.001
Glasgow	0.827	0.864	+0.037
Edinburgh	1.211	1.113	-0.098
Bristol	0.963	1.097	+0.134
Leeds	0.736	0.788	+0.052
Newcastle	0.655	0.749	+0.094
Brighton	1.431	1.421	-0.010
Cardiff	0.737	0.811	+0.074
Nottingham	0.575	0.635	+0.060
Sheffield	0.522	0.647	+0.125
Coventry	0.508	0.696	+0.188
Portsmouth	0.824	0.852	+0.028
Teesside	0.448	0.673	+0.255
Swansea	0.584	0.568	-0.016
Preston	0.651	0.835	+0.184
Blackburn	0.539	0.494	-0.045
Newport	0.468	0.578	+0.110

Table 5.9 Industry Location quotients for the metropolitan regions, 1971

Industry group	Location Quotient Highest	Lowest	Metropolitan Regions with LQ>1
Postal services and Telecommunications	1.675	0.530	Brighton (1.675), London (1.433), Edinburgh (1.137), Bristol (1.085)
Insurance	1.678	0.355	London (1.678), Edinburgh (1.491), Brighton (1.45), Manchester (1.1)
Banking and bill discounting	1.699	0.458	London (1.699), Brighton (1.5), Edinburgh (1.135)
Other financial services	2.061	0.371	Brighton (2.061), London (1.768), Cardiff (1.150), Edinburgh (1.092)
Property owning and managing	2.540	0.273	Brighton (2.54), London (1.687), Liverpool (1.038)
Advertising and market research	2.684	0.0	London (2.684)
Other business services	2.170	0.230	London (2.17), Manchester (1.172), Bristol (1.117), Edinburgh (1.043), Birmingham (1.036)
Accountancy services	1.507	0.426	London (1.507), Edinburgh (1.148), Glasgow (1.086), Brighton (1.078)
Legal services	1.950	0.622	Edinburgh (1.95), Brighton (1.871), London (1.292), Portsmouth (1.226), Bristol (1.077)
Research and development	1.587	0.0	London (1.587), Edinburgh (1.230), Manchester (1.016)
Other professional and scientific services	1.832	0.216	London (1.832), Bristol (1.329) Brighton (1.319), Edinburgh (1.301), Glasgow (1.137)
All a.p.s.	1.668	0.448	London (1.668), Brighton (1.431), Edinburgh (1.211)

Table 5.10 Industry Location quotients for the metropolitan regions, 1984

Industry Group	Location Quotient Highest	Location Quotient Lowest	Metropolitan Regions with LQ>1
Postal services and Telecommunications	2.047	0.622	Brighton (2.047), London (1.441), Preston (1.116), Bristol (1.093)
Insurance	1.732	0.252	Bristol (1.732), London (1.556), Brighton (1.732), Edinburgh (1.366)
Banking and bill discounting	1.724	0.470	London (1.724), Edinburgh (1.285), Brighton (1.087), Liverpool (1.044)
Other financial services	3.780	0.603	Brighton (3.780), London (1.267), Bristol (1.202), Coventry (1.200), Leeds (1.131), Cardiff (1.059) Birmingham (1.013)
Property owning and managing	1.480	0.457	London (1.480) Liverpool (1.313), Brighton (1.276), Newcastle (1.138), Edinburgh (1.128)
Advertising and market research	2.333	0.000	London (2.333), Birmingham (1.122), Manchester (1.072), Liverpool (1.019)
Other business services	1.917	0.224	London (1.917), Birmingham (1.201), Portsmouth (1.194)
Accountancy services	1.470	0.566	London (1.470), Bristol (1.033), Brighton (1.024)
Legal services	1.694	0.463	Edinburgh (1.694), London (1.338), Brighton (1.251), Glasgow (1.073)

../...

Continued: Table 5.10

Industry Group	Location Quotient		Metropolitan Regions with LQ>1
	Highest	Lowest	
Research and development	1.483	0.000	London (1.483), Edinburgh (1.350), Brighton (1.068)
Other professional and scientific services	1.464	0.347	London (1.464), Teesside (1.489), Bristol (1.348), Glasgow (1.241), Edinburgh (1.178), Brighton (1.175), Cardiff (1.044), Newcastle (1.002)
All a.p.s.	1.576	0.494	London (1.576), Brighton (1.421), Edinburgh (1.113), Bristol (1.097)

Portsmouth replaced Manchester, Bristol and Edinburgh in being over-represented in other business services. Bristol replace Edinburgh and Glasgow for accountancy services. Glasgow became over-represented in legal services while Bristol and Portsmouth ceased to be so, Brighton became so at the expense of Manchester for research and development, and Teesside, Cardiff and Newcastle joined the metropolitan regions already over-represented in other professional and scientific services.

It is clear from Tables 5.8 to 5.10 that while aggregate advanced producer service activity is concentrated in relatively few regions at individual industry level there is a greater diversity in terms of the metropolitan regions which are over-represented in each case. In 1971, ten of the twenty metropolitan regions (50%) were over-represented in one or more industries - London (11), Edinburgh (9), Brighton (8), Bristol (4), Manchester and Glasgow (2 each) and Cardiff, Liverpool and Portsmouth (1 each). Advertising and market research proved to be the most concentrated in this year as London was the sole over-represented region. In comparison, other business services, legal services and other professional and scientific services were each over-represented in five metropolitan regions. By 1984 the position had changed. Fifteen (75%) of the metropolitan regions were now over-represented in at least one industry, the exceptions being Nottingham, Sheffield, Swansea, Newport and Blackburn. This increase in the number of over-represented metropolitan regions was the result of Preston becoming over-represented in postal services and telecommunications, Coventry and Leeds in other financial services, Newcastle in property owning and managing and other professional and scientific services and Teesside also in other professional and scientific services. For the ten regions which were already over-represented in 1971 the number of industries for which this was the case in 1984 was now as follows - London (11), Brighton (9), Edinburgh (6), Bristol (6), Birmingham (3), Liverpool and Cardiff (2 each), and Portsmouth, Glasgow and Manchester (1 each). An increase in the number of metropolitan regions with location quotients greater than one between 1971 and 1984 occurred for banking and bill discounting (+1), other financial services (+3), property owning and managing (+2), advertising and market research (+3), accountancy services (+1) and other

professional and scientific services (+3). This contrasts with the decrease in the number of over-represented regions for other business services (-2) and legal services (-1).

Overall, the fall in the highest and rise in the lowest location quotient figures for most of the advanced producer service industries taken together with the changes which have occurred with respect to the number of metropolitan regions being over-represented in individual a.p.s. industries suggests that a relative re-distribution of a.p.s. activity may be taking place within the metropolitan region group. Given that Table 5.5 showed that this group's share of national a.p.s. employment had in fact fallen over the period 1971 to 1984 it is not the case that metropolitan regions are becoming over-represented at the expense of the free-standing functional regions. In particular, the degree of over-representation of London appears to be declining. Even so, this region still exhibits high location quotient values for each industry and the advanced producer service group as a whole.

Returning to export base theory the findings of this section are significant. That some export activity would be taking place was expected from the results of section 5.2.2., the actual diversity of it in terms of the number of metropolitan regions engaged in exporting was not.

On the basis of those results the over-representation of the London metropolitan region would have been expected for all industries except research and development. That it is also over-represented in this industry reflects the fact that the London metropolitan region is, by definition, larger than the London planning region and hence incorporates some of the activity within the South East planning region. The concentration of a.p.s. in Brighton is also not surprising in the context of the planning region results but Portsmouth might have been expected to fare better than it actually did, only being over-represented in legal services in 1971 and other business services in 1984. Bristol as the sole metropolitan region in the South West was as might have been expected over-represented in postal services and telecommunications, legal services and research and development in 1971 but was also over-

represented in other business services rather than the expected property owning and managing. In 1984, Bristol was over-represented in postal services and telecommunications and accountancy services and under-represented in legal services contrary to expectations. As East Anglia contains no metropolitan regions no predictions can be made from the planning region results. The North West's over-representation in insurance in 1971 is accounted for by Manchester which was also over-represented in other business services and research and development. Scotland's over-representation in legal services in 1971 was accounted for by Edinburgh which, however, was also over-represented for eight other a.p.s. industries. Finally, Yorkshire and Humberside's over-representation in other financial services was reflected by a similar level of over-representation for Leeds in this activity.

It appears, therefore, that while the location quotient values for the planning regions provide some guidance towards what results might be expected for the metropolitan regions significant differences do occur. In addition, it is possible for planning regions which have low location quotient values to contain centres which are over-represented in certain types of a.p.s. activity. For example, in 1971 despite Wales and the West Midlands being under-represented in all the a.p.s. industries Cardiff was over-represented in other financial services and Birmingham in other business services. Similarly, in 1984, for the Northern region Newcastle was over-represented in property owning and managing and other professional and scientific services as was Teesside for the latter.

In summary, the location quotient figures presented in Tables 5.8 to 5.10, together with the results of section 5.2.2, provide strong evidence that a trade in advanced producer services exists. While in 1984 only London, Brighton, Edinburgh and Bristol had location quotients greater than one for the total a.p.s. group, fifteen of the twenty metropolitan regions were over-represented in terms of at least one industry. Moreover, several of these metropolitan regions were located in planning regions which have been shown (Table 5.4) to be under-represented in these activities. Thus by disaggregating the data we have uncovered

additional and more detailed evidence with respect to the applicability of export base theory to advanced producer services.

In section 3.2.1 it was argued that usage rather than necessity had confined the 'basic' sector to manufacturing activity only and that it was possible that advanced producer services could also be classified as basic. The results of this section support that view. Location quotient analysis assumes that a region will become self-sufficient in an activity before it begins to export it. This being the case, it is apparent from Tables 5.9 and 5.10 that a great deal of export activity is already taking place. If, however, self-sufficiency does not need to occur before exporting begins the actual level of trade in such services may be considerably higher. This possibility is examined in Chapter Six through a survey of firms in Leeds and Sheffield. Given the results of this section if self-sufficiency were a pre-requisite Leeds would only be expected to sell other financial services to clients outside the metropolitan region while Sheffield would not be expected to export any of these services at all.

In all then this section provides considerable support for the core hypothesis of this thesis that advanced producer services can be categorised as 'basic'.

5.3.4 The Intra-Metropolitan Distribution of Advanced Producer Services

Table 5.11 shows the percentage of each metropolitan region's total a.p.s. employment accounted for by its dominant functional region in 1971 and 1984. In 1971 the highest percentage figure occurred for Edinburgh (91.95%) and the lowest for Teesside (58.2%). In 1984 Edinburgh still had the highest figure but this had now risen to 92.9% while Teesside's had been further reduced to 56.2%. The average for 1971 was 77.8% compared to 73.6% in 1984. This fall may be accounted for by a tendency towards decentralization of activities from inner cities and/or the general run-down of employment in these areas. Only Edinburgh increased its percentage share of a.p.s. employment in the dominant functional region between 1971 and 1984. The largest fall was in Newport (10.8%) followed by

Manchester (8.2%) and Bristol (8.05%). Thus there appears to be a movement of a.p.s. activity away from the dominant functional regions regardless of size or level of a.p.s. activity.

This decentralization of a.p.s. activity from the dominant to the sub-dominant functional regions is in line with the 'suburbanization' of producer service activity found by Noyelle and Stanback (1984) for the U.S. Taken together with the slight shift of advanced producer services away from the metropolitan regions shown in Table 5.5 and the relative shift of such activity away from London shown earlier in this chapter this implies that an overall decentralization of a.p.s. activity is taking place within Great Britain.

Table 5.11 The intra-metropolitan region distribution of advanced producer services

Metropolitan Region	% of all a.p.s. employment in the Dominant Functional Region		% of a.p.s. employment in the Dominant Function Region
	1971	1984	Change 1971-84
London	83.8	78.8	-5.0
Manchester	68.8	60.6	-8.2
Birmingham	70.85	65.6	-5.25
Liverpool	67.6	60.2	-7.4
Glasgow	85.0	81.8	-3.2
Edinburgh	91.95	92.8	+0.85
Bristol	82.25	74.2	-8.05
Leeds	83.8	82.3	-1.5
Newcastle	77.0	76.8	-0.2
Brighton	75.8	74.8	-1.0
Cardiff	79.6	76.0	-3.6
Nottingham	83.4	79.3	-4.1
Sheffield	75.9	73.6	-2.3
Coventry	66.7	59.5	-7.2
Portsmouth	85.3	78.9	-6.4
Teesside	58.2	56.2	-2.0
Swansea	78.1	75.4	-2.7
Preston	87.9	84.45	-3.45
Blackburn	81.8	80.7	-1.1
Newport	71.6	60.8	-10.8
Average	77.8	73.6	-4.2

5.4 Conclusions

Turning first to the ability of central place and information diffusion theory to explain the pattern of advanced producer service locational behaviour the analysis of this chapter provides conflicting evidence. That there is significant spatial inequality in the provision of such services is undeniable but it does not readily conform to the predictions of either theory. A hierarchy does exist in terms of the level of a.p.s. employment in the planning regions (Figure 5.1) but it does not develop along the lines of central place theory as its top three tiers each consist of a single region. Information diffusion theory can be applied to the planning regions in so far as a decentralization of activity from London to the surrounding planning regions, implying a diffusion of information regarding these activities, is taking place over time but it does not explain why a relative shift in a.p.s. activity away from the peripheral to the central regions of Great Britain is also occurring although this may be a function of the increasing distance from the centre (London).

As expected, central place theory appears more robust in terms of the metropolitan regions. Again, London was clearly identifiable at the top of the hierarchy (Figure 5.2) but this time the second tier also conformed to the model by being composed of two regions. Below this level, however, the position is less clear. In contrast, information diffusion theory is more difficult to apply to the metropolitan regions as although London is the centre of a.p.s. activity it is not necessarily the metropolitan regions closest to the centre which have the next highest levels of a.p.s. employment as might have been expected. Possibly, although information may be more readily available near the centre not all regions have the same ability to make use of it. As most of the metropolitan regions at the top of the hierarchy (Figure 5.2) are large urban centres it may be that they have better information networks than the smaller metropolitan regions and so are more able to attract information-intensive activities such as advanced producer services. When, as in section 5.3.2, a hierarchy is constructed in terms of a.p.s. employment per thousand population (Figure 5.3) the relative positions in it of individual metropolitan regions change, however. In this case the

metropolitan regions closest to London move further up the hierarchy but the existence of more remote centres also in the upper tiers still makes a simple pattern in which the level of a.p.s. activity decreases with distance from London inappropriate.

In all, then, the locational characteristics of advanced producer services are not satisfactorily explained by either central place or information diffusion theory. Throughout, London is clearly identifiable as the dominant advanced producer service providing centre; hierarchies of both planning and metropolitan regions can be constructed but they do not conform to the central place theory model implying the existence of off-centred service providing places; and the explanatory power of information diffusion theory can only really be applied to the pattern of change of a.p.s. activity within southern England. The most important point to emerge from the analysis of the distribution of advanced producer service employment is, therefore, that a significant degree of spatial inequality in such activity exists.

This inequality shows, in absolute terms at least, a tendency to diminish over time. Although the rate of growth of a.p.s. employment in the London metropolitan region was slower than for Great Britain as a whole between 1971 and 1984 (Table 5.6) in absolute terms this region alone accounted for more than a third of the total increase in a.p.s. employment over the period. In relative terms the concentration of a.p.s. activity in the south of England has increased, the combined share of the four planning regions concerned (London, South East, South West and East Anglia) rising by 0.53% between 1971 and 1984 although this hides a redistribution of employment share from London to the other three planning regions. Thus, in aggregate, the regions with the highest levels of a.p.s. activity in 1971 appear to have retained and increased their comparative advantage over regions whose advanced producer service sectors are less developed. This is in line with the predictions of the cumulative causation model.

As discussed in section 5.1 this inequality in the spatial distribution of advanced producer service activity has significant implications for the likely trading patterns of

establishments within this sector. It would be expected that an inter-regional trade in advanced producer services would exist as firms in regions with weak advanced producer service sectors would need to purchase such services from outside the region. In the light of the results of the locational analysis London would be expected to be a significant exporter of these services. This was indeed found to be the case in sections 5.2.2. and 5.3.3.

At planning region level London had a location quotient greater than one for ten a.p.s. industries, the exception being research and development, and consequently for the a.p.s. group as a whole. At metropolitan region level London was over-represented for all the a.p.s. industries. Given that the location quotient method implies a region will become self-sufficient in an activity before it begins to export it this means that London is a significant nett exporter of a.p.s. to other regions. This is illustrated further by the very low location quotients which occur for other regions.

The concentration of a.p.s. activity in the south of England generally is reflected by the planning region location quotients. Only the South East is over-represented alongside London with respect to total a.p.s. and in the case of individual industries only twice in 1971 and three times in 1984 is a region outside of the south of England over-represented. In addition, the more specialized is the service the more likely it is to be concentrated in relatively few regions.

Similarly at metropolitan region level three of the four regions with location quotients greater than one for total a.p.s. (London, Brighton and Bristol) are in southern England with the fourth, Edinburgh, being in Scotland. At industry level, however, there is a greater diversity with ten and fifteen of the twenty metropolitan regions being over-represented in at least one industry in 1971 and 1984 respectively. This indicates a much higher level of export activity than would have been expected on the basis of the planning region results.

It is clear from the analysis of this chapter, therefore, that a trade in advanced producer services does exist. Such services are not merely traded locally but also inter-regionally providing support for the hypothesis that they are part of the basic sector and hence can contribute to the generation of regional income. The evidence is not yet, however, complete. The location quotient analysis of this chapter while indicating that export activity is taking place gives no indication of the destination of these exports and its assumption of self-sufficiency prior to exporting needs to be examined. The disaggregation of the data from planning to metropolitan region level revealed unexpected pockets of export activity, it may be that the level of such activity is still being under-estimated. With this in mind, Chapter Six carries out a more in depth analysis through a survey of advanced producer service firms in Leeds and Sheffield. On the basis of the findings outlined above, only Leeds should sell any advanced producer services at all beyond its city boundaries and even then only export other financial services. To see if this is the case, the location of the clients of a.p.s. firms in the two cities will be explored.

CHAPTER SIX

ADVANCED PRODUCER SERVICE FIRMS IN LEEDS AND SHEFFIELD: A SURVEY

6.1 Introduction

The empirical evidence presented in Chapters Four and Five provides a background for the more detailed analysis of the behaviour of advanced producer service providing firms which will be carried out in this chapter. It was established in Chapter Four that advanced producer service employment has been growing rapidly at national level during the post-war period but that such employment is not population related. In addition, the regression analysis of section 4.6 suggests that a positive relationship between the level of advanced producer service employment and regional G.D.P. may exist.

Chapter Five by disaggregating the national figures revealed the presence of significant spatial inequalities in the distribution of advanced producer service employment which in turn raised the question of whether an inter-regional trade in such services might exist. On the evidence of the location quotient analysis of sections 5.2.2. and 5.3.3. such a trade does in fact take place. Only limited information about the nature of this trade could be gained, however. It appears that London and the South East are the major exporters of advanced producer services while, in general, other regions tend to be under-represented in, that is importers of, most of these services.

This finding tells us relatively little about actual trading patterns. The implicit assumption of the location quotient analysis that a region becomes self-sufficient in an activity before it begins to export it needs to be examined. From Chapter Five it was apparent that although a planning region might be under-represented in an industry a metropolitan region within it might be over-represented. For example, in 1984 the Northern region was under-represented in all the a.p.s. industry groups and yet its two metropolitan

regions, Newcastle and Teesside, were both over-represented in other professional and scientific services as was the former for property owning and managing. If the self-sufficiency argument were to hold, therefore, the exports of these services from the metropolitan region must wholly be to other areas within the planning region. This is in line with the prediction of central place theory that such services will only be sold in the city's hinterland but we also found in Chapter Five that the central place model does not hold for these services. Further evidence is needed. With this in mind, the survey results analysed in this chapter specifically consider the nature and location of the clients of respondent firms in an attempt to gain a further insight into the trading behaviour of the advanced producer service sector and, consequently, to gauge the applicability of export base theory to this group. This is the main purpose of the survey although the structure of the firm, its locational decision making and its own use of advanced producer services are also examined.

6.2 The Expected Behaviour of Advanced Producer Services

6.2.1 The Literature

Most of the papers reviewed in Chapter One use a wide definition of producer services while this thesis considers only the advanced producer service group. There is no prima facie reason, however, to believe that the results of these studies will differ significantly from the results of our survey in the areas in which they overlap. What then does the literature predict regarding advanced producer services?

Firstly, turning to the corporate structure of (advanced) producer service firms and industries it is apparent that there is a large measure of agreement, irrespective of country, in this area. A distinction can be made between indigenous and non-indigenous firms within a region. The former group is comprised of independent firms and companies headquartered in the region while the latter is comprised of offices head-quartered outside of the region. In the U.K., non-indigenous firms were found (Marshall, 1979, 1982b, 1983; Daniels 1983b) to favour a hierarchical corporate structure based on London. In general, producer service

firms tend to be small and relatively newly established (Marshall, 1983; Beyers and Alvine, 1985; Ley and Hutton, 1987) although in the non-indigenous sector a number of companies with large national and even multinational networks were found to exist. To some extent this indicates a dichotomy of service provision with large firms on the one hand and small, often independent, firms on the other. It may be that firms are operating in different markets, for example, the smaller firms creating specialized niches for themselves in areas neglected by larger firms. Alternatively, Marshall (1983) suggests that small firms serve a more localized market. Non-indigenous firms, especially in the banking, financial services and insurance industries, are likely (Daniels, 1983b) to refer business back to their head offices from branch offices resulting in a leakage of service demand.

These supply side findings are complemented by demand side studies which examine the corporate structure and purchasing behaviour of users of producer services. Most of these demand side studies share a potentially serious shortcoming, however, as a result of their underlying assumption that manufacturing industry is the sole, or at best the overwhelmingly dominant, purchaser of producer services. That this is in fact the case is open to question. While in historical terms there may be grounds for this belief in that the development of parts of the producer service sector is the result of the internalization/externalization trade-off (see Chapter Two) it may no longer be the case. In the light of the decline of the manufacturing sector in the U.K. at least over recent years it is unlikely that growth in demand from manufacturing industry alone could account for the rapid expansion which has taken place in the advanced producer service sector. Indeed, Marshall (1983) found evidence that some producer service firms have service sector clients. In addition, Ley and Hutton (1987) found that most of the clients of the producer service firms they surveyed were in fact in the service sector. They note, however, that this may be a 'special case' as Vancouver, and on a wider scale British Columbia, has traditionally had a small manufacturing sector being largely dependent upon the extractive industries. Even so, this is obviously an area which requires further investigation.

Polese (1982) found the use of producer services to be a positive function of size, that is, the larger the firm the greater will be its service needs. How this demand for services will be met depends upon the structure of the firm and the type of service involved. The most frequently used and easiest to produce services will tend to be internalized while more specialized service requirements will be purchased from outside firms (Marshall, 1979; Daniels, 1987; Pederson, 1986). Further, small and independent firms tend to both buy and produce fewer services than large externally owned ones and export-orientated firms also tend to use more services and obtain them from a wider area than those with a more localized trade (Pederson, 1986). Purchases of producer services still appear relatively localized, however, as Marshall (1982a) estimates that over three-quarters of producer service purchases made by manufacturing firms were made within the economic planning region in which they were located although there is a tendency (Marshall 1979, 1982b) for externally controlled firms to refer such purchase decisions back to their head office outside of the region.

While these demand side studies are of interest in that they tell us more about the way decisions to purchase producer services are made this approach is somewhat unsatisfactory. As already indicated above there is the problem of determining in advance who the purchasers of (advanced) producer services are likely to be. Some of the demand side case studies restrict their investigations to specific industries, for example Cuadrado (1986) in the case of the five main manufacturing industries in Valencia, most restrict their analysis to manufacturing industries and the very few which do not, for example Daniels (1987), potentially underplay the role of service industries by selecting a small number of service firms on an ad hoc basis. Given this problem, a supply side approach is likely to be more effective. Until we know on the basis of sound empirical evidence who the clients of advanced producer service firms are likely to be any demand side study is likely to be partial. The survey undertaken in this chapter is, therefore, supply-side based. This allows us to challenge or corroborate previous findings with regard to the corporate structure of the (advanced) producer service sector and to assess whether or not manufacturing industry is the dominant purchaser of these services. Moreover, in the light of the spatial inequalities

in producer service provision apparent from the literature this approach will enable us to examine the locational decision making processes of advanced producer service firms. The only major conclusion the literature came to in this respect was that firm creation accounted for a high proportion of new employment in this sector. Little is known about why such firms establish themselves or re-locate in certain areas but this is important if spatial inequality in the provision of advanced producer services is to be redressed. Finally, a supply-side approach allows us to gauge the extent of the market for advanced producer services. It has long been assumed that all services have a highly localized market for their product. The limited evidence available from the literature indicates, however, that this might not always be the case. Marshall (1982a, 1983) and Daniels (1984, 1987) found some evidence that non-local sales were being made with the more specialized services, such as computer services, drawing more of their clients from outside of their immediate vicinity. Indeed a few firms (Daniels, 1984, Pederson, 1986) were found to have clients overseas. This has been borne out by more recent studies (Beyers and Alvine, 1985; Ley and Hutton, 1987; van Dinteren, 1987).

6.2.2 The Theories

Export base theory was examined in depth in section 3.2.1 where it was argued that usage rather than necessity had led to the basic sector of a region being equated with it's manufacturing sector. Further, it was also argued that advanced producer services as intermediate inputs into the manufacturing production process make a contribution to exports of finished goods in the same way as do physical component suppliers. This being the case, if all manufacturing industry is treated as basic, why should the advanced producer service sector be classified as non-basic? As advanced producer services are aimed primarily at the corporate market they can be used to challenge the assumption that all services are necessarily non-basic industries. The core hypothesis of this thesis is, therefore, that advanced producer services are in fact part of the basic sector. The limited evidence available from the literature (see above) indeed suggests that (advanced) producer services do not have a wholly

local market. This is tested explicitly in the survey carried out in this chapter. The degree of export activity, if any, taking place may vary between firms and industries depending upon their degree of specialization but even its existence is significant in this context. We will return to this when considering the implications of the empirical work of Chapters Four and Five for the survey in the next section.

In general, the other theories examined in Chapter Three have little in the way of direct implications for the survey. One important point does, however, emerge. The degree to which centres of a.p.s. activity conform to the central place model may, for example, influence their trading behaviour. As the survey covers Leeds and Sheffield, the two metropolitan regions in Yorkshire and Humberside, the model would lead us to expect that one of these centres would be dominant in terms of advanced producer service provision. That is, the dominant metropolitan region would be expected to provide the widest range of advanced producer services and to sell the more specialized services to the other metropolitan region, no such trade would be expected to flow in the other direction. This is the result of the stipulation of central place theory that a centre higher up the urban hierarchy provides all the same services as the centre(s) below it plus more specialized services. If, therefore, Leeds were to be the dominant metropolitan region it would be expected to sell some services to clients in Sheffield but Sheffield based a.p.s. firms would not be expected to sell to clients in Leeds. In addition, firms in Leeds would be expected to have a geographically wider spread of clients than firms in Sheffield. This is examined in section 6.4.2.

6.2.3 The Empirical Results

The evidence of sections 4.5 and 5.3.2 indicates that advanced producer services, as expected, are not population related and so may behave 'differently' from other services. Although some of the survey respondents may have individuals as clients, therefore, we would expect corporate clients to be in the majority in most cases. Exceptions to this may

occur, however, for industries such as banking which include a mixed consumer/producer element.

The empirical work also provides a background for the survey. Table 5.2 shows that between 1971 and 1984 Yorkshire and Humberside's advanced producer service employment grew by just over the national average rate, by 39.93% compared to 38.4%, and consequently the region increased it's share of Great Britain's a.p.s. employment from 5.59% to 5.65%. Of this employment around half was to be found in the two metropolitan regions, Leeds (1971, 30.6%; 1984, 31.5%) and Sheffield (1971, 19.2%; 1984, 21.0%). Both Leeds and Sheffield also experienced a rate of growth in a.p.s. employment over this period which was greater than the national average, 44.8% and 55.6% respectively. Thus the two metropolitan regions also increased their share of national a.p.s. employment, the figure for Leeds rising from 1.71% to 1.78% and for Sheffield from 1.07% to 1.19%. It appears, therefore, that despite the existence of a relatively under-developed a.p.s. sector the planning and metropolitan regions are experiencing a quite rapid expansion of a.p.s. activity. In one sense, with an a.p.s. employment growth rate which is closest to the national average (see Table 5.2), Yorkshire and Humberside is a 'typical' region, but it is not so in other respects, for example it lies seventh in the regional hierarchy (Figure 5.1). The choice of the examination of a.p.s. activity in Leeds and Sheffield through the survey is appropriate as it gives an indication of the behaviour/structure of a.p.s. firms at city level and to a lesser extent planning region level given that the two cities combined account for around a half of Yorkshire and Humberside's a.p.s. employment. In addition, it makes it possible to compare the two cities which despite approximately equal population sizes have very different levels of a.p.s. employment. This may provide important insights into the reasons why some places are better represented with respect to advanced producer services than others.

Besides providing a background in terms of the size and growth rate of the advanced producer service sectors in Leeds and Sheffield, Chapter Five provides more information regarding the characteristics of this sector in terms of location and export potential. Section

5.2.3 indicates that Leeds lies at the top of the hierarchy of a.p.s. producing places within Yorkshire and Humberside with Sheffield forming the next layer of the hierarchy. In terms of the analysis of section 6.2.2, firms in Leeds should sell advanced producer services to clients in Sheffield but not vice versa. However, throughout Chapter Five central place theory is found to be of limited value in explaining the locational characteristics of these services. It may be, therefore, that a trade from Sheffield to Leeds exists contrary to the predictions of this theory. Information diffusion theory would appear to add little to the argument in this case.

The measurement of export activity through location quotients (sections 5.2.2 and 5.3.3) does, however, have significant implications for the survey. There can be no doubt from this that export activity is taking place or that using this measure such activity is heavily skewed towards London and the South East. Moreover, the incidence of export activity with respect to the region covered by the survey is extremely low. Only in 1984 did Yorkshire and Humberside have a location quotient value greater than one for any advanced producer service industry, a value of 1.197 for other financial services. Leeds was correspondingly over-represented in this activity (LQ = 1.131) while Sheffield was never over-represented at all. This implies that our survey will reveal little evidence of export activity beyond the city boundaries except in the case of Leeds for other financial services. This is the result of the underlying assumption of location quotient analysis that a region will become self-sufficient in an activity before it begins to export it. The findings of the survey will determine whether this is in fact the case. If not, a much wider range of export activity may be taking place.

6.2.4 Summary

It is apparent from the literature, therefore, that the corporate structure of a firm may influence its activities. For example, branch offices of large national companies would be expected to have a relatively localized market due to the multiplicity of outlets for their

products. Such a case would not be expected to be the norm, however, as the studies reviewed in Chapter One also indicate that most firms in the (advanced) producer service sector are small and relatively newly established. This brings us to the first point of investigation for the survey - do advanced producer service firms in Leeds and Sheffield conform to predicted patterns of corporate structure and/or are there differences between the two cities which may help to explain why Leeds has a stronger a.p.s. sector than Sheffield, at least in employment terms? This is examined through section B of the questionnaire (see Appendix B) while section C looks at the locational characteristics of such firms in order to assess the influences on locational decision making, an area where more information is needed, especially in terms of the regional policy implications of the uneven spatial distribution of a.p.s. which will be discussed in Chapter Seven.

The next important question to arise is as follows - given that advanced producer services are aimed at the corporate market is it the case, as has largely been assumed, that manufacturing industry is the principal, and possibly the only, source of demand for these services? In historical terms this might not be an unreasonable assumption to make as the rapid expansion of advanced producer services in Great Britain began at a time when manufacturing industry was itself expanding and prosperous. That this assumption cannot, however, be treated as a general case is shown by Ley and Hutton (1987) for Vancouver in Canada and its hinterland. Although as they argue this may be a special case in that British Columbia has never developed a strong manufacturing sector and consequently is dependent upon the extractive industries it does give us grounds to question the assumption of manufacturing client dominance. This is given additional impetus by Marshall (1983) who found evidence that some producer service firms had service sector clients although they were in a small minority in most cases. Since the time of Marshall's study manufacturing employment in Great Britain has fallen rapidly and although part of this fall may be accounted for by improved productivity much of it is the result of firm closures. In the light of this it is unlikely that manufacturing industry alone could account for the rise in demand for advanced producer services as witnessed by the expansion of employment in this

sector despite the increasing sophistication of production and the consequent need for services of this type. Given that primary sector activity appears to have remained fairly constant over recent years it is likely that the service sector itself has increased its purchases of advanced producer services perhaps coupled with increased externalization of and/or demand for these services from manufacturing industry. It may even be the case that advanced producer service firms use a.p.s. themselves creating a 'pyramid selling' effect increasing the complexity of the relationship between firms in this and the other sectors.

This brings us on to the question of the geographical market for advanced producer service firms, that is, their trading behaviour. Throughout the literature much emphasis is placed upon the proposition that purchases of (advanced) producer services will tend to be made locally with the possible exception of very specialized services. This idea is strongest in the demand side literature and yet there is evidence from some of the supply side studies, for example Pederson (1986), that this is not necessarily the case. In the light of this, further investigation is needed which is also required in terms of the theoretical analysis of Chapter Three. From the theories reviewed there we derived the hypothesis that advanced producer services should be included in the basic rather than the non-basic sector of the local economy. That is, they form part of the export base. In order to examine this hypothesis it is obviously necessary to investigate the trading patterns of firms providing these services - another justification for our supply side approach. The location quotient analysis of Chapter Five indicates that the only export activity which should be taking place in the context of the survey is for other financial services in the case of Leeds. As already argued, however, this approach assumes self-sufficiency in an activity to be a pre-requisite for the exporting of it to occur. This may not be the case so that the level of export activity is under-estimated as a result of using this approach. The survey carried out in this chapter will enable us to gain first-hand evidence of the actual level of export activity occurring with respect to the two cities. The existence of clients elsewhere in Yorkshire and Humberside would indicate that firms in the metropolitan regions are selling their services to their immediate hinterland while sales outside of the planning region or the country indicate contributions to regional

and national exports and income generation respectively. To complement this analysis the survey asks those advanced producer service firms which use these services themselves to indicate the region from which they purchase them. Purchases made outside of the city in which they are located would indicate that a non-local trade in such services exists. This time, however, it would be imports rather than exports of such services which were being measured. In all, therefore, the survey should provide us with important new evidence regarding the trading behaviour of advanced producer service firms which is central to the main argument of this thesis.

Another aspect of this trade is the relationship between Leeds and Sheffield. From central place theory it can be argued that if a hierarchy of a.p.s. providing centres exists then the centre furthest up the hierarchy will sell advanced producer services of the more specialized types to the other but that no trade in a.p.s. will occur in the opposite direction. From the empirical analysis of Chapter Five we found that a hierarchy of metropolitan regions did exist, although not precisely on the lines of the central place model, in which Leeds was placed above Sheffield. By implication, Leeds may sell advanced producer services to Sheffield but not vice versa. If this is not the case then it provides additional evidence to contradict the applicability of the central place theory model to these types of service enabling us to differentiate them still further from other services such as retailing.

In summary, therefore, there are four main questions to be covered by the survey. Firstly, do advanced producer service firms in Leeds and Sheffield conform to predicted patterns of corporate structure and/or are there differences between them which may help to explain the relative strengths of their a.p.s. sectors? Secondly, can any firm conclusions be drawn with respect to the locational characteristics and decision-making processes of firms in this sector? Thirdly, are advanced producer service firms really heavily dependent upon manufacturing industry in terms of demand for their products? Fourthly, do advanced producer service firms export their products and hence can they be categorized as basic within the context of the export base theory model?

6.3 The Survey

Details of the survey and the level of response to it are given in Appendix B. To reiterate, however, the survey achieved an overall response rate of 43.0% with the response for Sheffield of 44.7% being slightly higher than that for Leeds at 41.8%. The non-respondents survey indicated that multinational branches and head offices might be over-represented in the survey returns but as a higher proportion of the non-respondents who were telephoned refused to answer the question on type of office this difference may be subsumed within the 'refused to answer' category. It is probable, therefore, that the sample is reasonably unbiased.

Broadly speaking, the expectations and hypotheses relating to advanced producer services, as examined specifically in section 6.2 and elsewhere in the thesis, can be divided into three groups as follows: those dealing with the structure and growth of the a.p.s. sector; those related to the client profile and exporting behaviour (if any) of a.p.s. firms; and those which investigate a.p.s. usage by the a.p.s. firms themselves. These three issues will be considered separately in each of the next three sections and their findings summarized in section 6.3.4. For ease of reference tables are given in Appendix C.

6.3.1 The Structure of the Advanced Producer Services Sector

The analysis of this section covers the first two questions posed at the end of section 6.2.4: a) do the advanced producer service firms surveyed conform to the predicted patterns of corporate structure? and b) what conclusions can be drawn with respect to the locational characteristics and decision-making processes of such firms? Differences in terms of structure between Leeds and Sheffield will be examined in section 6.4.1.

To re-iterate, very little is known with respect to b). As a result, they only expectation that can be formed is that firms in this sector will tend to be relatively newly established. With respect to a), assuming the structure of the advanced producer service sector to be at least similar, if not identical, to its wider producer service counterpart we would expect small companies to be in the majority while large national or even multinational companies would also operate in this sector. Moreover, those firms headquartered outside of the region would tend to be based in London resulting, given that offices in these companies would be expected to have relatively high numbers of employees, in a large proportion of a.p.s. employment being controlled from outside the region. This is potentially disadvantageous to the region as it can be argued that such external control may make offices more vulnerable to rationalization and/or closure than those headquartered in the region. Finally, given the empirical analysis of Chapter Five the firms surveyed would be expected to be increasing their employment, perhaps expanding their range of services and to be optimistic about the future. Differences between industries in all these particulars may, however, be apparent. This possibility is examined later in this section but we begin with a simple breakdown of responses to the questions relating to corporate structure.

Table C.1 shows the breakdown of respondents by office type. From this it appears that indigenous firms are in the majority, accounting for 59.3% of offices. With regard to decision making for non-indigenous firms 39 (61.9%) of the multinational and 49 (45.4%) of U.K. company branches were headquartered in London with the remainder having head offices elsewhere in the U.K., most frequently in the Greater South East, except for 7 (11.1%%) of the multinational branches which were based overseas (Table C2).

In order to examine the structural differences between indigenous and non-indigenous firms let us now look at the similarities and differences between them in terms of company size and employment. Table C3 summarizes the cross tabulation of office type by the number of offices in the firm, used as a proxy for company size. Single site firms are by definition excluded from this analysis but even so it is apparent that the indigenous sector

is comprised mainly of small companies. With one exception head offices located in the two cities were found to control relatively small numbers of offices while local company branches also overwhelmingly tended to be part of small firms. In contrast over a third of U.K. company branches and almost two-thirds of multinational branches indicated that their company had over fifty offices although a surprisingly high proportion, 17 (15.7%), of U.K. company branches were to be found in firms with less than five offices.

In terms of current employment levels a similar division is apparent (see Table C4). Non-indigenous offices tend to have higher numbers of employees than indigenous ones. For example, while the highest proportion of multinational branches have 11-20 employees local company branches and single site firms most frequently have ten or fewer employees. The case is less clear cut for head offices and U.K. company branches, however. In terms of growth in employment over the last two years little difference was apparent between types of office although multinational branches were slightly more likely to have reduced their employment than the other types of office. In general over half of the offices which responded had increased their employment over this period (Table C5).

We can conclude that although the indigenous a.p.s. sector appears relatively strong in terms of the number of firms the propensity of these to be small both in terms of number of offices and employees is a potentially serious disadvantage. A great deal of a.p.s. employment is controlled from outside the region and consequently the finding that multinational branches are most likely to have reduced their employment provides another indication of potential vulnerability in areas for which such firms are an important source of employment.

Following on from this the type of employment existing/being created in the a.p.s. sector may be of interest. The breakdown of employment into its male/female, full-time/part-time components at national level was examined briefly in section 4.4. and the results of the survey (Table C6) appear to reflect the patterns observed there. Male full-

time employment was again dominant followed by female full-time employment and female part-time employment while male part-time employment was comparatively rare. In terms of the managerial/specialist/clerical division of employment (Table C7) the most usual case appeared to be an office with a low proportion of managerial staff and a correspondingly higher proportion of clerical staff while specialist staff were confined to those offices which provided the relatively high level technical services. (Head offices, not surprisingly therefore, tended to have the highest numbers of specialist staff.) Generalization is, however, difficult as wide variations were found between firms even within the same industry group.

The past, present and expected future levels of employment in individual offices can be used as an indication of the sector's growth potential as indeed can expectations regarding turnover and type of service(s) to be provided (Table C5). Excluding firms which had been established within the past two years it appears that the larger the office in employment terms the more likely it was to have increased its number of employees over this period while the smallest size category, one to five employees, exhibited the highest level of employment stability (Table C8). As well as varying by office size and type (see above) changes in office employment also vary by industry. Of the respondents in each industry category 61.3% of those providing architectural services had increased their employment over the past two years compared to just 36% for personal banking. This is indicative of the overall trend as in general the professional/scientific services industries were more likely to have increased their employment than the other groups. Of the offices which had reduced their employment those providing banking, insurance and property related services appeared most frequently but numbers in this category were generally small regardless of type (Table C9).

Of the 408 firms which answered the question on turnover expectations 390 (95.6%) expected to increase their turnover in the next two years compared to just six who expected it to remain static and twelve who expected it to decrease (Table C5). A more diversified pattern emerged, however, with respect to the range of services to be provided in future.

Of the 396 respondents to this question, 222 (56.1%) expected to be providing the same services, 162 (40.9%) expected to diversify their range of services and only 12 (3%) expected to provide fewer services. Breaking down expected provision of services by industry group revealed that some 71.4% of research and development organisations expected to diversify their services, although the small number of firms in this group may exaggerate this figure compared to just 26.7% for consultant engineering. The proportion of firms intending to reduce their range of services is, however, consistently low across the industry groups (Table C10).

These variations in expectations between industry groups raise the point of whether there are structural differences between industries which may help to explain them. First of all, however, the point should be made that not all firms/offices confine themselves to providing one type of service. The 'average' respondent to the survey was found to provide two services but variations exist between industries. For example, while offices providing consultant engineering or architectural services tended to provide only that one service there was a degree of overlap between firms providing banking, financial services and insurance as there also was for those providing accountancy and management consultancy. This is, of course, apart from areas where an overlap would be expected such as corporate and personal services of the same type. Indeed in one extreme case a firm provided legal, insurance, financial and property dealing services.

In terms of firm profile for the industry groups (Table C11) single site firms accounted for more than half of the offices providing such services in ten cases - accountancy, advertising, architectural services, corporate and personal legal services, management consultancy, research and development, secretarial and office services, consultant engineering and other services. For the less specialized services such as banking, financial services, insurance and property dealing the split between type of office is more even but does differ according to type. Multinational and U.K. company branches evenly provide most of both types of banking services while for the other three there is a greater

or lesser split between multinational branches, U.K. company branches and single site firms. Local company branches and head offices, perhaps due to their small numbers in the survey, rarely feature significantly except for the former in legal and property services, research and development, and surveying and the latter, somewhat surprisingly, in secretarial and office services, but this may be due to the relatively small number of firms in this group.

From a cross-tabulation of industry group by number of offices in a company (Table C12) it appears that for many industries a gap exists between small and large firms with relatively few medium sized firms. For example, in the financial services industry some 37% were single-site firms and another 10.5% had less than five offices but 34% of firms had over fifty offices. Similar figures appear for the insurance group and, to a lesser extent, for accountancy, computer services, management consultancy and research and development. In contrast, firms in the advertising, architectural services, legal services, secretarial and office services and consultant engineering groups tend to be small. Those in banking are predominantly large and the spread between the number of offices categories is fairly even for the property and surveying groups.

Not surprisingly banking firms were most likely to be headquartered in London followed by insurance and financial services firms. Research and development and property dealing firms were most likely to be headquartered elsewhere in the U.K. while only firms in accountancy, banking, financial services, insurance, management consultancy and other services had their head office overseas. Overall, therefore, it appears that there are some quite significant differences between industries in terms of their corporate structure.

What then does the analysis tell us about the degree to which advanced producer services conform to our expectations regarding corporate structure as derived from the literature for the producer service group as a whole? As expected, a distinction can be made between the indigenous and the non-indigenous parts of the advanced producer service sector. Although the former is proportionately larger than the latter it is apparent that

indigenous firms tend to be small. Overall there appears to be a dichotomy in terms of the corporate structure of advanced producer service firms between small, indigenous and large non-indigenous firms. This is in line with the results of the U.K. studies of the producer service sector such as Marshall (1979, 1982b, 1983) and Daniels (1983b) as is the finding that non-indigenous firms tend to be headquartered in London (45.4%) or the Greater South East although there are exceptions to this pattern including the seven companies which had head offices overseas. Similarly, indigenous firms tend to be smaller than non-indigenous ones in terms of numbers employed per office with over three-quarters of single site firms having ten or fewer employees compared to just over a third of multinational branches.

Table C9 showed us that employment growth has, on balance, tended to be strongest in the professional/scientific services industries as again might have been expected given the national trends but that there are significant differences between industries. More importantly, Table C11 showed there to be differences in corporate structure according to industry with large, non-indigenous firms being particularly concentrated in the banking, financial services and insurance industries, all of which were most likely to be headquartered in London. Beyond this, however, disaggregation by industry proved inconclusive.

Having examined the corporate structure of the advanced producer service firms surveyed let us now move on to their locational characteristics. Of the respondents to the survey 197 (45.8%) had been at their present location for less than five years (Table C14). These firms were then asked to give the reasons for their location decision (Table C15). More than one in ten of the firms who responded to the survey were newly established which indicates quite a high rate of new firm formation for this sector. The figure for company expansion gives a further indication of growth in this sector while the three 'other' reasons given were amalgamation with another firm, a move towards regionalisation and locating near the office's parent company respectively. Those offices which had relocated were asked to give their previous location. Of the seventy-eight firms which did so fifty-seven were based in Leeds and twenty-one in Sheffield. Of the Leeds firms, thirty (52.6%) had moved to a

new location within the same postal district and another twenty-two (38.6%) between postal districts with just five moving in from outside the city and only two of these five coming from outside the Yorkshire and Humberside planning region. For the Sheffield based firms the movements were yet more localised with fourteen (two-thirds) being within the same postal district, seven between postal districts and none from outside the city.

When asked to give the reasons for their location decisions increased demand for their services proved to be the most frequently cited single factor, twenty-six firms gave this reason alone, followed by there being similar services in the area (20) and no similar services in the area (14). Of the possible permutations for this question only similar services and increased demand (24) and no similar services and increased demand (16) reached double figures. In all, increased demand was cited by eighty-five firms, 'other' reasons by eighty-four, similar services in the area by fifty-nine and no similar services in the area by forty-one firms. The 'other' reasons which influenced the location decision of firms can be divided into three groups as follows:

a) geographical factors - centrality of location (13 firms), ease of access, especially to motorways (6), convenient for staff (5), closeness to former premises (4), proximity to clients (3), suitable district (3), Leeds as a good centre of operations for the north (3), suburban location (1).

b) premises/amenities - availability of suitable premises (10), need for more space (6), lower cost of new premises (7), end of lease (5), improved car parking (4), moved as the result of a merger (4), old premises required for redevelopment (2), buying premises (2), offices owned by parent company (3), more modern office (1).

c) miscellaneous - to improve firm's image (4), national reorganisation (1), to improve internal communications by bringing a number of offices together (1).

Finally, with respect to locational changes all firms surveyed were asked to indicate whether they were considering relocating their office. Fifty-two firms (12.1%) replied that

they were doing so. Only four of these, all based in Leeds, indicated that they intended to move out of the city and from the three which gave their choice of new location it is apparent that these moves were localized. Forty-two firms gave reasons for their intended relocation. Of these company expansion and a move to larger premises appeared twenty-two and nine times respectively while other reasons cited include the need for improved parking facilities, the purchase of property, merger, expiry of the lease and dissatisfaction with their current premises in terms of costs or services provided.

Cross-tabulating factors influencing the location decision by the reason why the office was established at its present location (Table C16) revealed that 'other' reasons have the most influence on location decisions for newly established firms. In contrast, and not surprisingly, for the firms which located as a result of company expansion increased demand for their services was the most important influence while for office relocation 'other' reasons were again the most significant. In terms of relocation, it appears that those offices which have been at their present site for five years or more are least likely to be considering relocation, only 6.9% were doing so compared to 18.3% for those which had been at their present site for less than five years. Given that offices in the former category tended to be larger than those in the latter it may be that the costs of relocation are higher for such firms. For example, there may be negative externalities in terms of movement such as loss of skilled staff or clients. Offices in the intermediate employment size categories are, however, marginally more likely to be considering relocation, perhaps because they have outgrown their current premises.

It is apparent, therefore, that advanced producer service firms are comparatively mobile and that there is quite a high rate of new firm formation in this sector. This latter point is consistent with the findings of the literature. Further investigation of the mobility of the firms surveyed is, however, revealing. Both in terms of the firms which had moved and those which intended to move, (potential) relocations were found to be very localized, usually within the same postal district. Increased demand for their services in an area was

the single most frequently cited reason for their choice of location while there is evidence that both agglomeration effects and the existence of gaps in the market are important factors. Of the firms which intended to move over half indicated that their companies were expanding indicating that growth in the advanced producer service sector may well be continuing, although of course some of this expansion may be taking place at the expense of other firms.

Overall then the findings of this part of the survey are consistent with those of the literature. Firstly, a dichotomy exists with respect to the corporate structure of the advanced producer service sector. On the one hand, there are small, often single site, indigenous firms and on the other large non-indigenous firms which are frequently headquartered in London and the South East. This being the case a significant proportion of a.p.s. employment, especially in the banking, financial services and insurance industries, is controlled from outside of the region highlighting the potential vulnerability of this sector to change over which it has no control. Secondly, it is a relatively 'young' sector in that newly established firms account for more than one in ten of the firms surveyed.

Growth in the a.p.s. sector appears to be continuing on the basis of the survey results. Over half of the firms had increased their employment over the past two years, a large majority expected their turnover to increase and two-fifths expected to diversify their services. The strongest rate of growth appears on average to be occurring in industries in the professional/scientific services group. This agrees with the findings of Green (1985).

Finally, although firms in this sector appear relatively mobile, in practice these moves are very localized and are generally the result of company expansion, increased demand for their services in an area, agglomeration effects and/or unexploited market opportunities. These factors may of course be related. This brings us to the next area of investigation - the sources of demand for the products of advanced producer service firms.

6.3.2 The Client Profile of Advanced Producer Service Firms

Two lines of approach were put forward in section 6.2.4 with respect to the market for advanced producer services. Firstly, that it has widely been assumed that manufacturing is the principal, sometimes only, source of demand for these services and as a result the possibility that other sectors may also use these services has been relatively neglected. Secondly, that the geographical market for these services has been expected to be highly localized despite the evidence that this is not necessarily the case for all firms, especially those which supply the most specialized types of services.

In the case of the sectoral demand for advanced producer services it was argued that although the idea that manufacturing was the main (or sole) source of demand for a.p.s. may have been appropriate in the past this may not still be the case. Over recent years, advanced producer services have grown rapidly at a time when manufacturing has been in decline. It is unlikely, therefore, that the growth of demand implicit in the former can be entirely, if at all, accounted for by increased demand from the manufacturing sector. That sectoral market patterns differ is exemplified by the work of Ley and Hutton (1987) and so it is appropriate to investigate the structure of a.p.s. demand through the survey to see if the assumption of manufacturing dominance does in fact still hold.

With respect to the geographical market for advanced producer services arguments arose at both an applied and a theoretical level. As already mentioned above, much of the literature assumes at the very least that a large majority of producer service firms will have highly localized markets although it admits the possibility that this is less true for firms providing the most specialized types of services. The location quotient analysis of Chapter Five provides evidence to contradict this, however. For example, London was found to sell the products of ten of the eleven advanced producer service industries outside of the region's boundaries. More specifically in the context of this survey, both Leeds and Yorkshire and Humberside were found to export other financial services. In all, the evidence of Chapter

Five suggests that the market for advanced producer services is not as localized as would have been predicted. Indeed, given the self-sufficiency criterion of location quotient analysis the degree of inter-regional trade is probably under-estimated by this measure. At the theoretical level it was hypothesized in Chapter Three (section 3.2.1) that advanced producer services should be included as part of the basic sector of the local economy, that is, they form part of the export base. The examination of client location via the survey provides a direct test of this hypothesis.

Of the 369 firms which answered question fourteen (Table C17) 107 (29%) had no individuals as clients, that is they were exclusively company orientated, and for a further 124 (33.6%) individuals accounted for less than half of their clients compared to 54 (14.6%) which had over 90% of their clients in this category and which lay mainly in the financial services related industries. In terms of the distribution of clients as measured by the size of the client firm while ninety respondents (24.4%) had no small firm clients this figure rose to 118 (32%) for medium-sized firms, 154 (41.7%) for large firms and 282 (76.4%) for multinational companies. This may be in line with the hypothesis that larger firms will internalize more of their routine a.p.s. needs. At the other extreme, small firms accounted for over 90% of clients in five cases, medium sized firms in one case, large firms in twelve cases and multinationals in one case. Despite this, it should be noted that of the 369 respondents to this question 279 (75.6%) had small firm clients, 251 (68.0%) medium sized firm clients, 215 (58.3%) large firm clients and 87 (23.6%) multinational clients. This represents a significant services to corporate clients sector, especially so allowing for the likely concentration of services to individuals in a small number of industry groups.

In terms of industry sector (question 15, Table C18) only ninety offices (out of 345 respondents to this question, 26.1%) had clients in the agricultural sector and for eighty-five of these such clients account for 10% or less of their clients. Similarly for mining only sixty firms (17.4%) had such clients of which forty-four indicated that mining accounted for 10% or less of their clients. With respect to the manufacturing and service sectors the supply of advanced producer services to service industries was greater than that to manufacturing.

Sixty three offices (18.3%) had no manufacturing clients compared to only 28(8.1%) for service clients. Manufacturing industry accounted for over 50% of clients in eighty cases (23.2%) and over 80% in 23 cases (6.7%). This compares to 130 (37.7%) and 64 (18.6%) respectively for services.

Private sector clients, as expected, (Table C19) were in the majority with only four of the 363 respondents (1.1%) indicating that they had no clients in this sector compared to 240 (66.1%) which drew over 90% of their clients from this sector. Only eighty-three offices (22.9%) had nationalised industries as clients and they accounted for less than 30% of clients in seventy-six cases. Similarly although a large number of offices (118, 32.5%) numbered national or local government organisations among their clients in 94 cases these accounted for less than 30%.

In terms of the analysis of sectoral demand for advanced producer services a number of points emerge from the above. Firstly, as expected given the definition of the group such services are clearly geared towards the corporate market. Secondly, there is some evidence that the use of external a.p.s. sources may decline with client firm size. As we moved from small firm to multinational clients increasing proportions of the respondents indicated that they had no clients in each category. One, or both, of two effects may be operating here. Either large firms tend to internalize more of their service requirements or they are more likely to obtain any services they need to externalize from a.p.s. firms near their head office which in most cases will be located outside of the region. Thirdly, it is apparent that a large majority of the respondent firms clients are to be found in the private sector. In most cases the percentage of total clients accounted for by government or nationalised industry is small. Finally, and most importantly, we turn to the analysis of demand in terms of its industry sector components. The contribution of agriculture and mining as sources of demand for advanced producer services is relatively insignificant. Manufacturing, contrary to the expectations of the literature, is not, however, the dominant source of demand for advanced producer services. While 18.3% of firms had no manufacturing clients the corresponding

figure for services is just 8.1%. Similarly, at the other extreme, manufacturing accounted for over 90% of clients for eleven firms (3.2%) compared to fifty-one (14.8%) in the case of services. It appears, therefore, that services have taken over from manufacturing as the most important source of demand for advanced producer services. This represents a significant change, the implications of which will be discussed later.

Turning now to the second issue raised at the beginning of this section, that of client location, it can be seen from Table C20 that of the 384 firms which answered question seventeen of the survey only eighty one (23.2%) indicated that they had no clients elsewhere in Yorkshire and Humberside and a hundred and eight (28.1%) no clients elsewhere in the U.K. compared to 327 (85.2%) who said they had no clients overseas. Thirty three offices (8.6%) indicated that over half their clients were elsewhere in Yorkshire and Humberside, forty-seven (12.2%) that over half were elsewhere in the U.K. and three (0.8%) that over half were overseas. Thus for these individual groups alone a total of eighty-three firms (21.6%) had over half their clients outside their immediate city region and when proportions are combined for these groups as will be done below this figure would be expected to rise. In addition smaller numbers of offices in Sheffield and Leeds had no clients in their respective cities than would be expected if there was no a.p.s. trade between them, I will return to this point in section 6.4.

A preliminary examination of the survey responses therefore indicates that export activity is taking place. Over three-quarters of firms sell at least some of their services to clients outside of their city area but within the planning region indicating the existence of intra-regional trade. Given that the firms being surveyed are located in the two metropolitan regions this could be viewed as the effect of urban centres selling their products to clients located in their hinterland as would have been predicted by central place theory. In this case, however, such trade would be expected to be in only the most specialized services. Whether this is in fact so will be examined later by disaggregating the respondents by industry. The presence of clients elsewhere in the U.K. and overseas may similarly be the result of the

activities of a few specialised industries. Over two-thirds of firms indicated that they had clients elsewhere in the U.K. so that inter-regional trade in advanced producer services is also taking place. In a sense this was expected given the results of the location quotient analysis of Chapter Five but also as expected the level of this trade appears to have been under-estimated by this approach. According to those results only financial service firms in Leeds should be selling their product beyond the planning region boundaries. This is obviously not the case. Finally, the presence of firms selling their services overseas is especially significant given that this would not have been expected for a region as severely under-represented in a.p.s. activities as Yorkshire and Humberside. If such export behaviour were expected to occur at all it would be for the over-represented regions of London and the South East. That almost 15% of firms were found to have clients overseas is surprising even though in most cases this represents a small proportion of total clients.

Cross-tabulating the client location figures we find that twenty-five firms (5.8%) had only clients in Sheffield, fourteen (3.3%) only clients in Leeds and four (0.9%) only clients elsewhere in the U.K., the figure being zero for Yorkshire and Humberside and overseas. Altogether, therefore, some 326 firms (84.9%) have clients in more than one location. In total, 139 (32.3%) firms were found to have at least half of their clients outside the two cities of which 36 (8.4%) have over 90% of their clients outside the two cities. This represents a significant proportion but takes little or no account of firms which may have over 50% of clients outside the city but which are spread in low proportions across the four possible export groups. This can be overcome by computing a variable which adds these proportions together for each city. Doing so reveals that an additional forty-eight firms in Leeds (19.3%) had over 50% of their clients outside the city compared to just seventeen (9.4%) for Sheffield. Overall, therefore, 204 firms (53.1%) have over half their clients outside of the city in which they are located. This represents a significant level of trade in a.p.s. activity which refutes the idea that services, of whatever type, supply their product purely to a locally orientated market. These findings are important for two reasons. Firstly, they indicate that previous studies may have under-estimated the inter-regional trade in

(advanced) producer services which exists. Secondly, our hypothesis that advanced producer services should be included in the basic sector has gained substantial support. Before discussing this in depth and drawing any firm conclusions, however, it would be useful to disaggregate the survey response by firm type and industry. In doing so we can test the sub-hypothesis that different types and sizes of firms will differ in their export activity and client profile and that differences in export behaviour will be apparent between industries according to their degree of specialization respectively.

In terms of the former the cross-tabulation of office type by client type (Table C21) revealed that head offices and single site firms are least likely to have individuals as clients in contrast to U.K. company branches for which 29.5% numbered over 80% of their clients in this category. U.K. company branches and head offices are least likely to have small firm clients while single site firms are most likely to have a large proportion of these. Paradoxically, single site firms and U.K. company branches are most likely to have no and over half of their clients in the medium sized firm group, and single site firms are most likely to have both no and over 80% of their clients in the large firm category. Single site firms proved overwhelmingly least likely to include multinational companies among their clients while over a quarter (25.4%) of multinational branches have such clients, perhaps an indication of the existence of a 'complex of corporate activity'.

With respect to industrial structure (Table C22) the negligible role of agricultural and mining based clients, as noted above, provides no scope for analysis here. For the majority of offices regardless of type manufacturing accounts for 11-50% of clients while single site firms are least likely to have such clients and local company branches are most likely to have a large proportion of them. Service sector clients are rarest for head offices while at the other end of the scale multinational branches are most likely to have such clients and U.K. company branches to have high proportion of them. Given the dominance of private sector clients it might be expected that few differences between office type would be apparent.

This is largely the case (Table C23) except that U.K. company branches appear more likely to have nationalised industry clients than the other groups.

The client base of advanced producer service firms does not, therefore, appear to differ significantly according to their corporate structure. The main difference is that U.K. company branches are most likely to have a high proportion of non-corporate (individual) clients. This is not unexpected given that such branches are often to be found in the banking, financial services and insurance industries which contain consumer as well as producer orientated functions. Similarly, multinational branches might have been expected to have multinational clients as it would be advantageous for such clients to be able to obtain a consistent type and/or quality of service locally wherever their own offices are located. At industry sector level few significant differences are apparent as is the case for the public/private sector division of clients. A disaggregated analysis of client location may prove more fruitful.

In terms of client location (Table C24) 85.7% of multinational branches have clients elsewhere in Yorkshire and Humberside compared to 70.3% of local company branches. In general, however, the 11-50% range is dominant for all groups with relatively few offices of any type having over 50% of their clients elsewhere in Yorkshire and Humberside. A third of U.K. company branches have no clients elsewhere in the U.K. compared to just 15.9% for multinational branches, this time with the majority of respondents having 1-10% or 11-50% of their clients there. Little difference is apparent between groups with respect to overseas clients.

Cross-tabulating firm size, as measured by number of offices, by client location showed that for the two to five offices group 65.5% of firms had clients elsewhere in the Yorkshire and Humberside planning region (Table C25). The figure then rose to 78.3% for firms with six to ten offices, peaked at 92.4% for the eleven to twenty offices category and then fell to 84% and 48.2% for the twenty-one to fifty and over fifty offices groups

respectively. For elsewhere in the U.K. the corresponding figures were: 2-5 offices 73.5%, 6-10 75.6%, 11-20 53.9%, 21-50 45.2% and over 50 45.7%. With respect to overseas clients the figures are: 2-5 offices 14.4%, 6-10 24.3%, 11-20 23.1%, 21-50 9.7% and over fifty offices 9.6%. Thus it appears that the largest firms (over fifty offices) are least likely to have clients elsewhere in Yorkshire and Humberside, the U.K. and overseas. This is not altogether unexpected as the more offices a firm has the more likely it's clients are to be localized in general due to smaller physical distances between offices. The large export proportions for intermediate size firms may be overstated due to the limited numbers in these groups but the degree of export activity among the small firms is also perhaps higher than expected. It suggests that many of the latter may provide highly specialized services to a large hinterland.

Firm size as measured by number of offices appears, therefore, to be a better indicator of export activity than office type. This is largely because firms represented by the three types of branch office may vary considerably in size from a few to a large number of offices. Consequently trading patterns will differ between offices within each branch type group. Table C24 provides us, therefore, with somewhat inconclusive results. On the other hand, it is apparent from Table C25 that offices which are part of large firms are likely to have a higher proportion of local clients than is the case for those in small firms. As mentioned above this may be the result of the smaller geographical distance between offices and/or differences in the services provided. This latter point can be tested by disaggregating the survey results by industry. In general terms, firms in the more specialized industries such as, say, consultant engineering, would be expected to cover a wider market area than those in, for example, banking, although of course there may be individual firms which do not fit precisely into this pattern. The following results must, however, be treated with care due to the small numbers of firms in some industry groups.

Disaggregating by industry (Tables C26 to C32) reveals that in general Leeds firms, regardless of industry, tend only to have small proportions of their clients in Sheffield, the one exception being a financial services firm with 51-60% of its clients in this area.

Sheffield based firms with clients in Leeds appeared somewhat rarer but were marginally more likely to have a high proportion of their clients in Leeds as this group included an accountancy firm, a computer service firm, a finance company, a personal insurance firm and a management consultancy all of which had over 80% of their clients in Leeds. For the sample as a whole corporate finance firms (89.3%) are most likely to have clients elsewhere in Yorkshire and Humberside compared to just 44.8% for personal property dealing. The range of firms with over half of their clients in this area ranges from 13.3% for consultant engineering to 5.8% for surveying with several industry groups - corporate and personal banking, corporate and personal legal services, corporate and personal property dealing, research and development, and secretarial and office services - having no firms in this category. Advertising firms (90.9%) are most likely to have clients elsewhere in the U.K. compared to just 43.2% for corporate banking. The range of firms with over 50% of their clients in this area runs from 34.1% for advertising and 33.3% for consultant engineering to 0.8% for personal finance with corporate and personal banking, personal insurance and secretarial and office services having no firms in this group. The figures indicate a substantial export of services outside the planning region for several industries. For all industries this level is, not unexpectedly, lower for overseas clients. Only the management consultancy group contains firms (2, 3.6%) with over half of their clients overseas while only the advertising, computer services, corporate and personal insurance, personal property dealing and other services groups contain firms with over 10% of their clients overseas.

Overall, then, it appears from Tables C26 to C32 that there is some support for the idea that firms in the more specialized industries are more likely to export their product, and export more of it, than those in the less specialized industries.

Let us now review the principal results of this section. The finding that services rather than manufacturing form the main source of demand for advanced producer services is significant. It suggests that the assumption underlying many of the demand-side studies reviewed in Chapter One, that manufacturing industry is the principal user of these services,

may be incorrect. How much this is true of Great Britain as a whole, cannot, however, be stated. The decline of manufacturing industry, especially in the North of England, over the past decade may have forced firms providing advanced producer services to diversify, or even change, their client base in order to survive. Alternatively, a.p.s. firms in Leeds and Sheffield may be a 'special case'.

The evidence presented above provides strong support for the hypothesis that advanced producer services should be included as part of the basic sector of the local economy. While the level of intra-city and intra-planning region trade accounts for much of the activity of advanced producer service firms, the fact that over two-thirds of firms have clients elsewhere in the U.K. and around 15% clients overseas is proof that these firms have a much wider geographical market area than has been supposed, especially in the case of firms in the more specialized industries. In terms of the regional balance of payments, such exports assist in the generation of regional income.

6.3.3 Respondents Use of Advanced Producer Services

The idea that manufacturing provides the dominant market for advanced producer services was seen to falter in section 6.3.2. Prior to this it might have been expected that the firms in the survey would not use a.p.s. themselves. Now, however, such usage appears possible and as is apparent from the analysis of this section does in fact take place. Moreover, such services are sometimes obtained from external sources.

Of the 402 firms which responded to the question on a.p.s. usage (question 20) only 56 (13.9%) did not use insurance services compared to 242 (60.2%) which did not use architectural services (Table C33). As might be expected, banking, insurance and legal services were most frequently used in contrast to a much lower level of usage of architectural services, research and development, management consultancy and property services. External provision was highest for banking (64.2%), legal services (56.7%) and insurance (52.2%)

compared to low values for research and development (6.2%) and secretarial services (5.2%). Internal provision was highest, as expected, for secretarial services (66.4%), followed by computer services (44.0%) and, perhaps surprisingly, advertising and market research (41.5%). It is, however, the more specialized services such as advertising and market research (8.2%), computer services (6.7%) and legal services (5.5%) where these are most often obtained from both internal and external sources. This implies some level of in-house expertise coupled with outside expertise for certain (perhaps higher level) functions, for example computer system maintenance.

The response was lower (333 firms) for question 21 which asked respondents to give the location of their a.p.s. suppliers (Table C34). Eighty-five of the firms which responded (25.5%) had a.p.s. suppliers elsewhere in Yorkshire and Humberside although only thirteen (3.9%) received over 50% of their services from this source and of these seven obtained over 80% of their a.p.s. needs from there. One hundred and forty-nine firms (44.7%) had a.p.s. suppliers elsewhere in the U.K. of which 58 (17.4%) drew over 80% of their a.p.s. needs from this source. This may of course at least partly reflect firms obtaining such services from their company head office. Thus a.p.s. firms import a.p.s. from suppliers outside the region, again providing evidence of an inter-regional trade in such services.

It is apparent, therefore, that advanced producer service providing firms do use advanced producer services themselves. That this should be the case is perhaps not surprising given the finding of the previous section that services constitute the main source of demand for a.p.s. The level of usage is, however, higher than might have been expected. That, for example, secretarial and office services are likely to be internalized while, for example, legal services are more likely to be externalized supports the idea that less specialized activities are more likely to be provided in-house. In some instances, both internal and external sources will be utilized, the former perhaps for day-to-day activities and the latter where specialist advice is needed. In geographical terms, 25.5% and 44.7% of the respondents obtained such services from sources elsewhere in the planning region and elsewhere in the U.K.

respectively. Thus it appears that the trade in a.p.s. observed in the previous section is not purely one-way, the respondent firms are also importing as well as exporting advanced producer services. Part of this trade may, however, reflect the corporate structure of respondent firms, that is, branch offices may refer their service demands back to their head office. If so, then a distinction can be made between intra-firm and inter-firm trade in these services.

In aggregate (Table C35), single site firms are least likely in all cases except insurance, banking and legal services to use advanced producer services while multinational branches are most likely to do so for all services except banking, financial and insurance services. Multinational branches are moreover most likely to internalize all these services with single site firms least likely to do so while the reverse is generally true for externalization. Thus industry structure will influence a.p.s. demand from both internal and external sources. Where much of the demand is internalized leakage from the local area back to firms' head offices (usually in the South East) is to be expected which will inhibit the development of the local a.p.s. sector.

In terms of obtaining supplies of a.p.s. (Table C36) only 14% of U.K. company branches had any of their suppliers elsewhere in Yorkshire and Humberside compared to 32.4% for local company branches while for suppliers elsewhere in the U.K. the corresponding range is from 20.8% for single site firms to 55.6% for U.K. company branches. In all, 3.2% of multinational branches, 1.9% of U.K. company branches, 8.1% of local company branches, 2.1% of single site firms and 12% of head offices drew over half of their a.p.s. from suppliers elsewhere in Yorkshire and Humberside. The corresponding figures for elsewhere in the U.K. are: multinational branches 31.8%, U.K. branches 41.7%, local branches 2.7%, single site firms 2.6% and head offices 4%. Thus as indicated above a substantial leakage of a.p.s. demand is occurring both into the wider planning region and the U.K. chiefly via multinational and U.K. company branches. As both Sheffield and Leeds

have large numbers of these (see section 6.3.1) such leakages weaken their indigenous a.p.s. sectors.

Looking at firms with suppliers outside the planning region only we find that differences do exist between industry groups (Table C37). While the proportion of firms deriving none of their a.p.s. needs from elsewhere in the U.K. is as high as 63.6% for management consultancy and 75% for secretarial and office services, the proportions for corporate and personal banking are 13.6% and 18% respectively. Indeed in general the figures for the banking, insurance and finance groups are significantly lower than those for the other industries. This may well reflect differing corporate structures as these three groups have more branch offices than is the case for the remainder. The same appears to be broadly true for firms which obtain over 90% of their a.p.s. needs from elsewhere in the U.K.

The surveyed firms usage of a.p.s. shows some variation between industries according to the service in question (Table C38) but due to the differing behaviour of firms within industries as well generalization on this score is exceedingly difficult. A tendency for the banking industry to internalize most of its services is apparent, however, but this might just reflect its corporate structure. In addition it appears that the more specialized services, such as architectural services, are used less frequently by all industry groups than the more general ones such as banking. Those industries such as accountancy and consultant engineering, which we already know to be dominated by small firms, tend not to use or to externalize more of their a.p.s. needs than other groups.

There are, therefore, differences between types of office in terms of their demand for advanced producer services and the way in which this demand is satisfied with multinational branch offices both using and internalizing more of such services compared to lower usage but a higher degree of externalization for single site firms. Combined with the analysis of the location of suppliers of a.p.s. to the respondents (Table C36) this makes the

distinction between intra- and inter-firm trade mentioned earlier in this section a reality. Multinational and U.K. company branches, by definition headquartered outside of the region, are far more likely than the other types of offices to obtain their a.p.s. requirements from elsewhere in the U.K. It is probable that such services are bought or produced at head office level and then disseminated to the branch offices. There may be a substantial leakage of demand for a.p.s. away from the planning region as a result of this intra-firm trade in such services. This is to some extent corroborated by the disaggregation of a.p.s. usage by industry where industries such as banking which are dominated by large firms obtain much of their a.p.s. requirements from outside of the planning region.

6.3.4 Summary

Four main points arise from the analysis of sections 6.3.1 to 6.3.3. These are:

i) the corporate structure of the advanced producer service sector conforms to that predicted by the literature for producer services as a whole. There is a dichotomy between offices which are part of large branch networks on the one hand and small, often single site, firms on the other. Moreover, there is a relatively high proportion of newly established (young) firms in this sector.

ii) contrary to expectations, services rather than manufacturing industry constitute the main source of demand for advanced producer services.

iii) a significant degree of inter-regional export activity is occurring with over two-thirds of respondent firms having clients elsewhere in the U.K. and just under 15% having clients overseas.

iv) advanced producer service firms themselves use services of this type. In addition, some 44.7% of firms obtained these services from outside of the planning region,

another indication of the existence of an inter-regional trade in such services although this time in the form of imports rather than exports.

6.4 A Comparison of Advanced Producer Services in Leeds and Sheffield

6.4.1 Structure

Sheffield has a larger indigenous sector (62.2% of Sheffield firms) than Leeds (56.8%) (Table C39) mainly as a result of a much higher proportion of single site firms as Leeds has more head offices and local company branches. Adjusting for the different sizes of the relevant groups it also appears that Sheffield is relatively over- and under-represented in terms of firms headquartered in London and elsewhere in the U.K. respectively compared to Leeds (Table C40). In terms of number of offices (Table C41) it is noticeable that Sheffield has a higher proportion of offices of the smallest and largest sized firms than Leeds while in terms of number of employees (Table C42) the distribution of the Sheffield offices is skewed towards the lower end of the range.

In terms of their locational characteristics Sheffield offices are much more likely to have been located at their present site for more than five years (71.1%) than is the case for Leeds where over half (58.4%) of firms had been there less than five years (Table C43). As might be expected given these figures proportions in all four groups regarding the firms reasons for their location (Table C44) are higher for Leeds than for Sheffield. Adjusting the figures to give the locational reasons of applicable firms only, however, we find that relocation of office is more likely to be a factor in Sheffield compared to higher levels of new firm formation and company expansion in Leeds. With respect to factors influencing the location decision there appeared to be relatively little difference between firms in the two cities but Leeds firms appeared marginally more likely to be considering relocation than Sheffield ones (Table C45).

Differences in the corporate structure of the advanced producer service sectors in Leeds and Sheffield do appear to exist therefore. The dichotomy in terms of firm size noted for the survey as a whole appears more pronounced in the case of Sheffield than for Leeds as Sheffield has the highest proportion of both the smallest and the largest firms. In terms of numbers employed, however, Leeds has the advantage with one in ten offices having more than fifty employees compared to one in twenty in Sheffield which also has proportionately more offices in the one to ten employees range.

Firms in Leeds exhibit a greater degree of mobility than those in Sheffield and are also more likely to be newly established. Moreover, proportionately more of the Leeds firms had moved as a result of company expansion than was the case for Sheffield firms where office relocation accounted for the majority of moves. Given these differences it is possible that firms in Leeds and Sheffield will behave differently in other respects. For example, we found in section 6.3.2 that offices which are part of large firms are likely to have a higher proportion of local clients than offices in smaller firms. As Sheffield has more offices which are part of large firms (over fifty offices) than is the case for Leeds, will Sheffield's advanced producer service sector have a smaller geographical market for its services? Or will this effect be offset by the fact that Sheffield also has proportionately more offices in the smallest category (one to five offices)? These and related questions will be considered in the next section which examines the client profile of firms in the two cities.

Before doing so, however, it should be mentioned that the differences between Leeds and Sheffield observed in this and subsequent sections may be a reflection of the different industry mix in the two cities. In order to allow for the numbers of firms in each industry in each case (see Appendix B) the table below calculates the proportion of each cities' a.p.s. sector accounted for by individual industries.

	Firms as % of total a.p.s. sector	
Industry group	Sheffield	Leeds
Insurance	21.6	20.0
Banking	16.4	11.2
Other financial institutions	7.2	9.8
Owning and dealing in real estate	7.8	9.2
Advertising and market research	6.8	7.7
Other business services	7.7	8.8
Accountancy services	13.7	11.7
Legal services	9.5	10.9
Research and development	1.5	1.3
Other professional and scientific services	7.8	9.4

It appears from the table that Sheffield has proportionately more firms engaged in insurance, banking, accountancy and research and development than Leeds while the reverse is true for the other industry groups. In general, therefore, Leeds seems to be slightly better represented in the more specialized a.p.s. industry groups. Consequently the findings of this section that Leeds based offices tend to be larger in terms of their number of employees and more mobile than those in Sheffield may reflect the fact that Leeds is better represented in those industries which are exhibiting the fastest rates of growth. Similarly as a result of this specialization offices in Leeds might be expected on average to export more of their advanced producer service output.

6.4.2 Client Profile

It appears that Leeds firms are less likely to have individuals as clients than Sheffield ones, 35.2% and 20.1% respectively having no such clients (Table C46). Of the 30.4% of

Leeds firms with over half their clients in this category just 15.2% are in the over 80% group compared with respective figures of 47.1% and 27.0% for Sheffield. For small firms, however, there appears to be relatively little difference between the two cities as 24.5% of Sheffield and 24.8% of Leeds firms indicated they had no clients in this category. For the over 50% group the figures were 6.9% and 8.6% and for the over 80% 2.5% and 1.9% respectively. Moving on to medium sized firms, however, larger differences become apparent. Just 27.6% of Leeds firms have no clients in this category compared to 37.7% for Sheffield. For the over 50% group the figures were 6.7% and 3.7% but only Sheffield (1 firm, 0.6%) had any entry for the over 80% group. For large firms Leeds also performed better with just 37.1% of firms having no clients in this category compared to 47.8% for Sheffield firms. For the 1-50% group the figures were 47.2% and 41.5%, for the over 50% group 15.7% and 10.7% and for the over 80% group 5.7% and 3.8%. Finally, for multinational clients, 71.4% of Leeds firms had no clients in this category compared to 83.0% for Sheffield firms. For the 1-50% group the figures were 24.7% and 15.1%, for the over 50% group 3.8% and 1.9% but, perhaps surprisingly, for the over 80% group 0.5% and 1.3%.

It appears, therefore, that the Leeds firms are more orientated towards corporate clients than the Sheffield ones which cater more for individuals. Even so, the existence of a large corporate market has been captured in these figures. Both cities have roughly the same proportion of small firm clients but as the client size group increases the more is the case that Leeds firms have a greater proportion of their clients in these categories.

As already noted in section 6.3.2 agricultural and mining industry clients are relatively insignificant in numbers and so provide little data for discussion. Sheffield firms, however, are slightly more likely to have clients in these groups (Table C47). Leeds firms appear less likely to have manufacturing clients than Sheffield ones with 21.9% of the former having no clients in this category compared to 14.1% for the latter. For the 1-50% group the figures are 56.2% (Leeds) and 61.0% (Sheffield) and for the over 50% group 21.9% and 24.9% with 5.6% and 8.1% being in the over 80% group respectively. Thus the percentages are

consistently higher for Sheffield than for Leeds. Correspondingly Leeds firms appear more likely to have service sector clients and higher proportions of them than Sheffield. The dominance of private sector clients is again clear for both cities as it was for the survey respondents as a whole so that significant differences between them so not exist (Table C48).

With respect to client location (Table C49) some 39.5% of Leeds firms indicated that they had clients in Sheffield with one firm having over half of its clients there. In contrast only 21.2% of Sheffield based firms had clients in Leeds again with only one having over half their clients there. Of the Sheffield based firms eight (4.8%) had no clients in the city compared to seventeen (7.8%) of Leeds based firms which had no clients in Leeds. Thus, there is some evidence of a trade in advanced producer services between Leeds and Sheffield balanced in favour of the former while in some cases the firm's location provides no guide to the whereabouts of its clients.

Some 41.8% of the Sheffield based firms had over 80% of their clients in Sheffield, while another 25.5% had 51-80% of their clients there. The corresponding figures for the proportions of Leeds based firms with clients in Leeds are 15.1% and 30.3%. In aggregate, therefore, Leeds firms appear to be more export orientated than Sheffield firms and this is borne out by the remaining figures for destination of output given below.

Just 13.8% of Leeds firms had no clients elsewhere in Yorkshire and Humberside compared to 35.2% for Sheffield while the figures for firms having over half their clients in this area were 12.8% and 3.0% respectively. Sheffield however, had proportionately fewer firms with no clients elsewhere in the U.K., 26.1% compared to 29.4% and only slightly fewer with 50% of clients there, 11.5% compared to 12.8%. This may just reflect the geographical position of the two cities. Fewer of the Leeds firms had no clients overseas, 83.0% compared to 87.9% but firms with over 10% of their clients in this group were rare, seven (3.2%) in Leeds and five (3.0%) in Sheffield.

It seems, therefore, that some differences do exist between firms based in Leeds and Sheffield with respect to their client profile. Those in Leeds tend to be less likely to have non-corporate clients and to have lower proportions of them than their counterparts in Sheffield. This may be a reflection of the differences in corporate and industry structure noted in the previous section. There, Sheffield was found to have more branch offices which were part of large firms than was the case for Leeds. Given that large companies tend to be concentrated in the banking, insurance and financial services groups which include consumer as well as producer elements in the services they provide it is perhaps not surprising that Sheffield firms should be more likely to have individuals as clients. In contrast, Leeds firms were found to number proportionately more medium-sized, large and multinational firms among their clients.

With respect to the industry sector breakdown of clients, Sheffield firms were significantly more likely to have manufacturing industry clients than firms in Leeds while the latter were more likely to have service sector clients and higher proportions of them than firms in Sheffield. This is perhaps slightly unexpected. It was suggested in section 6.3.3 that one reason for the apparent shift from manufacturing to services in terms of demand for advanced producer services might be the decline of manufacturing in the region and a consequent need to find new clients in order to survive. If so, why is Sheffield so much more reliant on manufacturing for this demand than Leeds? The most possible explanations appear to be either that Sheffield was originally more dependent upon manufacturing industry as a purchaser of a.p.s. and/or that the a.p.s. sector in the city has been slower to adapt to change.

A comparison of the industrial structures of the two cities may be useful in trying to determine the answer to this question. Table 6.1 shows the percentage share of total employment accounted for by each industry sector in 1984.

Table 6.1 Industrial Structure: Great Britain, Leeds and Sheffield

	% of total employment		
Industry sector	**Great Britain**	**Leeds**	**Sheffield**
Agriculture	1.67	0.44	0.28
Mining	3.82	3.05	7.88
Manufacturing	21.73	20.31	19.34
Construction	4.92	4.95	5.01
Services	67.86	71.25	67.49

Source: Department of Employment's NOMIS database.

These figures show that Leeds has a proportionately larger service sector than both Sheffield and Great Britain as a whole. This may well account for the fact that Leeds based a.p.s. firms are more heavily reliant on service sector clients. The table does not, however, explain why Sheffield based a.p.s. firms are more reliant on manufacturing industry clients. Indeed, it shows that Sheffield has the smallest manufacturing sector of the three regions. Sheffield's comparative strength is in its mining sector which to a limited extent was reflected in the results of the survey (Table C47). No firm conclusions can be drawn from this analysis, therefore.

Finally, some differences were also found to occur between the two cities with respect to the location of clients of the respondent firms. Leeds firms were far more likely to have clients in Sheffield than Sheffield firms were to have clients in Leeds. The important point here is that an inter-city trade in advanced producer services does exist. Moreover, contrary to the predictions of central place theory, this is not a one-way trade from the dominant metropolitan region (Leeds) to the sub-dominant metropolitan region (Sheffield) even though the flow of trade still favours the former. Firms in Sheffield appear to be more locally orientated than firms in Leeds in that just over 40% of them had over 80% of their clients in their own city compared to just over 15% in the case of Leeds. Leeds firms were much

more likely than Sheffield ones to have clients elsewhere in Yorkshire and Humberside. In contrast, Sheffield firms were marginally more likely to have clients elsewhere in the U.K. but proportionately more Sheffield firms had 10% or less of their clients in this area. Leeds firms were slightly more likely to have clients overseas.

This disaggregation by city reinforces the point made in section 6.3.3 that advanced producer service firms do sell their product outside of the region in which they are located. The main difference between firms in Leeds and Sheffield appears to be, however, in the distribution of their activity within the planning region. Those based in Sheffield sell a large proportion of their product in the city and have a more limited trade with Leeds and areas elsewhere in Yorkshire and Humberside. Leeds based firms, however, sell proportionately less of their services within Leeds and sell more of their services to Sheffield and to places elsewhere in the planning region. This suggests that firms in Leeds may produce the more specialized types of advanced producer services which need a larger market area to be viable. In all, then, some differences do exist between firms located in Leeds and those located in Sheffield in terms of their client base.

6.4.3 A.p.s. Firms as Users of A.p.s.

Differences between firms based in Leeds and Sheffield in terms of their usage of advanced producer services were slight implying that there is a relatively uniformity of a.p.s. usage which provides little scope for further discussion. On balance, however, Leeds firms were more likely to externalize at least part of their a.p.s. requirements. This probably reflects the differences in corporate structure between the cities. Sheffield based firms were more likely to have a.p.s. suppliers in Leeds than vice versa (Table C51), 15.0% compared to 4.2%, reemphasizing the trade between the cities and its balance in favour of Leeds. With regard to suppliers elsewhere in Yorkshire and Humberside only 70.8% of Leeds firms indicated that they had no suppliers there compared to 79.3% for Sheffield. In the case of the latter, no firms received more than half of their a.p.s. supplies from these compared to

6.8% of Leeds firms. For U.K. suppliers 54.7% of Leeds firms indicated they had none in this category compared to 55.7% of Sheffield firms with the former having 25.0% and the latter 17.9% with over 50% of their a.p.s. suppliers elsewhere in the U.K.

There appears, therefore, to be little discernible difference between firms in Leeds and Sheffield in terms of the type of advanced producer services they use except that firms in Leeds seem to be more likely to externalize their service requirements. In terms of the location of their a.p.s. suppliers, however, some differences were observed. Trade between the two cities again exists with Sheffield firms being more likely to import services from Leeds than vice versa. Firms in Leeds were more likely to have service suppliers elsewhere in Yorkshire and Humberside but little difference is apparent with respect to suppliers elsewhere in the U.K. except that Leeds based firms were more likely to draw more than 80% of their a.p.s. needs from this source. In aggregate, Leeds firms appear more likely to buy advanced producer services from outside of their own city and from outside the planning region than those in Sheffield.

This concludes our analyses of the disaggregated survey results.

6.5 Conclusion

Section 6.2 raised four main questions:

i) do advanced producer service firms in Leeds and Sheffield conform to predicted patterns of corporate structure and/or are there differences between the two cities?

ii) what factors influence the locational behaviour of advanced producer service firms?

iii) is the assumption often made in the literature that manufacturing industry provides the dominant source of demand for advanced producer services correct?

iv) do advanced producer service firms export their product and if so to what extent?

Answers to these questions have been found through our survey.

Broadly speaking, the advanced producer service firms surveyed do conform to the pattern of corporate structure predicted by the literature. A clear distinction can be made between the indigenous and non-indigenous firms in this sector. Indigenous firms tend to be small and often single site. Moreover, even the local company branches and head offices which form part of this group tend to be part of small companies.

This contrasts strongly with the results obtained for the non-indigenous firm group. Of the one hundred and sixty-nine non-indigenous offices eighty were part of firms which had over fifty offices. The most frequently cited location for the head offices of these firms was London (45.4%) while places elsewhere in the South East were also frequently mentioned indicating a high level of control of a.p.s. employment from outside of the planning region. This is all the more significant given the finding that non-indigenous firm offices were likely to have larger numbers of employees per office than indigenous ones.

Sheffield has a proportionately larger indigenous sector than Leeds with its higher proportion of single site firms accounting for most of this difference. Despite this, Leeds is better represented in terms of head offices and local company branches. Non-indigenous firms in Sheffield appear more likely to be headquartered in London and those in Leeds headquartered overseas than is the case for the other city. In terms of size, Sheffield has the higher proportion of both the smallest (five or fewer offices) and the largest (over fifty offices) firms but in terms of office employment 10% of Leeds offices have over fifty employees compared to just 5% in Sheffield.

Regardless of city, however, the survey returns show that the advanced producer service sector is growing. Over half of the respondents had increased their employment over the past two years, just over ninety-five per cent expected to increase their turnover in the immediate future and just over forty per cent expected to diversify their services.

That growth is occurring in this sector is also exemplified by the relatively high rate of new firm formation - more than one in ten firms (11.4%) were newly established. Firms in this sector also seem at first sight to be mobile with 45.8% indicating that they had been at their present location for less than five years. Further investigation revealed, however, that these moves were highly localized, the majority being within the same postal district. Only five firms, all now based in Leeds, had moved in from outside of the city and only two of these from outside of the planning region. Of the firms which had re-located 13.2% indicated that this was the result of company expansion. Increased demand for the firm's services was cited most frequently as a factor influencing the firm's relocation decision. The existence of gaps in the market and the possible agglomeration effects of locating close to firms providing similar services were also important influences on locational decision-making as were, to a lesser extent, good communications networks and the existence of suitable premises in an area. Finally, of the fifty-two firms (12.1%) which intended to re-locate in the near future over half indicated this to be the result of company expansion indicating a continuation of growth in this sector.

Breaking down these responses into their Leeds and Sheffield components revealed that firms in Leeds were more likely to be newly established and exhibited a higher degree of mobility than those in Sheffield. Leeds firms were also more likely to have moved as a result of company expansion. Otherwise, little difference was apparent between the two cities with respect to their locational characteristics.

In response to the first of the questions posed at the beginning of this section, therefore, we can say that the advanced producer service firms surveyed do in general

conform to the pattern of corporate structure predicted by the literature although some slight differences exist in this respect between the firms based in Leeds and Sheffield. In response to the second question, allowing for the relatively high rate of new firm formation, the principal factors influencing locational decision-making are increased demand for the firm's services (often resulting in company expansion), the effect of agglomeration economies, the existence of gaps in the market, good communications and the availability of suitable premises.

Turning now to the third question, that of the industry origin of the demand for advanced producer services we found that the advanced producer service firms were, as expected, largely geared towards the private sector corporate market although this was not the case for all firms. In particular, firms providing banking, financial and insurance services were likely to have individuals as clients as well. In terms of industry sector, clients in the agricultural and/or mining sectors were comparatively rare and where they did exist tended to account for small proportions, usually under 10%, of the firm's total clients. The majority of each firm's clients were divided between the manufacturing and service sectors. Contrary to expectations, however, this division was not in favour of the former. Some 18.3% of firms had no manufacturing sector clients compared to just 8.1% in the case of service sector clients. At the other extreme, the former accounted for over 90% of clients for eleven firms (3.2%) compared to fifty-one firms (14.8%) in the case of the latter. Thus the service sector appears to be the more significant source of demand for advanced producer services.

Leeds firms appeared less likely to have non-corporate clients and to have lower proportions of them than their Sheffield counterparts. Firms in Sheffield were marginally more likely to have both agricultural and mining industry clients than firms in Leeds but, more importantly, were also significantly more likely to have manufacturing industry clients. Correspondingly, Leeds firms were more likely to have service sector clients and higher

proportions of them than firms in Sheffield. Nevertheless, the overall level of service sector usage of advanced producer services was much higher than expected.

This brings us on to the next issue to be examined. Given the above finding that service sector firms appear to use advanced producer services quite extensively, do the a.p.s. firms surveyed use these types of services themselves? The answer to this question is yes. Most respondents used at least one type of advanced producer service with banking, insurance and legal services being used most frequently in contrast to a much lower level of usage of architectural services, research and development, management consultancy and property services. Those such as secretarial services were most likely to be internalized while others, for example, legal services were most often externalized. Some activities, in particular computer services, were obtained from both internal and external sources implying a differentiation between routine and more specialized service requirements. Multinational branch offices were found to both use and internalize more advanced producer services than other types of office with single site firms being least likely to use such services but more likely to externalize them. Finally, Leeds based firms appeared slightly more likely to externalize their a.p.s. requirements than those in Sheffield but this was the only difference between them. This further illustrates the importance of the service sector as a source of demand for advanced producer services.

In answer to the fourth question posed at the beginning of this section - do advanced producer service firms export? - it is clear from our results that the market for advanced producer services is much wider than would have been expected for service activity in general. A large majority of firms sell their product to clients outside of the city in which they are located. These sales can be broken down into three types - intra-regional, inter-regional and international sales. All three types represent export activity in terms of the local economy as defined by the city boundaries, the latter two constitute exports out of the planning region and the third type alone of course represents exports in their widest sense, contributing to the national balance of payments.

Intra-regional trade as might be expected occurs most frequently. Over three-quarters (76.8%) of firms have clients elsewhere in Yorkshire and Humberside while thirty-three (8.6%) indicated that over half their clients fell into this category. For clients elsewhere in the U.K. the corresponding figures were 71.9% and 12.2% and for overseas clients 14.8% and 0.8% respectively. Altogether, therefore, eighty three firms (21.6%) had over half their clients in one of these areas. This underestimates the true extent of the export activity taking place, however. Allowing for the possible spread of clients across these three regions and the existence of clients in the alternative city we found that in total over half (53.1%) of firms had over 50% of their clients outside of the city in which they are located. This represents a significant amount of non-local trade.

Offices which are part of large firms are likely to have a higher proportion of local clients than is the case for those in small firms while in general the more specialized is the industry/type of service provided the more likely exports, and high levels of them, are to occur. In addition, Leeds firms were more likely to have clients in Sheffield than vice versa and were also more likely to have clients elsewhere in Yorkshire and Humberside and overseas, although firms in Sheffield were slightly more likely to have clients elsewhere in the U.K.

It is apparent, therefore, that a great deal of trade in advanced producer services is taking place. This does not, however, just take the form of exports. Section 6.3.3 showed that 25.5% and 44.7% of the respondents who themselves used advanced producer services obtained them from sources elsewhere in the planning region and elsewhere in the U.K. respectively. This is partly a reflection of the corporate structure of the firms involved as multinational and U.K. company branch plants were found to be far more likely than the other types of office to obtain such services from elsewhere in the U.K.

In theoretical terms, the existence of intra-regional trade may perhaps partly be explained by central place theory. As the two metropolitan regions lie at the top of the hierarchy of centres within Yorkshire and Humberside they would be expected to sell their services, especially those of the most specialized types, to their respective hinterlands. This would also explain the finding that some Leeds firms have clients in Sheffield given that Leeds is the dominant regional centre. Contrary to the predictions of the theory, however, some Sheffield firms have clients in Leeds. In addition, the theory cannot explain the existence of trade with clients located outside the region.

Although some inter-regional trade was expected given the location quotient calculations of Chapter Five this should have been restricted to the export of financial services by firms based in Leeds. It is not. This suggests that the self-sufficiency criterion at the root of the location quotient calculations does not in fact hold. It is not necessary for a region to satisfy its own a.p.s. needs before it begins to export. This is highlighted by the finding of section 6.3.3 that some of the firms surveyed obtain supplies of a.p.s. from outside of the region.

The most significant result of this survey is, therefore, that advanced producer service firms of all types export their product. Indeed, a high proportion of firms were found to draw a majority of their clients from outside of the city in which they are located. Thus a large segment of the market for these services can be characterised as being non-local. Given this phenomenon it appears reasonable that such services should be included in the basic sector of the local economy. Advanced producer service firms generate income for the city and/or region by selling their services outside of the area in which they are located. Their role as providers of intermediate inputs into the manufacturing production process appears to have declined, however, as the service sector itself has proved to be an important source of demand for these services. Advanced producer services do not, therefore, fit into the role traditionally attributed to services within the context of export base theory.

CHAPTER SEVEN

CONCLUSION

7.1 The Export Potential of Advanced Producer Services

The evidence presented in the empirical part of this thesis strongly suggests that advanced producer services do not in fact fulfill the passive, locally orientated role prescribed for them by export base theory as it has traditionally been applied. On the contrary it suggests that advanced producer services should be included as part of the basic sector of the local economy. This is demonstrated by the following summary of our results.

Firstly, in section 4.5, the advanced producer service employment per thousand population figures for Great Britain and the planning regions revealed that this group of services are not population related as they would be expected to be if they were purely locally orientated. This is borne out by the calculation of the same figures for the metropolitan regions in section 5.3.2. Secondly, in section 4.6, an indirect test of the export potential of advanced producer services was made by regressing employment in this and the other five sector groups - primary, manufacturing, transport and distribution, social services and personal services - on gross domestic product (G.D.P.) at national and planning region level. At national level a positive relationship between advanced producer services and G.D.P. was apparent, but of course this gives no indication of causality, while the planning region results, although providing some support for this finding, were inconclusive. Thirdly, in section 5.2.2 location quotient values for advanced producer services were calculated at planning region level for 1971 and 1984. This revealed that London was massively over-represented in most advanced producer service industries, and for the a.p.s. group as a whole, in both years. It also showed the concentration of advanced producer services in the south of England as the South East, East Anglia and the SouthWest were quite frequently over-represented in individual services. In contrast, of the regions in the north only the North West for insurance and Scotland for legal services were over-represented in 1971 and

Yorkshire and Humberside in other financial services and Scotland in legal and other professional and scientific services in 1984. Tables 5.3 and 5.4 show a wide range between the highest and lowest location quotient figures for each advanced producer service industry implying that an inter-regional trade in such services exists. It should be noted, however, that the true level of this trade may be under-estimated as the location quotient method is based on the assumption that a region will become self-sufficient in an industry before it begins to export. This may not in fact be the case. Fourthly, location quotients were calculated for the metropolitan regions in the same years (section 5.3.3). Again, the over-representation of relatively few regions in advanced producer services supports the idea that some metropolitan regions export their services.

Finally, the hypothesis that advanced producer service firms export was tested by means of the survey of such firms in Leeds and Sheffield (Chapter Six). The metropolitan region location quotients (section 5.3.3) indicated that the only service for which either of these two cities was over-represented was other financial services in the case of Leeds. If the location quotients are an adequate measure of export activity, therefore, this is the only industry in which we would expect firms to sell their product outside of the city. As the results summarized in section 6.3.2 show, however, this is not the case. Despite both cities low location quotients in many individual industries and for total advanced producer services a great deal of export activity is taking place. A large majority of firms in both cities have clients outside the city and even outside of the Yorkshire and Humberside planning region. Some firms indeed contribute to exports in the wider national balance of payments sense by selling their product overseas. Differences in the level of such activity were found to exist between firms and between industries according to their individual characteristics implying that the structure of the regional advanced producer services sector may be an important determinant of its success and potential in this area. The idea of the existence of a trade in advanced producer services is further corroborated by the finding that advanced producer service firms themselves sometimes meet their advanced producer services needs from outside the region, that is they import such services (section 6.3.3)

Thus the available evidence supports the hypothesis that advanced producer services conform more closely to the characteristics expected of basic rather than non-basic industries. If such services were cast in the purely dependent role of the latter then they would sell their products to a purely local market. This is obviously not the case. Indeed, there is significant evidence that a comparatively high level of inter-regional trade in these services exists.

While the location quotient analysis showed a strong over-representation of these services in southern Britain, further examination of the markets of advanced producer service firms through the survey of firms in Leeds and Sheffield revealed that this approach seriously under-estimates the actual level of trade taking place. This is the result of the assumption that a region will become self-sufficient in an activity before it begins to export it which takes no account of factors such as the degree of specialization of services within any given industry group. The survey results, therefore, give the clearest indication of the amount of export activity actually taking place. This can be divided into three categories:- intra-regional trade, inter-regional trade and international trade. Intra-regional trade occurs when firms sell their product to clients outside of the city in which they are located but within the same planning region. Over three-quarters of the survey respondents were engaged in intra-regional trade, thus generating income for the cities in which they are based. Inter-regional trade which raises planning region, as well as city, income was found to occur at a surprisingly high level with over two-thirds of firms having clients elsewhere in the U.K. In the final category, international trade (exporting in its widest sense), nearly 15% of firms had clients overseas although these generally accounted for small proportions of the firm's total clients. That such export behaviour should be observed at all in a region, Yorkshire and Humberside, which is comparatively deficient in advanced producer services, is surprising and certainly contradicts the notion of a purely localized market for these services. If such an international trade were expected to exist at all it would be for the over-represented regions of London and the South East. In total, over half of the firms in Leeds and Sheffield (53.1%) had at least 50% of their clients and 8.4% over 90% of their clients

outside of the city in which the firm was located. This is another indication of the high level of export activity taking place.

Export activity does, however, appear to vary between firms, industries and even cities. Offices which are part of large firms are likely to have a higher proportion of local clients than is the case for those in small firms. This may be the result of the smaller geographical distance between offices (as it is likely to be more convenient for clients to maintain contacts with the local office of a firm) and/or differences in the services provided as, for example, the largest firms appear to be concentrated in those industries such as banking which also provide consumer orientated services. To test the latter point the results were disaggregated by industry. In general, it was found that, as expected, firms in the more specialized (most strongly producer orientated) industries are more likely to export their product, and to export more of it, than those in the less specialized industries.

Disaggregating by city revealed that firms in Sheffield tended to be more locally orientated than those in Leeds. This possibly reflects the perceived regional dominance of Leeds as illustrated by the finding of section 5.2.3 that advanced producer service employment in Leeds is around 50% greater than that in Sheffield. Sheffield firms were found to be more than two and a half times as likely as Leeds firms to have over 80% of their clients in their home city, while trade between the two cities was strongly balanced in favour of Leeds. Moreover, although Sheffield based firms were slightly more likely to have clients elsewhere in the U.K., Leeds based firms more frequently had higher proportions of them while also being more likely to have overseas clients. These findings also perhaps suggest that firms in Leeds may produce the more specialized types of advanced producer services which need a larger market area to be viable.

The overall trading pattern of advanced producer service firms is therefore more complex than it appeared at first sight. Even so, a considerable amount of export activity is obviously taking place. In the light of this it can be stated that advanced producer service

industries do export their product and hence should be included as part of the basic sector of the local economy.

7.2 The Sectoral Market for Advanced Producer Services

While the geographical market for advanced producer services as outlined above is of primary importance in the context of this thesis the survey results raised another point of interest with respect to the client base of firms providing such services. It was noted in section 6.2.1 that it has widely been assumed that manufacturing industry is the main, or in some cases only, source of demand for these services. More recently, however, Ley and Hutton (1987) found that this was not the case for Vancouver in Canada where most of the clients of the producer service firms they surveyed were in fact part of the service sector. This result they argued might be a 'special case' in that the region, being dependent upon the extractive industries only has a small manufacturing sector. The results of the survey of firms in Leeds and Sheffield suggest on the contrary that Ley and Hutton's findings may be more widely applicable.

Agriculture and mining accounted for small proportions of the clients of some advanced producer service firms but in almost all cases the majority of clients were found to be in the manufacturing or service sectors. Manufacturing was not, however, the dominant source of demand. Some 18.3% of firms had no manufacturing industry clients compared to just 8.1% which had no service sector clients. Similarly while fifty-one firms (14.8%) had over 90% of their clients in the service sector for manufacturing the corresponding figure was only eleven firms (3.2%). On aggregate, therefore, it appears that the service sector constitutes the main source of demand for advanced producer services in the two cities. There are, however, differences between the cities in this respect as Sheffield based firms were significantly more likely to have manufacturing industry clients, and higher proportions of them, than firms in Leeds.

The finding that the service sector is currently the strongest source of demand for advanced producer services may reflect the structural changes which the regional economy has undergone in recent years. In particular, the decline in manufacturing activity which occurred in the early to mid 1980's may have reduced the demand for advanced producer services from this source. At the same time the expansion of at least parts of the service sector may have generated new demand for these services from this sector.

This result and that of the previous section are the most significant in terms of their departure from previous work in this field. A number of other points have emerged from the analysis, however, which serve to confirm the findings of sources mentioned in the literature review of Chapter One. These are outlined in the following sections.

7.3 The Location of Advanced Producer Service Activity

The analysis of Chapter Five which explored the locational characteristics of advanced producer services confirmed the existence of large regional disparities in the level of employment in these services which were observed for Great Britain by, for example, Gillespie and Green (1987). At planning region level the dominance of London as the main centre of provision for advanced producer services is clearly apparent. The London planning region alone accounts for almost a third of Great Britain's total a.p.s. employment while the South East, London's nearest rival, accounts for only a sixth. Over the period 1971-84, however, a limited decentralization of such activity appears to have been taking place away from London but it is the adjacent regions (the South East, South West and East Anglia) which have benefitted most from this. Other regions are still performing comparatively poorly with regions outside of the south of England rarely being over-represented in any of the advanced producer service industries.

At the metropolitan region level London, as might be expected, is again dominant accounting for a much higher level of a.p.s. employment than its nearest rivals, Birmingham

and Manchester. In general, the largest metropolitan regions tend to have the highest levels of such employment although there does appear to have been some decentralization of activity from the larger to the smaller metropolitan regions and the free-standing functional regions. The largest metropolitan regions made the most substantial absolute gains in advanced producer service employment between 1971 and 1984, although the greatest increase in percentage terms often occurred for the smaller metropolitan regions. Altogether the metropolitan regions combined increased their employment in advanced producer services over this period by 660,000 jobs, over a third of which were located in London. In terms of location quotients, the South-Eastern metropolitan regions were most likely to be over-represented in the advanced producer service industries but Bristol and Edinburgh also featured strongly in this respect.

The examination of the intra-regional distribution of advanced producer service employment in section 5.2.3 reinforces the point that advanced producer service activity tends to be concentrated in the metropolitan regions and also indicates that regional hierarchies of advanced producer service employment exist. Within the metropolitan regions advanced producer services show a strong tendency to locate in the dominant functional region although between 1971 and 1984 there is evidence of a decentralisation of these services to the other relevant functional regions.

7.4 The Structure of the Advanced Producer Service Sector

It is apparent from section 6.3.1 that a dichotomy exists with respect to the structure of the advanced producer service sector. On the one hand there are the non-indigenous firms which are part of large office networks usually centred on London and the South East while on the other there are the indigenous firms which tend to be small and are often single site. Given that non-indigenous offices tend to have higher numbers of employees than indigenous ones, and are slightly more likely to have reduced their employment over the past two years,

areas with relatively high levels of such offices are vulnerable to changes initiated from outside of the area.

Although the indigenous firm sector is larger than the non-indigenous one in both cities it appears to lack strength and/or influence in the sense that head offices were rare and only fourteen of the sixty-one offices were part of firms which had more than five offices. Regardless of firm type, however, there is little doubt that the advanced producer service sector in the two cities is experiencing growth. More than half of the respondents had increased their employment in the past two years, just over ninety-five per cent expected to increase their turnover in the immediate future and just over 40% expected to diversify their services. Employment growth has tended to be strongest in the professional/scientific services industries.

It also appears that advanced producer service firms are comparatively mobile and that there is quite a high rate of new firm formation in this sector. Moves by firms were, however, found to be highly localised in nature, usually resulting from an increase in demand for the firm's services leading to a need for more space and hence company expansion. Both agglomeration effects and the existence of gaps in the market for particular services influence individual firms in choosing their location.

Differences in the corporate structure of and (re-) locational influences on the advanced producer service sector exist between Leeds and Sheffield. The latter has a proportionately larger indigenous sector and a stronger dichotomy between very small and very large firms than the former. Leeds fares best in terms of numbers employed with one in ten offices having more than fifty employees compared to one in twenty in Sheffield which also has proportionately more offices in the one to ten employees range. Leeds firms appear more mobile than those in Sheffield and are also more likely to be newly established and to have moved as the result of company expansion rather than office relocation. Sheffield also has proportionately more firms engaged in insurance, banking, accountancy

and research and development than Leeds while the reverse is true for the other industry groups. In general, therefore, Leeds seems to be slightly better represented in the more specialized a.p.s. industry groups. Consequently the findings that Leeds based offices tend to be larger in terms of their number of employees and more mobile than those in Sheffield may reflect the fact that Leeds is better represented in those industries which are exhibiting the fastest rates of growth.

Broadly speaking, therefore, the advanced producer service firms surveyed do conform to the patterns of structure predicted by the literature (see Chapter One). This completes the summary of the main findings of our research. The remainder of this chapter explores the implications for regional policy of these results.

7.5 Implications for Regional Policy

Traditionally regional policy in Britain has been very heavily orientated towards manufacturing industry through initiatives such as factory building, grants for investment in capital equipment and financial assistance in relocating to depressed areas. While theoretically at least some of these incentives were available to all firms threshold levels of job creation/relocation in order to qualify for assistance were such that service firms, which tend to be small, were ineligible. This was reinforced by the view that services were dependent upon the wealth generating activities of the manufacturing sector and hence for many years were thought to be an inappropriate target for regional policy. The accelerated decline in manufacturing employment over the past ten years has begun to lead to a reappraisal of this view, however, but there is little evidence so far that the role of advanced producer services in the economy has been recognised.

7.5.1 Service Industries and Regional Policy

Between the mid 1960's and 1979 regional policy towards services was geared primarily towards three schemes - an attempt to decentralise offices from London by establishing the Location of Offices Bureau in 1964; an attempt to stop offices being established or expanded in London and the West Midlands, and later other parts of southern England, through the use of Office Development Permits; and the introduction in 1973 of the Service Industry Removal Grants scheme. The first two of these were designed to encourage firms to move away from the more prosperous regions but in practice it appears they had little effect. Daniels (1985) points out that in the case of firms which contacted the Location of Offices Bureau some 82% of firms, accounting for 72% of jobs, which moved did so within the South East, the majority choosing locations within twenty miles of London. Although Office Development Permits were partly successful in that between 1965 and 1976 they prohibited some twenty-eight million square feet of office floorspace development (PSWP, 1986), some 30% of the total applied for, their principal effect was to raise rents. Any dispersal of office activity which resulted was unsystematic with no evidence that the offices forced to move out of central London were the ones most suitable to do so while at the same time they were again unlikely to move outside the South East. Both the Location of Offices bureau and the Office Development Permit Scheme were abolished in 1979. The Service Industry Removal Grants Scheme proved more durable, however, as it was updated in 1979 and renamed the Office and Service Industries Scheme (OSIS). The level of the job creation grants available under the scheme was raised to £6,000 per job and employee removal grants of £1,500 per job were made available to firms setting up or expanding in the Assisted Areas. It was abolished, however, in 1984 when a major rethink of regional policy was enacted.

This change in regional policy redrew the boundaries of the Assisted Areas and introduced a new Regional Development Grant (RDG). It placed greater emphasis on job creation and extended the eligibility of the service sector as for the first time services became eligible for automatic rather than discretionary regional assistance. Under the Regional

Development Grant Scheme qualifying firms can choose between a capital grant, which pays 15% eligible capital expenditure subject to a cost-per-job limit of £10,000, or a job grant, worth £3,000 for each new job created. Importantly, in the case of advanced producer service firms, small firms, defined as those employing less than two hundred people, are given preferential treatment in that they are not subject to the £10,000 cost per job limit (unless expenditure exceeds half a million pounds) and do not have to create jobs. Of the industries eligible for these grants the following fall within my definition of advanced producer services: advertising and market research, computer services, other business services (including management consultancy), research and development and a restricted number of financial services, those providing venture capital (PSWP, 1986).

In selecting the categories of firm to which the Regional Development Grant could be made available the Department of Trade and Industry chose those which were locationally mobile, of 'regional importance' and which wouldn't replace existing jobs. Similar criteria exist for accessibility to the Regional Selective Assistance Scheme to which all advanced producer services, unless explicitly provided for elsewhere, can apply for funding. Additionally, however, firms must prove that they export their services beyond the local area. This reflects the traditional export base approach underlying regional policy. Given the findings of Chapters Five and Six of this thesis this should not prove to be a barrier to at least some advanced producer service firms depending upon where the threshold level of exports is set.

This concludes the review of the regional policy initiatives which are (potentially) significant with respect to advanced producer services. Before proceeding further, however, it should be noted that there are a number of schemes for which these services might be eligible regardless of their location. In particular, the computer services industry has been targeted for assistance through, for example, the Software Products Scheme and the Computer Services Industry Training Programme (COSIT). Both supply grants to firms to help finance the development and marketing costs of new or existing software and the training and

recruitment of staff respectively. In a more general vein, the Export Credit Guarantees Department actively encourages international trade in services through the insurance of service contracts and the European Community's Transnational Consultancy scheme provides support for international co-operation between small and medium sized technical and management consultancy firms. Other possibilities include the loan guarantee scheme (except for financial and property services which are excluded), a variety of measures promoting research and development, employment and training schemes not designated by sector and industrial development assistance. In general, however, most schemes are still orientated towards manufacturing industry, the exceptions being targeted mainly towards information technology development (including computer services) and research and development, although this is itself often undertaken within manufacturing firms.

7.5.2 Advanced Producer Services and Regional Policy: Are Current Policies Sufficient?

Given the findings of Chapter Five that significant spatial inequalities in the distribution of advanced producer services exist the contribution of this sector to the prosperity of the planning regions is also likely to vary. As such services have been found to be part of the economic base regions with a deficiency of them are likely to be at a disadvantage. Indeed, apart from their direct contribution to the local economy advanced producer services play an indirect role through their incorporation in the production processes of other goods and services. Moreover, this disadvantage is likely to be cumulative as the process of growth in these services appears to be self-reinforcing. For example, London was massively over-represented in advanced producer services in both 1971 and 1984 and even though its employment growth rate for these services was slower than for many other regions it's net gain in employment was still among the largest as it started from a higher initial figure.

Overall, there is a marked tendency for advanced producer service activities to concentrate in southern England and especially in London and the South East. Given this phenomenon the schemes outlined at the end of section 7.5.1 which seek to promote growth in these services regardless of location are likely to widen regional disparities still further. It appears therefore that a policy designed to promote the growth of such services in other regions is necessary to counteract these effects. In this respect the existence of Regional Development Grants and the Regional Selective Assistance scheme may be beneficial. The mobility criteria imposed imply, however, that in practice only 'footloose' advanced producer services will be assisted and this misses at least part of the problem. As noted in section 7.4 the advanced producer service sector at least in Leeds and Sheffield, is highly dichotomised in structure with branches of large firms headquartered outside of the region on the one hand and small indigenous firms on the other. It is the latter category which most needs to be strengthened and this is unlikely to occur given the incentives available.

While local authority initiatives such as rent guarantee schemes, designation of office space and policies aimed at encouraging the expansion of local firms may help, these are no real substitute for a coherent regional policy. What then are the possible directions that such a policy could take? Firstly, such a policy would need to take a more specific account of the needs and characteristics of advanced producer services rather than merely adapting initiatives directed towards manufacturing to allow the inclusion of some types of service activity as has been done so far. This would entail the explicit recognition of the role these services play in the economy both in the direct and indirect sense. In addition given the job creation potential and relatively low capital requirements of most of this sector greater emphasis should be placed on the former. Secondly, existing schemes should be extended to include the growth of indigenous advanced producer service firms while retaining the automatic assistance element in order to speed up the administration of such schemes. Thirdly, the availability of assistance to such firms should be made more widely known as one of the problems with such schemes is the low rate of take-up. For example, in 1977 the Service Industry Removal Grant Scheme accounted for just 1% of regional aid (PSWP, 1986).

Fourthly, targeting of additional assistance could be introduced or improved to attract those services in which a region is particularly deficient or to encourage local firms to extend their range of services to provide them. Fifthly, measures could be taken to stimulate the demand for advanced producer services in the region. This could be done by promoting the services available so that local businesses become more aware of them and the way in which they could be utilized within the business; encouraging firms which already use these services but obtain them from outside the region to buy them locally; and through, say, local authorities setting an example by making use of such services.

These steps would set in motion a change in the degree of spatial inequality of advanced producer service provision. Subsequently, the existence of agglomeration economies might be expected to carry the process further, strengthening and diversifying the regional economic base. Its effects on the areas in which advanced producer services are already concentrated are unpredictable but current growth in total advanced producer service employment does not mean they would necessarily be detrimental. Indeed if they encouraged firms to move out of central London and the South East the effects on remaining firms might be beneficial in terms of reduced congestion, less pressure on office rents and less rapidly increasing costs generally.

In sum, therefore, this line of argument suggests the need for a strengthened regional policy to address the problem of the inequality of distribution of advanced producer services. Such a policy would be easier to implement at a time of relative growth in this sector as at present than perhaps it would be in the future.

Finally then, what does the future hold in store for advanced producer service firms? The most significant development on the horizon is undoubtedly the creation of the Single European market in 1992. While London as a major financial centre is relatively well placed to benefit from this initiative the reverse is true for the northern regions of Great Britain. Daniels (1985) found that producer service activity is already concentrated in the more

central areas of the Europan Community at the expense of its peripheral regions. Given that advanced producer service firms will increasingly need to compete on a European-wide rather than a national basis in future this degree of centralization is likely to remain or, more probably, increase. This will put regions like Yorkshire and Humberside at an even greater comparative disadvantage in terms of advanced producer service provision. What is needed, therefore, is a strong regional and/or local policy to counteract this trend and to assist in the development of Yorkshire and Humberside's advanced producer service sector along the lines suggested above.

BIBLIOGRAPHY

Alexander, I. (1979) "Office Location and Public Policy" Longman, London.

Andrews, R. B. (1953) "Mechanics of the Urban Economic Base: Historical Development of the Base Concept", Land Economics Vol. 29, pp 161-7.

Andrews, R. B. (1953) "Mechanics of the Urban Economic Base: The Problem of Terminology" Land Economics, Vol. 29, pp 263-8.

Andrews, R. B. (1953) "Mechanics of the Urban Economic Base: A Classification of Base Types" Land Economics, Vol. 29, pp. 343-50.

Andrews, R. B. (1954) "Mechanics of the Urban Economic Base: The Problem of Base Measurement" Land Economics, Vol 30, pp 52-60.

Andrews, R. B. (1954) "Mechanics of the Urban Base: General Problems of Base Identification" Land Economics, Vol. 30, pp 164-72.

Andrews, R. B. (1954) "Mechanics of the Urban Base: Special Problems of Base Identification" Land Economics, Vol. 30, pp. 260-9.

Andrews, R. B. (1954) "Mechanics of the Urban Base: The Problem of Base Area Delineation" Land Economics, Vol. 30, pp. 309-19.

Andrews, R. B. (1955) "Mechanics of the Urban Economic Base: The Concept of Base Ratios" Land Economics, Vol. 31, pp. 147-53.

Andrews, R. B. (1955) "Mechanics of the Urban Economic Base: Causes and Effects of Change in the Base Ratios and the Ratio Elements (I)" Land Economics, Vol. 31, pp 144-55.

Andrews, R. B. (1955) "Mechanics of the Urban Economic Base: Causes and effects of Changes in the Base Ratios and the Base Ratio Elements (II)" Land Economics, Vol. 31, pp. 245-56.

Andrews, R. B. (1955) "Mechanics of the Urban Economic Base: Causes and Effects of Change in the Base Ratios and Base Ratio Elements (III)" Land Economics, Vol. 31, pp. 361-71.

Bailley, A. S., Maillet, D., Coffey, W. J. (1987) "Service Activities and Regional Development: Some European Examples" Environment and Planning A, Vol 19, pp. 653-68.

Balchin, P. N. and Kieve, J. C. (1985) "Urban Land Economics" Third Edition, Macmillan, London.

Batey, P. W. J. (ed.) (1978) "Theory and Method in Urban and Regional Analysis" Psion, London.

Bender, L. D. (1987) "The Role of Services in Rural Development Policies" Land Economics, Vol. 63, pp 62-71.

Berry, B. J. L. (1967) "Geography of Market Centres and Retail Distribution" Prentice-Hall, New Jersey.

Beyers, W. B., and Alvine, M. J. (1985) "Export Services in Postindustrial Society" Papers of the Regional Science Association" Vol. 57, pp. 33-45.

Blackaby, F. (ed.) (1979) "De-industrialisation" Heinemann, London.

Bluestone, B., and Harrison, B. (1982) "The De-industrialisation of America", Basic Books Inc., New York.

Boudeville, J. R. (1966) "Problems of Regional Economic Planning" Edinburgh University Press, Edinburgh.

Button, K. J. (1976) "Urban Economics: Theory and Policy" Macmillan, London.

Champion, A. G., Green, A. E., Owen, D. W., Ellin, D. J. and Coombes, M. G. (1987) "Changing Places. Britain's Demographic, Economic and Social Complexion", Edward Arnold, London.

Chandler, A. D. (1977) "The Visible Hand. The Managerial Revolution in American Business" Belknap Press, London.

Channon, D. F. (1978) "The Service Industries. Strategy, Structure and Financial Performance" Macmillan, London.

Christaller, W. (1935) "Die Zentralen Orte in Suddeutschland", G. Fisher, Jena.

Coombes, M. G., Dixon, J. S., Goddard, J. B., Taylor, P. J., Openshaw, S. (1980) "Functional Regions for the 1981 Census of Britain: A User's Guide to the CURDS Definitions" CURDS Discussion Paper No. 30, University of Newcastle upon Tyne

Coombes, M. G., Dixon J. S., Goddard, J. B., Openshaw, S., and Taylor, P. J. (1981) "Appropriate Areas for Census Analysis: An Outline of Functional Regions" CURDS Discussion Paper No. 41, University of Newcastle upon Tyne.

Crum, R. E. and Gudgin, G. (1977) "Non-production Activities in U.K. Manufacturing Industry" Commission of the European Communities, Regional Policy Series No. 3, Brussels.

Cuadrado, J. (1986) "Supply and Demand of Services in Regional Development: The Case of Comunidad Valenciana (Spain), FAST Occasional Papers No. 93.

Daniels, P. W. (1982) "Service Industries: Growth and Location" Cambridge University Press, Cambridge.

Daniels, P. W. (1983a) "Business Service Offices in British Provincial Cities: Location and Control" Environment and Planning A, vol. 15, pp. 1101-1120.

Daniels, P. W. (1983b) "Service Industries: Supporting Role or Centre Stage?" Area, vol. 19, pp. 301-9.

Daniels, P. W. (1984) "Business Service Offices in Provincial Cities: Sources of Input and Destinations of Output" Tijdschriftvoor Economique en Sociale Geographie, Vol. 75, pp 123-39.

Daniels, P. W. (1985) "Service Industries: A Geographical Appraisal" Methuen, London.

Daniels, P. W. (1986a) "The Location of Foreign Banks and Metropolitan Development: London and New York" Liverpool Papers in Human Geography, University of Liverpool.

Daniels, P. W. (1986b) "Producer Services and the U. K. Space Economy" Chapter 9 in Martin and Rowthorne (eds.) "The Geography of De-industrialisation", Macmillan, London.

Daniels, P. W. (1987) "Supply and Demand for Intermediate Services: An Exploratory Study of Firms in Merseyside" Working Papers on Producer Services, No. 7, University of Bristol and University of Liverpool.

Daniels, P. W., Leyshon, A. and Thrift, W. J. (1986) "U. K. Producer Services: The International Dimension" Working Papers on Producer Services No. 1, St. David's University College, Lampeter and University of Liverpool.

Department of Employment (1970) "British Labour Statistics: Historical Abstract 1886-1968, H.M.S.O., London.

Driver, C., and Naisbitt, B. (1987) "Cyclical Variations in Service Industries' Employment in the U.K.", Applied Economics, Vol. 19, pp. 541-54.

Dunn, E. S. (1980) "The Development of the U.S. Urban System. Volume I. Concepts, Structures, Regional Shifts" John Hopkins, University Press, Baltimore.

England, J. R., Hudson, K. I., Masters, R. J., Powell, K. S., Shortridge, J. D. (1985) "Information Systems for Policy Planning in Local Government" Longman, Harlow.

Faini, R. (1984) "Increasing Returns, Non-Traded Inputs and Regional Development" Economic Journal, Vol. 94, pp. 308-23.

Fothergill, S. and Gudgin, G. (1982) "Unequal Growth, Urban and Regional Employment Change in the U.K." Heinemann, London.

Fuchs, V. R. (ed.) (1969) "Production and Productivity in the Service Industries" Columbia University Press, New York.

Gappert, G. (1979) "Post-Affluent America. The Social Economy of the Future", Franklin Walls, New York.

Gappert, G. and Knight, R. V. (1982) "Cities in the 21st Century" Sage Publications, Beverley Hills.

Gershuny, J. I. (1978) "After Industrial Society. The Emerging Self-Service Economy" Macmillan, London.

Gershuny, J. I. and Miles, I. D. (1983) "The New Service Economy (The Transformation of Employment in Industrial Societies)" Francis Pinter, London.

Gillespie, A. E. and Green, A. E. (1987) "The Changing Geography of Producer Services Employment in Britain" Regional Studies, Vol. 21, pp. 397-411.

Gillies, J. and Grigsby, W. (1956) "Classification Errors in Base-Ratio Analysis" Journal of the American Institute of Planners, Vol. 22, pp. 17-23.

Goddard, J. B. (1975) "Office Location in Urban and Regional Development" Oxford University Press, London.

Goddard, J. B. and Champion, A. G. (eds.) (1983) "The Urban and Regional Transformation of Britain" Methuen, London.

Green, A. E. (1985) "Recent Trends in the Service Sector in Tyne and Wear and Berkshire" CURDS Discussion Paper, No. 71, University of Newcastle upon Tyne.

Green, A. E. and Owen, D. W. (1985) "Has the Concentration of Producer Service Employment Increased or Decreased, 1971-81?" CURDS Discussion Paper, University of Newcastle upon Tyne.

Greenfield, H. I. (1966) "Manpower and the Growth of Producer Services", Columbia University Press, New York.

Gustafsson, B. (ed.) (1979) "Post-Industrial Society" Croom Helm, London.

Hagerstrand, T. (1966) "Aspects of the Spatial Structure of Social Communication and the Diffusion of Information" Papers and Proceedings of the Regional Science Association, vol. 16, pp. 27-42.

Hagerstrand, T. (1967) "Innovation Diffusion as a Spatial Process", Chicago University Press, U.S.A.

Hakim, C. (1982) "Secondary Analysis in Social Research" George Allen and Unwin, London.

Hansen, N. M. (1970) "Development Pole Theory in a Regional Context", Kyklos, Vol. 20, pp. 709-25.

Harris, R. I. D. (1987) "The Role of Manufacturing in Regional Growth" Regional Studies, Vol. 21, pp. 301-12.

Healey, M. (ed.) (1983) "Urban and Regional Research. The Changing U.K. Data Base" George Books, Norwich.

Hermansen, T. (1972) "Development Poles and Development Centres in National and Regional Development. Elements of a Theoretical Framework", Chapter One in A. R. Kuklinski (ed.) "Growth Poles and Growth Centres in Regional Planning" Mouton, The Hague.

Hirschman, A. O. (1958) "The Strategy of Economic Development" Yale University Press, New Haven.

Hoinville, G., Jowell, R. and Associates (1972) "Survey Research Practice" Heinemann, London.

Hubbard, R. K. B. and Nutter, D. S. (1982) "Service Sector Employment in Merseyside" Geoforum, Vol. 13, pp. 209-35.

Isard, W. (1956) "Location and Space Economy" M.I.T. Press, Cambridge, Massachusetts.

Isserman, A. M. (1975) "Regional Employment Multiplier: A New Approach: Comment" Land Economics, Vol. 51, pp. 290-3.

Kaldor, N. (1970) "The Case for Regional Policies", Scottish Journal of Political Economy, Vol. 17, pp. 337-47.

Kuklinski, A. R. (1972) "Growth Poles and Growth Centres in Regional Planning", Monton, The Hague.

Leahy, W. M., McKee, D. L. and Dean, R. D. (eds.) (1970) "Urban Economies", The Free Press, Macmillan Co., New York.

Leigh, R. (1970) "The Use of Location Quotients in Urban Economic Base Studies" Land Economics, Vol. 46, pp. 202-5.

Lewis, W. C. (1972) "A Critical Examination of the Export-Base Theory of Urban-Regional Growth" Annals of Regional Science, Vol. 6, pp. 15-25.

Ley, D. and Hutton, T. (1987) "Vancouver's Corporate Complex and Producer Service Sector: Linkages and Divergence Within a Provincial Staple Economy" Regional Studies, Vol. 21, pp. 413-24.

Leyshon, A., Daniels, P. W. and Thrift, N. J. (1987) "Large Accountancy Firms in the U.K.: Operational Adaptation and Spatial Development" Working Papers on Producer Services, No. 2, St. David's University College, Lampeter and University of Liverpool.

Losch, A. (1944) "Die raumliche Ordnang der Wirtschaft", G. Fisher, Jena.

McKee, D. C., Dean, R. D., Leahy, W. H. (eds.) (1970) "Regional Economics: Theory and Practice", Free Press, New York.

Malcolm, J. (1979) "Manufacturing and Service Industries in Inner Cities" Discussion Paper No. 30, Centre for Urban and Regional Research, University of Glasgow.

Marquand, J. M. (1979) "The Service (Tertiary) Sector and Regional Policy in the U.K.", Research Series, 29, Centre for Environmental Studies, London.

Marquand, J. M. (1983) "The Changing Distribution of Service Employment" Chapter 5 in Goddard, J. B. and Champion, A. G (eds.) "The Urban and Regional Transformation of Britain" Methuen, London.

Marshall, J. N. (1979) "Ownership, Organisation and Industrial Linkage: A Case Study in the Northern Region of England", Regional Studies, Vol. 13, pp. 531-557.

Marshall, J. N. (1980) "Spatial Variations in Manufacturing Industry Demand for Business Services: Some Implications for Government Economic Policies", CURDS Discussion Paper No. 35, University of Newcastle-upon-Tyne.

Marshall, J. N. (1981) "Business Service Activities in Provincial Conurbations: Implications for Regional Economic Development", CURDS Discussion paper No. 37, University of Newcastle-upon-Tyne.

Marshall, J. N. (1982a) "Linkages Between Manufacturing Industry and Business Services", Environment and Planning A, Vol. 14, pp. 1523-40.

Marshall, J. N. (1982b) "Corporate Organisation of the Business Service Sector" CURDS Discussion Paper No. 43, University of Newcastle-upon-Tyne.

Marshall, J. N. (1983) "Business Service Activities in British Provincial Conurbations" Environment and Planning A, volume 15, pp. 1343-1359.

Marshall, J. N. (1984) "Information Technology Changes Corporate Office Activity", Geo Journal, Vol. 9, pp. 171-8.

Marshall, J. N. (1985a) "Research Policy and Review 4. "Services in the Postindustrial Economy" Environment and Planning A, vol. 17, pp 1155-1167.

Marshall, J. N. (1985b) "Business Services, The Regions and Regional Policy" Regional Studies, vol. 19, pp. 353-63.

Marshall, J. N. and Bachtler, J. F. (1984) "Spatial Perspectives on Technological Changes in the Banking Sector of the U.K.", Environment and Planning A, Vol. 16, pp. 437-50.

Marshall, J. N. and Bachtler, J. F. (1987) "Services and Regional Policy", Regional Studies, Vol. 21, pp. 471-5.

Marshall, J. N., Damesick, P. and Wood, P. (1987) "Understanding the Location and Role of Producer Services" Environment and Planning A, vol. 19, pp. 575-96.

Massey, D. B. (1973) "The Basic: Service Categorisation in Planning" Regional Studies, Vol. 7, pp. 1-15.

Mathur, V. K. and Rosen, H. S. (1974) "Regional Employment Multiplier: a New Approach" Land Economics, Vol. 50, pp. 93-6.

Matilla, J. M. and Thompson, W. R. (1955) "Measurement of the Economic Base of the Metropolitan Area" Land Economics, Vol. 31, pp. 215-28.

Moody, H. R. and Puffer, H. W. (1970) "The Empirical Verification of the Urban Base Multiplier: Traditional and Adjustment Process Models" Land Economics, Vol. 46, pp. 91-8.

Moses, L. and Williamson, H. F. (1970) "The Location of Economic Activity in Cities" Chapter 5 in Leahy, W. M., McKee, D. C. and Dean, R. D., "Urban Economics" Macmillan, New York.

Muth, R. F. (1975) "Urban Economic Problems" Harper and Row, New York.

Myrdal, G. (1957) "Economic Theory and Underdeveloped Regions", Duckworth, London.

Noyelle, T. J. (1983a) "The Implications of Industry Restructuring for Spatial Organisation in the United States". Chapter 8 in Moulaert, F. and Sabinas, P. "Regional Analysis and the New International Division of Labour" Kluwer Nijhoff Publishing, Boston.

Noyelle, T. J. (1983b) "The Rise of Advanced Services. Some Implications for Economic Development in U. S. Cities" American Planning Association Journal, Vol. 49. pp. 280-90.

Noyelle, T. J. and Stanback, T. M. (1984) "The Economic Transformation of American Cities" Rowman and Allanheld, Totowa, New Jersey.

Pederson, P. O. (1986) "Business Service Strategies: The Case of the Provincial Centre of Esbjerg" Commission for the European Communities, Fast Series No. 19, Brussels.

Perroux, F. (1955) "Note sur La Notion de 'pole de croissance", Economie Applique, Vol. 8.

Polese, M. (1982) "Regional Demand for Business Services and Inter-regional Service Flows in a Small Canadian Region" Papers of the Regional Science Association, Vol. 50, pp. 151-63.

Pratt, R. T. (1968) "An Appraisal of the Minimum Requirements Technique", Economic Geography, vol. 44, pp. 117-124.

Producer Services Working Party (1986) "Uneven Development in the Service Economy Understanding the Location and Role of Producer Services", Report presented at the Institute of British Geographers Services and Area Development Conference, University of Liverpool.

Ray, G. F. (1986) "Services for Manufacturing" National Institute Economic Review, No. 117, pp. 30-33.

Richardson, H. W. (1973) "Regional Growth Theory", Macmillan, London.

Richardson, H. W. (1979) "Regional and Urban Economics", Pitman, London.

Richardson, H. W. (1978) "Urban Economics" Dryden Press, Illinois.

Singelmann, J. (1978) "From Agriculture to Services. The Transformation of Industrial Employment" Sage Publications, Beverley Hills.

Singer, P. (1971) "Forsa de trabalho e empregno no Brasil: 1920-1969" Cadernos, CEBRAP3, Sao Paulo.

Stanback, T. M. (1979) "Understanding the Service Economy. Employment, Productivity, Location" John Hopkins University Press, Baltimore.

Stanback, T. M., Bearse, P. J., Noyelle, T. J. and Karasek, R. A. (1981). "Services?The New Economy" Rowman and Allanheld, Totowa, New Jersey.

Stanback, T. M. and Noyelle, T. J. (1982) "Cities in Transition" Allanheld, Osmun and Co., New Jersey.

Steele, D. B. (1969) "Regional Multipliers in Great Britain", Oxford Economic Papers, Vol 21, pp. 268-92.

Thomas, M. D. (1964) "The Export Base and Development Stages Theories of Regional Economic Growth: An Appraisal" Land Economics, Vol 11, pp. 421-32.

Thompson, G. E. (1959) "An Investigation of the Local Employment Multiplier" Review of Economics and Statistics, Vol. 41, pp. 61-7.

Thrift, N. J. (1986) "The Internationalisation of Producer Services and the Integration of the Pacific Basin Property Market" in Taylor, M. J. and thrift, N. J. (eds.) "Multinationals and the Restructuring of the World Economy", Croom Helm, London.

Ullman, E. L. (1969) "Minimum Requirements after a Decade: A Critique and an Appraisal" Economic Geography, Vol. 42.

Ullman, E. L., and Dacey, M. F. (1960) "The Minimum Requirements Approach to the Urban Economic Base" Papers and Proceedings of the Regional Science Association, Vol. 6, pp. 175-94.

Van Dinteren, J. H. J. (1987) "The Role of Business Service Offices in the Economy of Medium-Sized Cities" Environment and Planning A, Vol. 19, pp. 669-686.

Vickerman, R. W. (1984) "Urban Economies" Philip Allan, Oxford.

Weiss, S. J. and Gooding, E. C. (1968) "Estimation of Differential Employment Multipliers in a Small Regional Economy", Land Economics, Vol. 44, pp. 235-44.

Whiteman, J. (1981) "The Services Sector - A Poor Relation?" A Review of its Role, Peformance and Prospects in the U.K." Discussion Paper No. 8, National Economic Development Office, London.

Wood, P. A. (1983) "The Regional Significance of Manufacturing - Service Sector Links: Some thoughts on the Revival of London's Docklands". Chapter 13 in Barr, B. M. and Waters, N. M. "Regional Diversification and Structural Change" Tantalus Research Vancouver.

Wood, P. A. (1986) "The Anatomy of Job Loss and Job Creation: Some Speculations on the Role of the 'Producer Service' Sector" Regional Studies, Vol. 20, pp. 37-46.

Wood, P. A. (1987) "Producer Services and Economic Change: Some Canadian Evidence", Discussion Paper, University College, London.

APPENDIX A: THE DATA

Up until 1968 employment statistics were published at Minimum List heading level, that is for individual industries, (see Department of Employment, 1970) but since then have only been publicly available at Order or Division level of the Standard Industrial Classification (S.I.C.). These groups are too large to allow analysis of individual service industries which may at least partly explain why such industries have been comparatively neglected.

For the last two years, however, the Department of Employment has allowed limited access to its employment data base. Thus the figures on which the analysis of Chapters Four and Five are based have been obtained from the Training (formerly Manpower Services) Commission's National On-Line Manpower Information System (N.O.M.I.S.) which is based at the University of Durham. This database takes the form of the ERII records for the 1968 S.I.C. for 1971-78 (June of each year) and September 1981 at Minimum List Heading level to which have recently been added the figures for September 1981 and September 1984 at Activity Heading level of the 1980 S.I.C. Over the period covered by these statistics two important changes have been made in the way in which they are collected: firstly, they are now obtained on a triennial rather than an annual basis and, secondly, for the 1984 Census of Employment all workplaces with twenty-five or more employees were surveyed but for those with less than this number a sample, structured by size of workplace and industrial activity, was taken. As a result of these changes there is a loss of continuity and also a (potential) loss of accuracy. The figures are available for total employment in each industry and also for the full-time/part-time and male/female divisions and their associated combinations as well. They are also available for a range of geographical areas including job centre areas, travel-to-work areas, functional and planning regions.

The analysis of Chapters Four and Five is based on the latter two types of area, functional and planning regions. While planning regions have been widely used and so do not require further explanation this is not the case for functional regions. I will, therefore, give a brief outline of the nature of these which are explicitly defined by Coombes et al. (1980, 1981).

Coombes et al use a computer based procedure to find a system of classification which meets the criteria they set out - that the definition of the region be easily replicable and be free from errors of inconsistency and operator bias which they associate with manual methods of area definition. Using the 1971 data for total population, a 10% sample of the employment figures and the journey-to-work matrix for local authority areas they undertake a number of steps to define shop/work centres. They then maximise system closure by amalgamating those centres where 10% or more of the residents in employment commute between them and consolidate the centres so that areas which are both shop and work centres form the core areas. The hinterlands of these core areas are then assigned on the basis that they send over 15% of their residents in employment to the core areas.

The system produces twenty Metropolitan Regions each with a Dominant Functional Region and a number of Sub-Dominant Functional Regions (ninety-three in total) and one hundred and fifteen Free Standing Functional Regions.

APPENDIX B: SURVEY REPORT

1) Purpose of Survey

To examine the advanced producer service industries contribution to urban and regional growth while gaining a further insight into the nature and behaviour of such services and those firms which provide them. In particular in the light of export base theory the survey is designed to measure the degree to which firms in these industries sell their product to customers outside of their immediate metropolitan and planning regions. This is to test the hypothesis that advanced producer services are traded between regions so that this export behaviour differentiates them from other services. Further, if the hypothesis holds then the firms concerned are through their activities generating income for, and employment in, the region in which they are based. Thus they make a direct contribution to regional G.D.P. and growth.

2) Specification of the Frame

i) Geographical Area

Two distinct geographical areas are included in the survey for comparative purposes - the Leeds and Sheffield Metropolitan Regions as defined by Coombes et al (1981) [see Appendix A]. Together these account for around 50% of a.p.s. employment in the Yorkshire and Humberside Planning Region (see section 5.2.3). Despite being similar in population size Leeds has almost 50% more a.p.s. employment than Sheffield. Thus an examination of the structure of a.p.s. employment in the two cities may provide important information regarding the locational propensities of a.p.s. and the interaction between centres resulting from this type of activity.

ii) The Sampling Units

The sample units for the survey are individual offices of a.p.s. providing firms in each city. In the case of firms with multiple offices in a city all are included in the sample frame.

iii) Source of the Frame

Several possible sources of data for the frame were considered including specialised publications, industry lists, company directories such as Kompass and Kelly's Business Directory, and telephone directories. It was decided, however, to use the Yellow Pages telephone directories for Leeds and Sheffield for the following reasons:

a) they were the most up to date publications available which is important to minimise the non-response rate occurring due to firms which have left their listed office;

b) they provide the best localised source of information as many of the other possible sources only list head or regional offices of firms not those at a more local level thus eliminating a whole category of possible survey respondents;

c) sources such as Kelly's directory were found to be biased towards large firms while the Yellow Pages directory is not, covering a range from one-person firms, for example self-employed accountants, to multinational companies; and

d) while industry lists are freely available for some a.p.s. industries, for example banking, for others, such as other business services, they are difficult to obtain.

Thus the use of the Yellow Pages telephone directories appears to overcome the principal deficiencies of the other possible sources of information. It has, however, the drawback of providing only very limited information about the firms but a good indication of the activities of a firm is given by the heading(s) under which it is listed while its corporate structure can be elicited from the survey responses.

iv) The Survey Frame

Referring back to the list of industries specified as being advanced producer services in section 2.4 certain points need to be made to clarify the exact nature of the frame. Firstly, telecommunications and postal services were excluded from the survey as their near-monopoly status differentiates them from the other industries in the group and would make them clearly identifiable among the responses. Secondly, the activities to be surveyed in the

'other' financial institutions, business services and professional and scientific services groups need to be specified. Finance brokers and consultants, investment brokers and consultants, factoring companies and credit and finance companies were included as representative of the other financial institutions group; computer services, management consultancy and secretarial and office services for the other business services group; and architectural services and consulting engineers for the other professional and scientific services group.

Altogether, therefore, the survey population/sampling frame for Leeds and Sheffield in terms of the number of firms in each category was as follows:

Industry Group	Sheffield	Leeds
Insurance	174	239
Banking	132	134
Other financial institutions	58	117
Owning and dealing in real estate	63	110
Advertising and market research	55	92
Other business services	62	106
Accountancy services	110	138
Legal services	76	130
Research and development	12	15
Other professional and scientific services	63	112
	805	1193

3) **Design of the Survey**

i) The Sample

Given the relatively small total number of firms (1,993) in the a.p.s. industries a 50% sample was deemed feasible which even if the response rate was low would provide a satisfactory coverage of firms in the a.p.s. sector. The sample was selected randomly for each of the two cities and the chosen industries with every second firm's name being included in

the sample, the starting point being chosen through the use of a random number. Stratification of the sample by firm size was not possible due to lack of information but given the size and coverage of the sample this should not, and in fact did not, prove to be a problem.

ii) The Survey Questionnaire

A postal survey was carried out of the selected firms who were asked to complete the attached questionnaire. In order to test the questionnaire a pilot survey of forty-seven Sheffield firms in nine a.p.s. industries was undertaken which yielded a response rate of fifty-five per cent. The responses indicated that there were no serious problems with the questionnaire which elicited the required information with little difficulty. Thus the larger scale survey was carried out with only a few minor adjustments, principally in the wording, to the questionnaire.

Section A was designed to make sure that the firm completing the questionnaire did in fact operate in an a.p.s. industry; section B to examine the corporate structure and employment profile of the firm; section C to shed light on the locational characteristics of firms in this sector; section D to examine the type and location of the firm's clients; and section E to discover if a.p.s. firms use a.p.s. themselves and if so where their suppliers were located.

4) **Response to the Survey**

The initial mail shot was followed by reminder letters to those firms who had not returned the questionnaire within three weeks of it being sent out. In all out of the 1,000

Table B.1 Survey Response by City and Industry

Industry	Response rate (percentages)		
	Leeds	Sheffield	Total
Insurance	36.7	47.3	41.2
Banking	31.3	40.9	36.1
Other financial institutions	42.4	27.3	37.0
Owning and dealing in real estate	58.2	40.6	51.7
Advertising and market research	54.3	50.0	52.7
Other business services	60.4	51.6	57.1
Accountancy	36.2	41.8	38.7
Legal services	24.6	44.7	32.0
Research and Development	50.0	66.7	57.1
Other professional and scientific services	51.8	56.3	53.4

firms surveyed 430 (43%) responded. Of these 250 were located in Leeds and 180 in Sheffield so that the response rates for the two cities were 41.8% and 44.7% respectively. Overall therefore, the respondents accounted for just over 20% of all a.p.s. firms in the surveyed industries.

Among the non-respondents were firms which had moved their office or ceased to trade, some who sent back the questionnaire indicating that they explicitly did not wish to participate in the survey and those which provided information too limited to be reasonably incorporated in the survey results. Thus the non-response can be broken down as follows:

	Leeds	Sheffield	Total
Gone away	16 (2.7%)	51 (12.7%)	67 (6.7%)
Refused to answer	29 (4.9%)	23 (5.7%)	52 (5.2%)
Limited information	15 (2.5%)	8 (2.0%)	23 (2.3%)
No response	287 (48.1%)	141 (35.0%)	428(42.8%)

The response and category of non-response rates appear fairly evenly divided between the two cities the principal difference resulting from the number of firms which had 'gone away'. this is probably the result of the fact that a less up to date telephone directory had to be used for Sheffield in which case a higher number of firms in this category is to be expected.

Table B1 shows the breakdown of response by city and industry from which differences in the response rates are apparent. At industry level the highest response rate in Leeds was 60.4% for other business services, in Sheffield 66.7% for research and development and for the two cities combined 57.1% for both other business services and research and development. The lowest response rates were for legal services in Leeds, other financial institutions in Sheffield and legal services for the two cities combined. In general, the response rates are lowest for those industries which also provide services to individual consumers, possibly because the firms involved felt the survey to be less relevant to them.

5) **The Problem of Non-response**

Although at 43.0% the response rate was better than expected for this type of survey it is still necessary to ensure that the survey response is unbiased. In order to do so two steps were carried out. Firstly, when the reminder letters were sent out firms which did not wish to fill in the whole questionnaire were asked to answer the first two questions only, those relating to service type and corporate status. Unfortunately, however, only twenty-three (those in the 'limited information' category above) did so, too small a number to be reliable. The second step was to conduct a 10% telephone survey of non-respondents which proved to be more successful. This again covered the type of service they provided and their corporate structure. All the firms questioned proved to be active in the industry in which they had initially been categorised so that corporate structure appeared as the best indicator of the representativeness of the respondents. The results for the telephone survey were as follows:

	Sheffield		Leeds		All	
	Frequency	%	Frequency	%	Frequency	%
Multinational branch	1	4.5	2	5.7	3	5.3
U. K. company branch	5	22.7	12	34.3	17	29.8
Local company branch	3	13.6	2	5.7	5	8.8
Single site firm	8	36.4	16	45.7	24	42.1
Head office	1	4.5	0	0	1	1.8
Refused to answer	4	18.2	3	8.6	7	12.3
	22	100.0	35	100.0	57	100.0

This compares with the results from the survey respondents and those firms which provided limited information (the postal non-respondents) as follows (totals only).

	Respondents		Postal non-respondents	
	Frequency	%	Frequency	%
Multinational branch	63	14.7	3	13.0
U.K. company branch	108	25.1	4	17.4
Local company branch	37	8.6	2	8.9
Single site firm	193	44.9	12	52.2
Head office	25	5.8	2	8.7
Refused to answer/ unclear answer	4	0.9	0	0
	430	100.0	23	100.0

It appears from this analysis of corporate status that multinational branches and head offices might be over-represented in the survey returns. However, a number of these may have been among those who refused to participate in the telephone survey. Otherwise, the differences in the figures are within acceptable limits and indeed if the figures for the telephone survey and the postal non-respondents are combined, making a total of 14.2% of all non-respondents the figures are still closer to those for the respondents - 7.5%, 26.25%, 8.75%, 45.0%, 3.75% and 8.75% respectively. Thus there appears to be no evidence of a significant bias in the sample.

Name of Firm:

Name of person completing questionnaire:

Position in firm:

Please answer as many of the following questions as possible. All information will be treated as strictly confidential:

Section A: Type of Service

Q1 Which of the following type(s) of service(s) does your firm provide (please tick):

(NB: where your firm provides more than one type of service please estimate the percentage of your business provided by each if possible)

accountancy
advertising/market research
architectural services
banking - commercial (ie corporate accounts)
banking - other (ie personal accounts)
computer services/systems
financial/investment services (to companies)
financial/investment services (to individuals)
insurance - commercial (ie specifically for firms)
insurance - other (ie personal policies)
legal services - to corporate clients
legal services - to individuals
management/business consultancy
property dealing - commercial/industrial premises
property dealing - housing/estate agency
research and development facilities
secretarial/office services
surveying
engineering - consultancy
other (please specify)

Section B: Office Status

Q2 Is your office:

a branch of a multinational company	(go to Q3)
a branch of a national (UK) company	(go to Q3)
a branch of a locally based company	(go to Q3)
an independent single site firm	(go to Q5)
a company head office	(go to Q4)

Q3 Where is your company head office located?

London
elsewhere in UK (please specify)
overseas (please specify)

Q4 How many offices are there in your company?

If you are uncertain of, or unwilling to give, exact number please tick the appropriate group below:

5 or less
6-10
11-20
21-50
over 50

Q5 How many employees are there in your office?

Again, if you are unable/unwilling to give the exact number please indicate the appropriate group below 5 or less:

6-10
11-20
21-50
over 50

Q6 How many employees were there in your office two years ago?

If you are unable to give the exact number please estimate if there were:

a) more
b) less
c) about the same number

Q7 How many, or what percentage, of your office's staff fall into each of the following categories?

	Number	Percentage
managerial		
specialist/technical		
secretarial/clerical		

Q8 How many, or what percentage, of your office's staff fall into each of the following categories?

	Number	Percentage
male full-time		
female full-time		
male part-time		
female part-time		

Section C: Office Location

Q9 How long has your office been located at its present site?

less than five years (go to Q10)
five years or more (go to Q13)

Q10 Why was your office opened at its present location?

newly established firm	(go to Q12)
company expansion	(go to Q12)
relocation of existing office	(go to Q11)
other (please specify)	(go to Q12)

Q11 In which town/city was your office previously located? (If in the same city please give the district)

Q12 Did any of the following factors influence your location decision? (delete as applicable)

a) The area was already used by firms providing similar services to yours. YES/NO

b) There were very few or no firms supplying your type of services in the area. YES/NO

c) An increase in demand for your services. YES/NO

d) Other (please specify).

Q13 Are you considering relocating your office? YES/NO

If yes:

a) Are you thinking of moving to another town/city. YES/NO

b) If you answered yes to (a) please indicate to which town/city you are intending to move.

c) Please give reasons for your decision to relocate.

Section D: Clientele

For the following four questions please either give the actual numbers in the first row of the table or tick the appropriate percentage groups in each case.

Q14 How many/what percentage of your clients fall into the following categories?

(NB: as a rough guide a small firm can be defined as one with less than 20 employees or a maximum of 2 offices; a medium sized firm as one with between 20 and 75 employees and a large firm as one with over 75 employees)

Number:	individuals	small firms	medium firms	large firms	multinationals
0%					
1-10%					
11-20%					
21-30%					
31-40%					
41-50%					
51-60%					
61-70%					
71-80%					
81-90%					
over 90%					

Q15 How many/what percentage of your clients fall into the following sectors?

Number:	agricultural	mining	manufacturing	services
0%				
1-10%				
11-20%				
21-30%				
31-40%				
41-50%				
51-60%				
61-70%				
71-80%				
81-90%				
over 90%				

Q16 How many/what percentage of your clients fall into the following categories?

	Private Sector	Nationalised Industries	Local or National Government
Number:			
0%			
1-10%			
11-20%			
21-30%			
31-40%			
41-50%			
51-60%			
61-70%			
71-80%			
81-90%			
over 90%			

Q17 How many/what percentage of your clients are located in the following areas?

	Sheffield	Leeds	Elsewhere in Yorkshire or Humberside	Elsewhere in UK	Overseas
Number:					
0%					
1-10%					
11-20%					
21-30%					
31-40%					
41-50%					
51-60%					
61-70%					
71-80%					
81-90%					
over 90%					

Q18 Over the next two years do you expect to:

increase
decrease

your business (turnover)?

Q19 Over the next two years do you expect to:

a) Diversify your services?
b) Provide a more limited range of services?
c) Continue providing the same services?

Section E: Your Firm as a User of Services

Q20 Which, if any, of the following services are supplied to your office from within your company or by outside firms?

	Own Firm	Outside Firm
advertising/market research		
architectural services		
banking		
computer services		
financial services (other than banking)		
insurance		
legal services		
management consultancy		
property dealing		
research and development facilities		
secretarial/office services		

Q21 How many/what percentage of the outside firms which supply these services to you are located in the following areas?

Number:	Sheffield	Leeds	Elsewhere in Yorkshire or Humberside	Elsewhere in UK
0%				
1-10%				
11-20%				
21-30%				
31-40%				
41-50%				
51-60%				
61-70%				
71-80%				
81-90%				
over 90%				

Q22 If requested would you be prepared to take part in an interview survey? YES/NO

Thank you for co-operating with this survey. Please use the space provided below for any additional comments you would like to make regarding it.

Table C1 Respondents by Office Type

	Number	Percentage
Multinational branches	63	14.7
U.K. company branches	108	25.1
Local company branches	37	8.6
Single site firms	193	44.9
Head offices	25	5.8
No response	4	0.9
	430	100.0

Table C2 Non-indigenous firms and Local Company Branches: Head Office Location

	London	U.K	Overseas
Multinational branches	39(61.9%)	17(27.0%)	7(11.1%)
U.K. company branches	49(45.4%)	59(54.6%)	-
Local company branches	-	37(100%)	-

Table C3 Office Type by Company Size

	Number of offices in firm				
	5 or less	6-10	11-20	20-50	>50
Non-indigenous:					
Multinational branches	3(4.8%)	5(7.9%)	2(3.2%)	11(17.5%)	41(65.1%)
U.K. company branches	17(15.7%)	24(22.2%)	8(7.4%)	19(17.6%)	39(36.1%)
Indigenous:					
Local company branches	25(67.6%)	6(16.2%)	3(8.1%)	1(2.7%)	1(2.7%)
Single site firms	-	-	-	-	-
Head offices	22(88%)	2(8%)	-	-	1(4%)

Table C4 Office Type by Number of Employees

	Number of employees in office				
	5 or less	6-10	11-20	20-50	>50
Multinational branches	9(14.3%)	13(20.6%)	18(28.6%)	10(15.9%)	12(19.1%)
U.K. company branches	19(17.6%)	31(28.7%)	30(27.8%)	18(16.7%)	10(9.3%)
Local company branches	13(35.1%)	9(24.3%)	4(10.8%)	7(18.9%)	4(10.8%)
Single site firms	84(43.5%)	65(33.7%)	24(12.4%)	16(8.3%)	3(1.6%)
Head offices	5(20%)	5(20%)	3(12%)	7(28%)	5(20%)

Table C5 Growth Prospects: Past Employment and Expectations of Future Turnover and Range of Service Provision

Over the past two years has your employment	Increased	Decreased	Remained the same?
Number of firms	220	32	153
Percentage of respondents	54.3	7.9	37.8

Do you expect your turnover to	Increase	Decrease	Remain the same?
Number of firms	390	12	6
Percentage	95.6	2.9	1.5

Do you expect to range of services?	Diversify	Restrict	Provide the same
Number of firms	162	12	222
Percentage	40.9	3.0	56.1

Table C6 Male/Female, Full Time/Part Time Breakdown of Employment

Proportion of total staff	Number of firms in each category			
	Male Full Time	Female Full Time	Female Part Time	Male Part Time
None	25	49	172	339
1-10%	5	14	67	18
11-20%	33	43	63	14
21-30%	37	46	30	6
31-40%	64	56	15	2
41-50%	75	86	13	4
51-60%	40	32	6	0
61-70%	35	30	9	0
71-80%	39	17	2	1
81-90%	20	6	1	0
+90%	11	5	6	0
No response	46	46	46	46
	430	430	430	430

Table C7 Managerial, Specialist, Clerical Breakdown of Employment

Proportion of total staff	Number of firms in each category		
	Managerial	Specialist	Clerical
None	55	117	17
1-10%	65	10	20
11-20%	112	31	62
21-30%	68	29	52
31-40%	48	45	64
41-50%	28	52	48
51-60%	4	31	27
61-70%	5	35	27
71-80%	2	29	43
81-90%	0	10	14
+90%	6	4	19
No response	37	37	37
	430	430	430

Table C8 Crosstabulation of Total by Previous Office Employment

Current Employment	Not Applicable	Employment Two Years Ago More	Less	Same
5 or less	14(10.7%)	9(6.9%)	38(29.0%)	68(51.9%)
6-10	5(4.0%)	8(6.3%)	75(59.5%)	38(30.2%)
11-20	1(1.3%)	10(12.7%)	46(58.2%)	22(27.8%)
21-50	0(0%)	2(3.4%)	40(69.0%)	16(27.6%)
+50	1(2.9%)	3(8.8%)	21(61.8%)	9(26.5%)

Table C9 Change in Employment by Industry Group

Industry	More	Less	Same	No Response	Total
		Employment Two Years Ago			
Accountancy	1(1.8%)	28(50%)	22(39.3%)	5(8.9%)	56
Advertising	4(9.1%)	25(56.8%)	13(29.5%)	2(4.6%)	44
Architectural	1(3.2%)	19(61.3%)	8(25.8%)	3(9.7%)	31
Corporate Banking	6(13.6%)	17(38.6%)	18(40.9%)	3(6.8%)	44
Personal Banking	6(12%)	18(36%)	22(44%)	4(8%)	50
Computer services	2(4.6%)	26(59.1%)	14(31.8%)	2(4.6%)	44
Corporate finance	10(9.7%)	51(49.5%)	34(33.0%)	8(7.8%)	103
Personal finance	11(8.3%)	63(47.7%)	50(37.9%)	8(6.1%)	132
Corporate insurance	11(13.1%)	40(47.6%)	30(35.7%)	3(3.6%)	84
Personal insurance	12(9.4%)	64(50%)	46(35.9%)	6(4.7%)	128
Corporate legal	3(9.4%)	19(59.4%)	10(31.3%)	0	32
Personal legal	3(8.3%)	21(58.3%)	10(27.8%)	2(5.6%)	36
Management consultancy	5(9.1%)	30(54.5%)	15(27.3%)	5(9.1%)	55
Corporate property	5(14.7%)	18(52.9%)	8(23.6%)	3(8.8%)	34
Personal property	4(12.5%)	14(43.8%)	10(31.2%)	4(12.5%)	32
Research and Dev.	1(14.3%)	4(57.1%)	2(28.6%)	0	7
Secretarial	2(12.5%)	9(56.3%)	4(25%)	1(6.2%)	16
Surveying	5(14.7%)	17(50%)	11(32.4%)	1(2.9%)	34
Consultant Engineering	0	6(40%)	8(53.3%)	1(6.7%)	15
Other	1(2.9%)	19(55.9%)	12(35.3%)	2(5.9%)	34

Table C10 Expected Provision of Services by Industry Group

Industry	Service Expectations: Diversify	Restrict Services	Same	No Response	Total
Accountancy	22(39.3%)	1(1.8%)	28(50%)	4(7.1%)	56
Advertising	20(45.5%)	2(4.5%)	17(38.6%)	5(11.4%)	44
Architectural	11(35.5%)	2(6.5%)	17(54.8%)	1(3.2%)	31
Corporate Banking	25(56.8%)	0	16(36.4%)	3(6.8%)	44
Personal Banking	27(54%)	0	20(40%)	3(6%)	50
Computer Services	21(47.7%)	1(2.3%)	17(38.6%)	5(11.4%)	44
Corporate finance	41(39.8%)	5(4.9%)	53(51.5%)	4(3.9%)	103
Personal finance	50(37.9%)	6(4.5%)	70(53%)	6(4.5%)	132
Corporate insurance	33(39.3%)	4(4.8%)	42(50%)	5(6%)	84
Personal insurance	47(36.7%)	4(3.1%)	71(55.5%)	6(4.7%)	128
Corporate legal	11(34.4%)	0	18(56.3%)	3(9.4%)	32
Personal legal	12(33.3%)	1(2.8%)	20(55.6%)	3(8.3%)	36
Management consultancy	23(41.8%)	1(1.8%)	27(49.1%)	4(7.3%)	55
Corporate property	13(38.2%)	0	15(44.1%)	6(17.6%)	34
Personal property	12(37.5%)	1(3.1%)	14(43.8%)	4(12.5%)	32
Research and Development	5(71.4%)	0	2(28.6%)	0	7
Secretarial	8(50%)	2(12.5%)	6(37.5%)	0	16
Surveying	12(35.3%)	1(2.9%)	17(50%)	4(11.8%)	34
Consultant Engineering	4(26.7%)	1(6.7%)	8(53.3%)	2(13.3%)	15
Other	15(44.1%)	0	17(50%)	2(5.9%)	34

Table C11 Differences in Corporate Organisation Between Industries

Industry	Multinational branch	U.K. co. branch	Local co. branch	Single site firm	Head Office
Accountancy	6(10.7%)	3(5.4%)	4(7.1%)	41(73.2%)	2(3.6%)
Advertising	1(2.3%)	8(18.2%)	2(4.5%)	30(68.2%)	3(6.8%)
Architectural	3(9.7%)	5(16.1%)	2(6.5%)	18(58.1%)	3(9.7%)
Corporate banking	21(47.7%)	21(47.7%)	1(2.3%)	0	1(2.3%)
Personal banking	23(46%)	22(44%)	2(4%)	1(2%)	0
Computer services	8(18.2%)	7(15.9%)	4(9.1%)	20(45.5%)	5(11.4%)
Corporate finance	34(33%)	25(24.3%)	6(5.8%)	35(34%)	2(1.9%)
Personal finance	32(24.2%)	32(24.2%)	11(8.3%)	52(39.4%)	4(3.0%)
Corporate insurance	27(32.1%)	23(37.4%)	1(1.2%)	30(35.7%)	2(2.4%)
Personal insurance	30(23.4%)	39(30.5%)	8(6.3%)	48(37.5%)	3(2.3%)
Corporate legal	1(3.1%)	4(12.5%)	7(21.9%)	18(56.3%)	2(6.3%)
Personal legal	1(2.8%)	4(11.1%)	8(22.2%)	21(58.3%)	2(5.6%)
Management consultancy	9(16.4%)	5(9.1%)	3(5.5%)	33(60%)	5(9.1%)
Corporate property	2(5.9%)	6(17.6%)	9(26.5%)	14(41.2%)	2(5.9%)
Personal property	2(6.3%)	4(12.5%)	10(31.3%)	11(34.4%)	4(12.5%)
Research and development	1(14.3%)	0	2(28.6%)	4(57.1%)	0
Secretarial	0	0	1(6.2%)	12(75%)	3(18.8%)
Surveying	2(5.9%)	4(11.8%)	8(23.5%)	16(47.1%)	3(8.8%)
Consultant Engineering	1(6.7%)	3(20%)	1(6.7%)	8(53.3%)	2(13.3%)
Other	4(12.1%)	1(3.0%)	3(9.1%)	20(60.6%)	4(12.1%)

Table C12 Differences in Company Size Between Industries

Industry	Number of offices in firm					
	Single site	2-5	6-10	11-20	21-50	+50
Accountancy	39(69.6%)	8(14.3%)	0	2(3.6%)	2(3.6%)	5(8.9%)
Advertising	28(63.6%)	6(13.6%)	5(11.4%)	2(4.5%)	1(2.3%)	1(2.3%)
Architectural	17(54.8%)	9(29.0%)	2(6.5%)	1(3.2%)	0	1(3.2%)
Corporate banking	0	2(4.5%)	2(4.5%)	0	3(6.8%)	37(84%)
Personal banking	2(4%)	1(2%)	2(4%)	0	3(6%)	42(84%)
Computer services	19(43.2%)	10(22.7%)	4(9.1%)	2(4.5%)	1(2.3%)	8(18.2%)
Corporate finance	33(32%)	11(10.7%)	8(7.8%)	3(2.9%)	12(11.7%)	35(34%)
Personal finance	49(37.1%)	14(10.6%)	4(3%)	4(3%)	14(10.6%)	46(34.8%)
Corporate insurance	31(36.9%)	3(3.6%)	7(8.3%)	2(2.4%)	10(11.9%)	30(35.7%)
Personal insurance	47(36.7%)	11(8.6%)	9(7.0%)	5(3.9%)	13(10.2%)	43(33.6%)
Corporate legal	17(53.1%)	11(34.4%)	2(6.3%)	0	0	2(6.3%)
Personal legal	20(55.6%)	12(33.3%)	2(5.6%)	0	0	2(5.6%)
Management consultancy	31(56.4%)	9(16.4%)	3(5.5%)	3(5.5%)	0	8(14.5%)
Corporate property	15(44.1%)	10(29.4%)	2(5.9%)	2(5.9%)	3(8.8%)	1(2.9%)
Personal property	12(37.5%)	10(31.3%)	2(6.3%)	2(6.3%)	1(3.1%)	4(12.5%)
Research and devel.	4(57.1%)	1(14.3%)	0	0	1(14.3%)	1(14.3%)
Secretarial	11(68.8%)	5(31.2%)	0	0	0	0
Surveying	16(47.1%)	7(20.6%)	4(11.8%)	1(2.9%)	3(8.8%)	2(5.9%)
Consultant Eng.	7(46.7%)	4(26.7%)	3(20%)	0	1(6.7%)	0
Other	19(55.9%)	6(17.6%)	3(8.8%)	1(2.9%)	1(2.9%)	4(11.7%)

Table C13 Head Office Location by Industry

		Head Office Location		
Industry	Not applicable	London	U.K.	Overseas
Accountancy	43(76.8%)	7(12.5%)	4(7.1%)	1(1.8%)
Advertising	33(75%)	3(6.8%)	8(18.2%)	0
Architectural	21(67.7%)	0	10(32.3%)	0
Corporate banking	1(2.3%)	28(63.6%)	13(29.5%)	2(4.5%)
Personal banking	3(6%)	33(66%)	12(24%)	2(4%)
Computer services	24(54.5%)	10(22.7%)	9(20.5%)	0
Corporate finance	37(35.9%)	34(33%)	26(25.2%)	4(3.9%)
Personal finance	55(41.7%)	34(25.8%)	39(29.5%)	2(1.5%)
Corporate insurance	32(38.1%)	36(42.9%)	13(15.5%)	2(2.4%)
Personal insurance	51(39.8%)	39(30.5%)	37(28.9%)	1(0.8%)
Corporate legal	20(62.5%)	4(12.5%)	8(25%)	0
Personal legal	23(63.9%)	4(11.1%)	9(25%)	0
Management consultancy	38(69.1%)	8(14.5%)	7(12.7%)	1(1.8%)
Corporate property	17(50%)	6(17.6%)	11(32.4%)	0
Personal property	16(50%)	3(9.4%)	13(40.6%)	0
Research and dev.	4(57.1%)	0	3(42.9%)	0
Secretarial	15(93.8%)	0	1(6.2%)	0
Surveying	20(58.8%)	4(11.8%)	10(29.4%)	0
Consultant Eng.	10(66.7%)	2(13.3%)	3(20%)	0
Other	24(70.6%)	1(2.9%)	5(14.7%)	3(8.8%)

Table C14 Length of Time Office Located at Present Site

	Frequency	Percentage
Less than 5 years	197	45.8
5 years or more	233	54.2
	430	100.0

Table C15 Reasons for Present Location

	Frequency	Percentage
Not applicable	233	54.2
Newly established firm	49	11.4
Company expansion	57	13.2
Office relocation	88	20.5
Other	3	0.7
	430	100.0

Table C16 Crosstabulation of Reason for Location Decision by Factors Influencing the Location Decision

	Reason			
Factors	Newly Established	Company Expansion	Office Relocation	Other
Similar services	6(12.2%)	3(5.3%)	11(12.5%)	0
No similar services	9(18.4%)	3(5.3%)	2(2.3%)	0
Increased demand	2(4.1%)	13(22.8%)	11(12.5%)	0
Other	13(26.5%)	12(21.1%)	35(39.8%)	2(66.7%)
Similar services and increased demand	7(14.3%)	9(15.8%)	8(9.1%)	0
Similar services and other	0	0	4(4.5%)	1(33.3%)
No similar services and other	0	0	2(2.3%)	0
No similar services and increased demand	6(12.2%)	8(14.0%)	2(2.3%)	0
Increased demand and other	0	2(3.5%)	5(5.7%)	0
No similar services, increased demand and other	0	1(1.8%)	1(1.1%)	0
Similar services, increased demand and other	1(2.0%)	1(1.8%)	2(2.3%)	0
Similar and no similar services	1(2.0%)	0	0	0
Similar and no similar services and increased demand	1(2.0%)	3(5.3%)	1(1.1%)	0
No response	3(6.1%)	2(3.5%)	4(4.5%)	0

Table C17 Client Profile: By Size and Type

Proportion of clients	Individuals	Small Firms	Medium Firms	Large Firms	Multinationals
None	107(29%)	90(24.4%)	118(32.0%)	154(41.7%)	282(76.4%)
1-10%	57(15.4%)	92(24.9%)	95(25.7%)	77(20.9%)	46(12.5%)
11-20%	18(4.9%)	55(14.9%)	55(14.9%)	28(7.6%)	11(3.0%)
21-30%	17(4.6%)	56(15.2%)	42(11.4%)	25(6.8%)	9(2.4%)
31-40%	10(2.7%)	28(7.6%)	23(6.2%)	18(4.9%)	1(0.3%)
41-50%	22(6.0%)	18(4.9%)	16(4.3%)	17(4.6%)	9(2.4%)
51-60%	18(4.9%)	9(2.4%)	7(1.9%)	10(2.7%)	5(1.4%)
61-70%	25(6.8%)	4(1.1%)	8(2.2%)	12(3.3%)	3(0.8%)
71-80%	21(5.7%)	8(2.2%)	4(1.1%)	10(2.7%)	0
81-90%	20(5.4%)	4(1.1%)	0	6(1.6%)	2(0.5%)
+90%	54(14.6%)	5(1.4%)	1(0.3%)	12(3.3%)	1(0.3%)
	369	369	369	369	369

Table C18 Client Profile: By Industry Category

Proportion of clients	Agriculture	Mining	Manufacturing	Services
None	255(73.9%)	285(82.6%)	63(18.3%)	28(8.1%)
1-10%	81(23.5%)	44(12.8%)	56(16.2%)	42(12.2%)
11-20%	4(1.2%)	12(3.5%)	31(9.0%)	39(11.3%)
21-30%	2(0.6%)	1(0.3%)	37(10.7%)	31(9.0%)
31-40%	0	1(0.3%)	27(7.8%)	27(7.8%)
41-50%	2(0.6%)	1(0.3%)	51(14.8%)	48(13.9%)
51-60%	0	0	20(5.8%)	18(5.2%)
61-70%	0	1(0.3%)	16(4.6%)	23(6.7%)
71-80%	0	0	21(6.1%)	25(7.2%)
81-90%	1(0.3%)	0	12(3.5%)	13(3.8%)
+90%	0	0	11(3.2%)	51(14.8%)
	345	345	345	345

Table C19 Client Profile: By Sector

Proportion of clients	Private	Nationalised Industries	Local or National Government
None	4(1.1%)	280(77.1%)	245(67.5%)
1-10%	7(1.9%)	45(12.4%)	62(17.1%)
11-20%	3(0.8%)	19(5.2%)	19(5.2%)
21-30%	12(3.3%)	12(3.3%)	13(3.6%)
31-40%	9(2.5%)	4(1.1%)	6(1.7%)
41-50%	12(3.3%)	0	7(1.9%)
51-60%	16(4.4%)	1(2.8%)	3(0.8%)
61-70%	12(3.3%)	0	4(1.1%)
71-80%	31(8.5%)	1(2.8%)	2(0.6%)
81-90%	17(4.7%)	0	1(2.8%)
+90%	240(66.1%)	1(2.8%)	1(2.8%)
	363	363	363

Table C20 Client Profile: Location

Proportion of clients	Sheffield	Leeds	Yorkshire and Humberside	U.K.	Overseas
None	140(36.5%)	148(38.5%)	89(23.2%)	108(28.1%)	327(85.2%)
1-10%	72(18.8%)	55(14.3%)	103(26.8%)	133(34.6%)	45(11.7%)
11-20%	17(4.4%)	19(4.9%)	72(18.8%)	39(10.2%)	5(1.3%)
21-30%	20(5.2%)	20(5.2%)	42(10.9%)	23(6.0%)	2(0.5%)
31-40%	6(1.6%)	16(4.2%)	23(6.0%)	17(4.4%)	2(0.5%)
41-50%	16(4.2%)	26(6.8%)	22(5.7%)	17(4.4%)	0
51-60%	11(2.9%)	16(4.2%)	15(3.9%)	10(2.6%)	0
61-70%	12(3.1%)	20(5.2%)	8(2.1%)	15(3.9%)	1(0.3%)
71-80%	20(5.2%)	30(7.8%)	5(1.3%)	7(1.8%)	0
81-90%	20(5.2%)	14(3.6%)	3(0.8%)	5(1.3%)	1(0.3%)
+90%	50(13.0%)	20(5.2%)	2(0.5%)	10(2.6%)	1(0.3%)
	384	384	384	384	384

Table C21 Crosstabulation: Office Type By Client Size

Type and proportion of client:	Multinational branch	U.K. co. branch	Local co. branch	Single site firm	Head Office
A) Individuals					
None	12(19.8%)	25(23.7%)	8(21.6%)	52(26.9%)	9(36%)
1-10%	14(23%)	11(10.4%)	4(10.8%)	22(11.4%)	5(20%)
11-50%	4(6.4%)	7(6.2%)	8(21.6%)	43(22.3%)	3(12%)
51-80%	12(19.8%)	11(10.1%)	7(18.9%)	32(16.6%)	3(12%)
+80%	5(8%)	33(29.5%)	7(18.9%)	28(14.5%)	2(8%)
B) Small Firms					
None	10(15.9%)	31(28.7%)	8(21.6%)	35(18.1%)	6(24%)
1-10%	10(15.9%)	32(29.6%)	7(18.9%)	38(19.7%)	5(20%)
11-50%	21(33.3%)	18(16.7%)	17(45.9%)	85(44.1%)	11(44%)
51-80%	4(6.4%)	5(4.7%)	2(5.4%)	10(5.2%)	0
+ 80%	0	1(0.9%)	0	4(2.1%)	0
C) Medium Sized Firms					
None	14(22.2%)	33(30.6%)	8(21.6%)	60(31.1%)	3(12%)
1-10%	9(14.3%)	20(18.5%)	12(32.4%)	49(25.4%)	5(15%)
11-50%	21(33.3%)	29(26.9%)	13(35.1%)	56(29%)	13(52%)
51-80%	2(3.2%)	5(4.7%)	0	11(5.7%)	1(4%)
+80%	0	0	1(2.7%)	0	0
D) Large Firms					
None	14(22.2%)	39(36.1%)	14(37.8%)	81(42%)	6(24%)
1-10%	12(19.0%)	16(14.8%)	8(21.6%)	36(18.7%)	2(8%)
11-50%	13(20.6%)	20(18.6%)	9(24.3%)	38(19.7%)	7(28%)
51-80%	6(9.5%)	7(6.6%)	2(5.4%)	11(5.8%)	6(24%)
+80%	1(1.6%)	5(4.7%)	1(2.7%)	10(5.1%)	1(4%)
E) Multinationals					
None	30(47.6%)	64(59.3%)	21(56.8%)	152(78.8%)	13(52%)
1-10%	7(11.1%)	12(11.1%)	7(18.9%)	12(6.2%)	6(24%)
11-50%	8(12.7%)	8(7.4%)	4(10.8%)	8(4.1%)	2(8%)
51-80%	0	3(2.8%)	2(5.4%)	2(1.0%)	1(4%)
+80%	1(1.6%)	0	0	2(1.0%)	0

Table C22 Crosstabulation: Office Type by Industry Category

Type and proportion of client	Multinational branch	U.K. co. branch	Local co. branch	Single site firm	Head office
A) Agriculture					
None	30(47.6%)	53(49.1%)	25(67.6%)	129(66.8%)	18(72%)
1-10%	14(22.2%)	16(14.8%)	8(21.6%)	37(19.2%)	3(12%)
11-50%	1(1.6%)	4(3.7%)	0	1(0.5%)	0
51-80%	0	0	0	0	0
+ 80%	0	0	0	1(0.5%)	0
b) Mining					
None	34(54%)	50(46.3%)	30(81%)	151(78.2%)	16(64%)
1-10%	8(12.6%)	15(13.9%)	3(8.1%)	14(7.3%)	4(16%)
11-50%	3(4.8%)	8(7.4%)	0	3(1.6%)	1(4%)
51-80%	0	0	0	1(0.5%)	0
+ 80%	0	0	0	0	0
C) Manufacturing					
None	8(12.7%)	16(14.8%)	5(13.5%)	31(16.1%)	3(12%)
1-10%	9(14.3%)	11(10.2%)	6(16.2%)	29(15.0%)	1(4%)
11-50%	18(28.5%)	32(29.8%)	15(40.5%)	68(35.3%)	9(36%)
51-80%	9(14.4%)	10(9.2%)	4(10.8%)	26(13.5%)	7(28%)
+80%	1(1.6%)	4(3.7%)	3(8.1%)	14(7.2%)	1(4%)
D Services					
None	1(1.6%)	3(2.8%)	4(10.8%)	16(8.3%)	4(16%)
1-10%	7(11.1%)	10(9.3%)	6(16.2%)	18(9.3%)	1(4%)
11-50%	24(38%)	33(30.6%)	12(32.4%)	63(32.6%)	10(40%)
51-80%	4(6.4%)	7(6.5%)	8(21.6%)	42(21.7%)	4(16%)
+80%	9(14.3%)	20(18.5%)	3(8.1%)	30(15.5%)	2(8%)

Table C23 Crosstabulation: Office Type by Sector

Type and proportion of client	Multinational branch	U.C. co. branch	Local co. branch	Single site firm	Head office
A) Private Sector					
None	1(1.6%)	0	0	2(1%)	1(4%)
1-10%	1(1.6%)	2(1.9%)	0	4(2.1%)	0
11-50%	4(6.4%)	11(10.2%)	2(5.4%)	14(7.2%)	5(20%)
51-80%	7(11.2%)	19(17.6%)	9(24.3%)	18(9.4%)	5(20%)
+ 80%	36(57.1%)	47(43.5%)	23(62.2%)	137(71.0%)	11(44%)
B) Nationalised Industries					
None	39(61.9%)	48(44.4%)	27(73.0%)	150(77.7%)	14(56%)
1-10%	5(7.9%)	14(13.0%)	6(16.2%)	14(7.3%)	4(16%)
11-50%	4(6.4%)	17(15.8%)	1(2.7%)	10(5.1%)	3(12%)
51-80%	0	0	0	1(0.5%)	0
+ 80%	1(1.6%)	0	0	0	0
C) Local or National Government					
None	33(52.4%)	47(43.5%)	24(64.9%)	130(67.4%)	8(32%)
1-10%	7(11.1%)	16(14.8%)	7(18.9%)	22(11.4%)	9(36%)
11-50%	6(9.5%)	15(14.0%)	3(8.1%)	17(8.9%)	4(16%)
51-80%	2(3.2%)	1(0.9%)	0	5(2.5%)	1(4%)
+ 80%	1(1.6%)	0	0	1(0.5%)	0

Table C24 Crosstabulation: Office Type by Client Location

Proportion of clients located in	Multinational branch	U.K. co. branch	Local co. branch	Single site firm	Head office
A) Sheffield					
None	12(19.0%)	26(24.1%)	23(6.2%)	69(35.8%)	10(40%)
1-10%	13(20.6%)	14(13.0%)	7(18.9%)	31(16.1%)	6(24%)
11-50%	12(19.0%)	22(20.4%)	3(8.1%)	21(10.9%)	1(4%)
51-80%	6(9.6%)	5(4.6%)	1(2.7%)	26(13.4%)	2(8%)
+ 80%	8(12.7%)	21(19.4%)	2(5.4%)	36(18.7%)	3(12%)
B) Leeds					
None	21(33.3%)	34(31.5%)	5(13.5%)	80(41.5%)	7(28%)
1-10%	6(9.5%)	13(12.0%)	4(10.8%)	26(13.5%)	4(16%)
11-50%	13(20.6%)	28(26.0%)	11(29.7%)	22(11.4%)	6(24%)
51-80%	9(14.3%)	6(5.7%)	10(27.0%)	36(18.7%)	4(16%)
+ 80%	2(3.2%)	7(6.5%)	6(16.2%)	18(9.3%)	1(4%)
C) Elsewhere in Yorkshire and Humberside					
None	9(14.3%)	22(20.3%)	11(29.7%)	40(20.7%)	6(24%)
1-10%	10(15.8%)	17(15.7%)	10(27.0%)	59(30.6%)	6(24%)
11-50%	26(41.2%)	36(33.3%)	14(37.8%)	70(36.3%)	10(40%)
51-80%	5(7.7%)	12(11.1%)	1(2.7%)	10(5.2%)	0
+ 80%	1(1.6%)	1(0.9%)	0	3(1.5%)	0
D) Elsewhere in U.K.					
None	10(15.9%)	36(33.3%)	9(24.3%)	47(24.4%)	5(20%)
1-10%	24(38.1%)	22(20.4%)	12(32.4%)	68(35.2%)	6(24%)
11-50%	14(22.2%)	22(20.4%)	10(27.0%)	40(20.7%)	7(28%)
51-80%	2(3.2%)	4(3.8%)	4(10.8%)	20(10.4%)	2(8%)
+ 80%	1(1.6%)	4(3.7%)	1(2.7%)	12(6.2%)	4(16%)
E) Overseas					
None	41(65.1%)	79(73.1%)	31(83.8%)	154(79.8%)	18(72%)
1-10%	7(11.1%)	8(7.4%)	5(13.5%)	23(11.9%)	2(8%)
11-50%	2(3.2%)	1(0.9%)	0	5(2.6%)	1(4%)
51-80%	0	0	0	0	1(4%)
+ 80%	1(1.6%)	0	0	1(0.5%)	0

Table C25 Crosstabulation: Firm Size by Client Location

Proportion of clients located in	Number of Offices 2-5	6-10	11-20	21-50	+50
A) Sheffield					
None	35(46.1%)	8(21.6%)	4(30.8%)	10(32.3%)	16(19.3%)
1-10%	17(22.4%)	13(35.1%)	3(23.1%)	2(6.5%)	8(9.6%)
11-50%	9(11.7%)	9(24.3%)	5(38.5%)	8(32.4)	6(7.2%)
51-80%	5(6.5%)	0	0	3(9.7%)	8(9.6%)
+ 80%	4(5.2%)	2(5.4%)	0	2(6.4%)	25(30.1%)
B) Leeds					
None	21(27.6%)	4(10.8%)	1(7.7%)	10(32.3%)	35(42.2%)
1-10%	8(10.5%)	7(18.9%)	3(23.1%)	3(9.7%)	6(7.2%)
11-50%	21(27.6%)	15(40.5%)	5(38.5%)	12(38.8%)	6(7.2%)
51-80%	14(18.4%)	5(13.5%)	2(15.4%)	1(3.2%)	9(10.8%)
+ 80%	6(7.8%)	1(2.7%)	1(7.7%)	1(3.2%)	7(8.4%)
C) Elsewhere in Yorkshire and Humberside					
None	20(26.7%)	3(8.1%)	0	1(3.2%)	23(27.7%)
1-10%	17(22.7%)	9(24.3%)	1(7.7%)	5(16.1%)	16(19.3%)
11-50%	28(37.4%)	16(43.2%)	8(61.6%)	15(48.5%)	21(25.3%)
51-80%	4(5.4%)	3(8.1%)	3(23.1%)	6(19.4%)	2(2.4%)
+ 80%	0	1(2.7%)	0	0	1(1.2%)
D) Elsewhere in U.K.					
None	14(18.4%)	4(10.8%)	5(38.5%)	13(41.9%)	25(30.1%)
1-10%	19(25%)	9(24.3%)	3(23.1%)	5(16.1%)	28(33.7%)
11-50%	44(32.9%)	14(37.8%)	2(15.4%)	8(25.9%)	8(9.6%)
51-80%	6(7.8%)	3(8.1%)	2(15.4%)	1(3.2%)	1(1.2%)
+ 80%	6(7.8%)	2(5.4%)	0	0	1(1.2%)
E) Overseas					
None	59(77.6%)	25(67.6%)	9(69.2%)	24(77.4%)	55(66.3%)
1-10%	8(10.5%)	6(16.2%)	2(15.4%)	3(9.7%)	7(8.4%)
11-50%	1(1.3%)	1(2.7%)	1(7.7%)	0	1(1.2%)
51-80%	1(1.3%)	1(2.7%)	0	0	0
+ 80%	1(1.3%)	1(2.7%)	0	0	0

Table C26 Sheffield Firms with Clients in Sheffield by Industry

Industry	None	1-10%	11-50%	51-80%	+80%
Accountancy	1(3.8%)	0	1(3.8%)	9(19.2%)	14(53.8%)
Advertising	1(6.3%)	3(18.8%)	6(37.6%)	5(18.8%)	1(6.3%)
Architectural	1(8.3%)	1(8.3%)	8(66.6%)	1(8.3%)	1(8.3%)
Corporate banking	0	0	1(4.5%)	2(9.0%)	15(68.1%)
Personal banking	0	0	2(6.6%)	5(16.6%)	19(63.3%)
Computer services	4(20%)	2(10%)	2(10%)	6(30%)	5(25%)
Corporate finance	1(2.1%)	0	8(17.0%)	14(29.8%)	21(44.7%)
Personal finance	1(1.5%)	0	9(13.8%)	18(27.7%)	32(49.2%)
Corporate insurance	0	0	8(18.7%)	11(25.6%)	18(41.9%)
Personal insurance	1(1.5%)	0	8(12.3%)	17(26.2%)	32(49.3%)
Corporate legal	0	0	3(15%)	2(10%)	12(60%)
Personal legal	0	0	3(15.8%)	2(10.5%)	11(57.9%)
Management consultancy	1(4%)	4(16%)	2(8%)	6(24%)	10(40%)
Corporate property	0	0	3(21.3%)	3(21.4%)	3(21.4%)
Personal property	0	0	1(8.3%)	2(16.6%)	4(33.3%)
Research and development	0	0	0	1(33.3%)	2(66.7%)
Secretarial	0	0	0	4(44.4%)	5(55.5%)
Surveying	1(7.7%)	0	4(30.8%)	3(23.1%)	4(30.8%)
Consultant Engineering	3(42.9%)	0	2(28.6%)	0	1(14.3%)
Other	1(8.3%)	0	4(33.3%)	2(16.6%)	4(33.3%)

Table C27 Leeds Firms with Clients in Sheffield by Industry

Industry	Proportion of clients None	1-10%	11-50%	51-80%	+80%
Accountancy	19(63.3%)	7(23.3%)	3(10%)	0	0
Advertising	16(57.1%)	9(32.1%)	3(10.8%)	0	0
Architectural	16(84.2%)	2(10.5%)	1(5.3%)	0	0
Corporate banking	9(40.9%)	5(22.7%)	1(5.3%)	0	0
Personal banking	9(45%)	4(20%)	1(5%)	0	0
Computer services	12(50%)	7(29.2%)	2(8.4%)	0	0
Corporate finance	20(36.4%)	16(29.1%)	7(12.7%)	1(1.8%)	0
Personal finance	31(47%)	17(25.8%)	5(7.5%)	1(1.5%)	0
Corporate insurance	16(39%)	11(26.8%)	4(9.8%)	0	0
Personal insurance	31(49.2%)	16(25.4%)	5(8.0%)	0	0
Corporate legal	5(41.7%)	5(41.7%)	0	0	0
Personal legal	10(58.8%)	5(29.4%)	0	0	0
Management consultancy	15(50%)	7(23.3%)	4(13.3%)	0	0
Corporate property	14(70%)	3(15%)	2(10%)	0	0
Personal property	15(75%)	3(15%)	1(5%)	0	0
Research and development	3(75%)	0	1(25%)	0	0
Secretarial	6(85.7%)	0	1(14.3%)	0	0
Surveying	16(76%)	4(19%)	0	0	0
Consultant Engineering	4(50%)	3(37.5%)	0	0	0
Other	11(50%)	7(31.8%)	1(4.5%)	0	0

Table C28 **Leeds Firms with Clients in Leeds by Industry**

Industry	Proportion of clients				
	None	1-10%	11-50%	51-80%	+80%
Accountancy	1(3.3%)	1(3.3%)	9(30.1%)	13(43.3%)	5(16.6%)
Advertising	4(14.3%)	6(21.4%)	13(46.4%)	4(14.3%)	1(3.6%)
Architectural	5(26.3%)	2(10.6%)	6(31.8%)	5(26.3%)	1(5.3%)
Corporate banking	0	0	5(22.7%)	5(22.7%)	5(22.7%)
Personal banking	0	0	3(15%)	6(30%)	5(25%)
Computer services	1(4.2%)	6(25%)	6(25%)	6(25%)	2(8.4%)
Corporate finance	2(3.6%)	3(5.5%)	20(36.4%)	14(25.5%)	4(7.2%)
Personal finance	1(1.5%)	3(4.5%)	17(25.7%)	22(33.3%)	5(7.5%)
Corporate insurance	2(4.9%)	1(2.4%)	11(26.9%)	11(26.9%)	5(12.2%)
Personal insurance	1(1.6%)	2(3.2%)	13(20.7%)	22(34.9%)	13(20.6%)
Corporate legal	0	0	5(41.7%)	3(24.9%)	2(16.7%)
Personal legal	0	0	5(29.5%)	4(23.6%)	6(35.2%)
Management consultancy	0	4(13.3%)	8(26.7%)	10(33.4%)	3(10.0%)
Corporate property	1(5%)	0	9(45.0%)	8(40.0%)	1(5.0%)
Personal property	1(5%)	1(5%)	2(10%)	7(35%)	8(40%)
Research and development	0	1(25%)	2(50%)	0	0
Secretarial	0	1(14.3%)	0	3(42.9%)	3(42.9%)
Surveying	0	1(4.8%)	7(33.4%)	8(38.1%)	4(19.1%)
Consultant Engineering	2(25%)	1(12.5%)	3(37.5%)	1(12.5%)	0
Other	3(13.6%)	4(18.2%)	5(22.6%)	5(22.6%)	2(9.1%)

Table C29 Sheffield Firms with Clients in Leeds by Industry

Industry	Proportion of clients None	1-10%	11.50%	51-80%	+80%
Accountancy	23(88.5%)	1(3.8%)	0	0	1(3.8%)
Advertising	11(68.8%)	5(31.2%)	0	0	0
Architectural	7(58.3%)	3(25%)	2(16.7%)	0	0
Corporate banking	16(72.7%)	2(9.1%)	0	0	0
Personal banking	24(80%)	1(6.7%)	0	0	0
Computer services	13(65%)	3(15%)	2(10%)	0	1(5%)
Corporate finance	36(76.6%)	7(14.9%)	0	0	1(2.1%)
Personal finance	48(73.8%)	11(16.9%)	0	0	1(1.5%)
Corporate insurance	32(74.4%)	7(16.3%)	0	0	0
Personal insurance	48(73.8%)	9(13.8%)	0	0	1(1.5%)
Corporate legal	15(75%)	1(5%)	1(5%)	0	0
Personal legal	14(73.7%)	1(5.3%)	1(5.3%)	0	0
Management consultancy	21(84%)	2(8%)	0	0	1(4%)
Corporate property	6(42.8%)	3(21.4%)	0	0	0
Personal property	6(50%)	1(8.3%)	0	0	0
Research and Development	3(100%)	0	0	0	0
Secretarial	8(88.9%)	1(11.1%)	0	0	0
Surveying	8(61.5%)	2(15.4%)	2(15.4%)	0	0
Consultant Engineering	3(42.9%)	2(28.6%)	1(14.3%)	0	0
Other	8(66.7%)	3(25%)	0	0	0

Table C30 Clients Elsewhere in Yorkshire and Humberside by Industry

Industry	Proportion of clients None	1-10%	11-50%	51-80%	+80%
Accountancy	10(17.9%)	21(37.5%)	16(28.6%)	6(10.8%)	1(1.9%)
Advertising	9(20.5%)	10(22.7%)	20(45.4%)	3(6.8%)	1(2.3%)
Architectural	7(22.6%)	3(9.7%)	17(54.9%)	3(9.6%)	1(3.2%)
Corporate banking	10(22.7%)	11(25%)	12(27.2%)	0	0
Personal banking	13(26%)	13(26%)	14(28%)	0	0
Computer services	11(25%)	12(27.3%)	13(29.5%)	2(4.6%)	1(2.3%)
Corporate finance	9(10.7%)	24(28.6%)	41(48.7%)	8(9.6%)	2(2.4%)
Personal finance	28(21.2%)	32(24.2%)	49(37.1%)	5(3.8%)	1(0.8%)
Corporate insurance	15(17.9%)	16(19.0%)	33(39.3%)	5(6.0%)	1(1.2%)
Personal insurance	28(21.9%)	30(23.4%)	44(34.3%)	7(5.5%)	1(0.8%)
Corporate legal	6(18.8%)	11(34.4%)	10(31.3%)	0	0
Personal legal	6(16.7%)	15(41.7%)	10(27.8%)	0	0
Management consultancy	10(18.2%)	19(34.5%)	14(25.4%)	6(10.9%)	1(1.8%)
Corporate property	5(14.7%)	6(17.6%)	16(47.0%)	1(2.9%)	0
Personal property	11(34.4%)	5(15.6%)	10(29.2%)	0	0
Research and development	1(14.3%)	2(28.6%)	4(57.2%)	0	0
Secretarial	6(37.5%)	7(43.8%)	3(18.8%)	0	0
Surveying	7(20.6%)	6(17.6%)	17(50%)	1(2.9%)	1(2.9%)
Consultant Engineering	3(20%)	2(13.3%)	6(40%)	1(6.7%)	1(6.7%)
Other	7(20.6%)	9(26.5%)	12(35.3%)	1(2.9%)	1(2.9%)

Table C31 **Clients Elsewhere in the U.K. by Industry**

Industry	Proportion of clients None	1-10%	11-50%	51-80%	+80%
Accountancy	20(35.7%)	27(48.2%)	5(9.0%)	1(1.8%)	1(1.8%)
Advertising	4(9.1%)	6(13.6%)	19(43.2%)	10(22.7%)	5(11.4%)
Architectural	6(19.4%)	4(12.9%)	15(48.4%)	4(13.0%)	2(6.4%)
Corporate banking	14(31.8%)	17(38.6%)	2(4.6%)	0	0
Personal banking	17(34%)	21(42%)	2(4%)	0	0
Computer services	8(18.2%)	11(25%)	10(22.7%)	8(18.2%)	3(6.8%)
Corporate finance	21(20.4%)	46(44.7%)	19(18.4%)	1(1%)	1(1%)
Personal finance	35(26.5%)	56(42.4%)	23(17.4%)	1(0.8%)	0
Corporate insurance	12(14.3%)	39(46.4%)	17(20.2%)	0	1(1.2%)
Personal insurance	35(27.3%)	52(40.6%)	22(17.2%)	0	0
Corporate legal	5(15.6%)	16(50%)	5(15.6%)	1(3.1%)	0
Personal legal	9(25%)	15(41.7%)	6(16.7%)	1(2.8%)	0
Management consultancy	14(25.5%)	19(34.5%)	11(20%)	5(9.0%)	1(1.8%)
Corporate property	7(20.6%)	8(23.5%)	10(29.4%)	3(8.8%)	0
Personal property	11(34.4%)	6(18.8%)	8(25%)	1(3.1%)	0
Research and development	2(28.6%)	2(28.6%)	2(28.6%)	0	1(14.3%)
Secretarial	4(25%)	7(43.8%)	5(31.3%)	0	0
Surveying	12(35.3%)	8(23.5%)	9(26.5%)	3(8.8%)	0
Consultant Engineering	2(13.3%)	3(20%)	3(20%)	3(20%)	2(13.3%)
Other	8(23.5%)	9(26.5%)	8(23.5%)	4(11.7%)	1(2.9%)

Table C32 Clients Overseas by Industry

Industry	Proportion of clients None	1-10%	11-50%	50-80%	+80%
Accountancy	48(85.7%)	6(10.7%)	0	0	0
Advertising	38(86.4%)	4(9.1%)	2(4.5%)	0	0
Architectural	29(93.5%)	1(2.7%)	0	0	0
Corporate banking	28(63.6%)	5(11.4%)	0	0	0
Personal banking	33(66%)	7(14%)	0	0	0
Computer services	33(75%)	3(6.8%)	4(9.0%)	0	0
Corporate finance	71(68.9%)	18(17.5%)	0	0	0
Personal finance	94(71.2%)	21(15.9%)	0	0	0
Corporate insurance	60(71.4%)	9(10.7%)	1(1.2%)	0	0
Personal insurance	92(71.9%)	17(13.3%)	1(0.8%)	0	0
Corporate legal	21(65.6%)	6(18.8%)	0	0	0
Personal legal	25(69.4%)	6(16.7%)	0	0	0
Management consultancy	36(65.5%)	8(14.5%)	3(5.4%)	1(1.8%)	1(1.8%)
Corporate property	25(73.5%)	3(8.8%)	0	0	0
Personal property	20(62.5%)	5(15.6%)	1(3.1%)	0	0
Research and Development	4(57.1%)	3(42.9%)	0	0	0
Secretarial	14(87.5%)	2(12.5%)	0	0	0
Surveying	28(82.4%)	4(11.8%)	0	0	0
Consultant Engineering	11(73.3%)	2(13.3%)	0	0	0
Other	24(70.6%)	4(11.8%)	2(5.8%)	0	0

Table C33 Respondents as Users of Advanced Producer Services: Service Type Used and Mode of Provision

Service type	Usage/Mode of Provision			
	Not Used	External	Internal	Both
Advertising	106(26.3%)	96(23.8%)	167(41.5%)	33(8.2%)
Architectural	242(60.2%)	83(20.6%)	73(18.2%)	4(1.0%)
Banking	75(18.7%)	258(64.2%)	63(15.7%)	6(1.5%)
Computer services	109(27.1%)	89(22.1%)	177(44.0%)	27(6.7%)
Financial services	147(36.6%)	105(26.1%)	133(33.1%)	17(4.2%)
Insurance	56(13.9%)	210(52.2%)	125(31.1%)	11(2.7%)
Legal services	63(15.7%)	228(56.7%)	89(22.1%)	22(5.5%)
Management consultancy	235(58.5%)	48(11.9%)	110(27.4%)	9(2.2%)
Property services	212(52.7%)	75(18.7%)	104(25.9%)	11(2.7%)
Research and development	238(59.2%)	25(6.2%)	123(30.6%)	16(4.0%)
Secretarial services	108(26.9%)	21(5.2%)	267(66.4%)	6(1.5%)

Table C34 Location of Suppliers of Advanced Producer Services to Respondent Firms

	None	1-10%	11-50%	51-80%	+80%
Sheffield	210(63.1%)	15(4.5%)	22(6.6%)	13(3.9%)	73(21.9%)
Leeds	165(49.5%)	26(7.8%)	32(9.6%)	22(6.6%)	88(26.4%)
Elsewhere in Yorkshire and Humberside	248(74.5%)	41(12.3%)	31(9.3%)	6(1.8%)	7(2.1%)
Elsewhere in UK	184(55.3%)	31(9.3%)	45(13.5%)	15(4.5%)	58(17.4%)

Table C35 **Respondents as Users of Advanced Producer Services: Usage by Office Type**

Service Type	Multinational branch	U.K. co. branch	Local co. branch	Single site firms	Head offices
A) Advertising					
Not used	2(3.2%)	14(13%)	8(21.6%)	78(40.4%)	4(16%)
External	6(9.5%)	25(23.1%)	12(32.4%)	43(22.3%)	9(32%)
Internal	41(65.1%)	53(49.1%)	14(37.8%)	49(25.4%)	7(28%)
Both	11(17.5%)	7(6.5%)	2(5.4%)	9(4.7%)	4(16%)
B) Architectural					
Not used	24(38.1%)	50(46.3%)	20(54.1%)	133(68.9%)	12(48%)
External	10(15.9%)	21(19.4%)	12(32.4%)	0	9(36%)
Internal	23(36.5%)	27(25%)	4(10.8%)	16(8.3%)	3(12%)
Both	3(4.8%)	1(0.9%)	1(2.7%)	0	0
C) Banking					
Not used	12(19%)	18(16.7%)	6(16.2%)	36(18.7%)	3(12%)
External	19(30.2%)	49(45.4%)	29(78.4%)	140(72.5%)	17(68%)
Internal	25(39.7%)	31(28.7%)	1(2.7%)	2(1.0%)	4(16%)
Both	4(6.3%)	1(0.9%)	0	1(0.5%)	0
D) Computer services					
Not used	2(3.2%)	9(8.3%)	11(29.7%)	79(40.9%)	7(28%)
External	3(4.8%)	19(17.6%)	15(40.5%)	48(24.9%)	3(12%)
Internal	45(71.4%)	64(59.3%)	9(24.3%)	45(23.3%)	13(52%)
Both	10(15.9%)	7(6.5%)	1(2.7%)	7(3.6%)	1(4%)
E) Financial services					
Not used	18(28.6%)	32(29.6%)	10(27.0%)	78(40.4%)	9(36%)
External	3(4.8%)	20(18.5%)	14(37.8%)	61(31.6%)	6(24%)
Internal	35(55.6%)	45(41.7%)	11(29.7%)	33(17.1%)	7(28%)
Both	4(6.3%)	2(1.9%)	1(2.7%)	7(3.6%)	2(8%)
F) Insurance					
Not used	6(9.5%)	11(10.2%)	6(16.2%)	30(15.5%)	2(8%)
External	15(23.8%)	40(37.0%)	22(59.5%)	117(60.6%)	15(60%)
Internal	35(55.6%)	45(41.7%)	6(16.2%)	30(15.5%)	7(28%)
Both	4(6.3%)	3(2.8%)	2(5.4%)	2(1.0%)	0

Table C35 continued

Service Type	Multinational branch	U.K. co. branch	Local co. branch	Single site firms	Head offices
G) Legal services					
Not used	5(7.9%)	9(8.3%)	6(16.2%)	36(18.7%)	7(28%)
External	15(23.8%)	45(41.7%)	23(62.2%)	130(67.4%)	13(52%)
Internal	28(44.4%)	38(35.2%)	6(16.2%)	13(6.7%)	3(12%)
Both	12(19.0%)	7(6.5%)	1(2.7%)	0	1(4%)
H) Management consultancy					
Not used	18(28.6%)	45(41.7%)	20(54.1%)	138(71.5%)	11(44%)
External	9(14.2%)	17(15.7%)	5(13.5%)	13(6.7%)	4(16%)
Internal	31(49.2%)	34(31.5%)	10(27.0%)	25(13.0%)	9(36%)
Both	2(3.2%)	3(2.8%)	1(2.7%)	3(1.6%)	0
I) Property services					
Not used	16(25.4%)	41(38.0%)	18(48.6%)	123(63.7%)	11(44%)
External	14(22.2%)	18(16.7%)	6(16.2%)	30(15.5%)	7(28%)
Internal	29(46.0%)	35(32.4%)	11(29.7%)	23(11.9%)	5(20%)
Both	1(1.6%)	5(4.6%)	1(2.7%)	3(1.6%)	1(4%)
J) Research and development					
Not used	12(19.0%)	43(39.8%)	22(59.5%)	145(75.1%)	13(52%)
External	3(4.8%)	7(6.5%)	4(10.8%)	8(4.1%)	3(12%)
Internal	40(63.5%)	47(43.5%)	8(21.6%)	21(10.9%)	7(28%)
Both	5(7.9%)	2(1.9%)	2(5.4%)	5(2.6%)	1(4%)
K) Secretarial and office services					
Not used	10(15.9%)	22(20.4%)	8(21.6%)	61(31.6%)	7(28%)
External	1(1.6%)	5(4.6%)	4(10.8%)	8(4.1%)	3(12%)
Internal	46(73.0%)	72(66.7%)	22(59.5%)	109(56.5%)	14(56%)
Both	3(4.8%)	0	2(5.4%)	1(0.5%)	0

Table C36 **Respondents as Users of Advanced Producer Services: Location of Suppliers by Office Type**

Proportion of suppliers located in	Multinational branch	U.K. co. branch	Local co. branch	Single site firm	Head office
A) Sheffield					
None	29(44.4%)	57(52.8%)	27(73.0%)	84(43.5%)	13(52%)
1-10%	1(1.6%)	7(6.5%)	0	6(3.1%)	0
11-50%	5(8.0%)	5(4.7%)	3(8.1%)	9(4.6%)	0
51-80%	1(1.6%)	0	1(2.7%)	8(4.2%)	3(12%)
+80%	4(6.3%)	4(3.7%)	1(2.7%)	57(29.5%)	4(16%)
B) Leeds					
None	25(39.7%)	46(42.6%)	5(13.5%)	76(39.4%)	10(40%)
1-10%	5(7.9%)	8(7.4%)	2(5.4%)	11(5.7%)	0
11-50%	2(3.2%)	10(9.4%)	6(16.2%)	12(6.1%)	1(4%)
51-80%	2(3.2%)	3(2.8%)	3(8.1%)	13(6.8%)	1(4%)
+80%	5(7.9%)	6(5.6%)	16(43.0%)	53(27.4%)	8(32%)
C) Elsewhere in Yorkshire and Humberside					
None	29(46.0%)	58(53.7%)	20(54.1%)	127(65.8%)	13(52%)
1-10%	4(6.3%)	6(5.6%)	4(10.8%)	20(10.4%)	4(16%)
11-50%	4(6.3%)	7(6.5%)	5(13.5%)	14(7.3%)	0
51-80%	0	2(1.9%)	2(5.4%)	1(0.5%)	2(8%)
+80%	2(3.2%)	0	1(2.7%)	3(1.6%)	1(4%)
D) Elsewhere in U.K.					
None	11(17.5%)	13(12.0%)	21(56.8%)	125(64.8%)	12(48%)
1-10%	3(4.8%)	5(4.6%)	2(5.4%)	18(9.3%)	2(8%)
11-50%	5(8.0%)	10(9.3%)	8(21.6%)	17(8.9%)	5(20%)
51-80%	4(6.4%)	5(4.7%)	1(2.7%)	4(2.1%)	0
+80%	16(25.4%)	40(37.0%)	0	1(0.5%)	1(4%)

Table C37 **Location of A.p.s. suppliers to Respondents: Industry group by Suppliers Elsewhere in U.K.**

	Proportion of suppliers elsewhere in U.K.				
Industry	None	1-10%	11.50%	51-80%	+80%
Accountancy	33(58.9%)	4(7.1%)	7(12.6%)	1(1.8%)	1(1.8%)
Advertising	25(56.8%)	5(11.4%)	2(4.5%)	2(4.5%)	5(11.4%)
Architectural	18(58.1%)	1(3.2%)	3(9.7%)	2(6.4%)	5(16.1%)
Corporate banking	6(13.6%)	3(6.8%)	6(13.6%)	2(4.5%)	7(15.9%)
Personal banking	9(18.0%)	3(6.0%)	5(10.0%)	4(8.0%)	7(14.0%)
Computer services	19(43.2%)	1(2.3%)	8(18.2%)	1(2.3%)	7(15.9%)
Corporate finance	38(36.9%)	9(8.7%)	5(4.9%)	5(4.9%)	18(17.5%)
Personal finance	54(40.9%)	10(7.6%)	13(9.9%)	5(3.8%)	18(13.6%)
Corporate insurance	24(28.6%)	8(9.5%)	8(9.5%)	4(4.8%)	14(16.7%)
Personal insurance	47(36.7%)	10(7.8%)	10(7.8%)	6(4.7%)	17(13.3%)
Corporate legal	15(46.9%)	3(9.4%)	4(12.4%)	1(3.1%)	2(6.2%)
Personal legal	18(50.0%)	3(8.3%)	6(16.8%)	0	2(5.6%)
Management consultancy	35(63.6%)	3(5.4%)	3(5.4%)	2(3.6%)	3(5.4%)
Corporate property	13(38.2%)	7(20.6%)	4(11.7%)	1(2.9%)	1(2.9%)
Personal property	19(59.4%)	1(3.1%)	3(9.3%)	1(3.1%)	1(3.1%)
Research and development	3(42.9%)	1(14.3%)	1(14.3%)	0	1(14.3%)
Secretarial services	12(75%)	1(6.3%)	2(12.5%)	0	0
Surveying	19(55.9%)	6(17.6%)	4(11.8%)	1(2.9%)	0
Consultant Engineering	5(33.3%)	1(6.7%)	3(20.0%)	0	1(6.7%)
Other	15(44.1%)	6(17.6%)	4(11.7%)	2(5.9%)	0

Table C38 A.p.s. Firm Usage of A.p.s.: Industry Differences

Industry	Total number (percentage) of firms using Advertising	Architectural services	Banking	Computer services
Accountancy	27(48.2%)	7(12.5%)	41(73.2%)	37(66.0%)
Advertising	33(75.0%)	12(27.3%)	32(72.7%)	22(49.9%)
Architectural	20(64.6%)	0	25(80.6%)	21(67.8%)
Corporate banking	39(88.6%)	33(75.0%)	33(75.0%)	39(88.7%)
Personal banking	45(90.0%)	38(82.0%)	39(78.0%)	45(90.0%)
Computer services	36(81.9%)	17(38.6%)	32(72.8%)	36(81.8%)
Corporate finance	83(80.6%)	44(42.7%)	87(84.5%)	89(86.4%)
Personal finance	102(77.2%)	51(38.6%)	107(81.1%)	102(77.3%)
Corporate insurance	63(75.0%)	34(40.4%)	65(77.4%)	69(82.1%)
Personal insurance	94(73.5%)	42(40.6%)	101(78.9%)	100(78.1%)
Corporate legal	20(62.5%)	8(25.0%)	23(71.9%)	22(68.8%)
Personal legal	20(55.6%)	7(19.4%)	26(72.2%)	22(61.1%)
Management Consultancy	39(70.9%)	15(27.2%)	41(74.6%)	38(69.1%)
Corporate property	25(73.6%)	18(53.0%)	26(76.5%)	20(58.7%)
Personal property	19(59.4%)	15(46.9%)	23(71.9%)	14(43.8%)
Research and development	6(85.8%)	4(57.1%)	4(57.1%)	5(71.5%)
Secretarial	10(62.5%)	2(12.5%)	14(87.6%)	11(68.7%)
Surveying	24(70.6%)	20(58.8%)	29(85.3%)	19(55.9%)
Consultant Engineering	7(46.7%)	5(33.3%)	12(80.0%)	8(53.4%)
Other	23(67.6%)	7(20.6%)	28(82.3%)	23(67.7%)

Table C38 continued

Industry	Total number (percentage) of firms using Financial services	Insurance	Legal services	Management consultancy
Accounting	31(55.3%)	43(76.8%)	39(69.7%)	22(39.3%)
Advertising	25(56.8%)	36(81.8%)	38(86.3%)	14(31.8%)
Architectural	20(64.5%)	28(90.3%)	28(90.3%)	9(29.0%)
Corporate banking	31(70.4%)	38(86.4%)	38(86.4%)	26(59.1%)
Personal banking	37(74.0%)	44(88.0%)	45(90.0%)	29(58.0%)
Computer services	30(68.1%)	41(93.2%)	35(79.5%)	23(52.2%)
Corporate finance	77(74.8%)	89(86.4%)	91(88.4%)	56(54.4%)
Personal finance	90(68.2%)	110(83.3%)	111(84.0%)	60(45.5%)
Corporate insurance	49(58.3%)	66(78.7%)	70(83.2%)	36(42.9%)
Personal insurance	79(61.7%)	101(78.9%)	105(82.0%)	56(43.7%)
Corporate legal	19(59.5%)	25(78.1%)	21(65.7%)	8(25.0%)
Personal legal	20(55.5%)	28(77.9%)	21(58.4%)	6(16.7%)
Management consultancy	35(63.7%)	50(90.9%)	46(83.6%)	32(58.2%)
Corporate property	17(50.0%)	26(76.4%)	23(67.6%)	12(35.3%)
Personal property	18(56.4%)	23(43.7%)	22(68.8%)	9(28.2%)
Research and development	5(71.3%)	6(85.7%)	7(100%)	6(52.3%)
Secretarial	8(50.0%)	15(93.9%)	13(81.3%)	8(50.0%)
Surveying	18(52.9%)	31(91.2%)	28(82.4%)	13(38.2%)
Consultant Engineering	6(40.0%)	11(73.3%)	11(73.3%)	5(33.3%)
Other	21(61.8%)	28(82.4%)	29(85.2%)	14(41.2%)

Table C38 continued

Industry	Property services	Research and development	Secretarial and office services
Accountancy	12(21.4%)	12(21.9%)	36(64.3%)
Advertising	17(38.6%)	13(29.5%)	23(52.3%)
Architectural	14(45.2%)	11(35.5%)	23(74.2%)
Corporate banking	26(59.1%)	33(75.0%)	34(77.3%)
Personal banking	30(60.0%)	25(70.0%)	39(58.0%)
Computer services	19(43.3%)	22(50.1%)	34(77.1%)
Corporate finance	53(51.4%)	54(52.4%)	85(82.5%)
Personal finance	64(48.6%)	59(44.7%)	101(83.2%)
Corporate insurance	38(45.3%)	36(42.9%)	63(75.0%)
Personal insurance	65(50.8%)	55(43.0%)	94(73.4%)
Corporate legal	16(50.0%)	8(25.1%)	19(59.4%)
Personal legal	15(41.7%)	6(16.7%)	24(66.7%)
Management consultancy	20(36.4%)	25(45.5%)	42(76.3%)
Corporate property	20(58.9%)	11(32.3%)	21(61.7%)
Personal property	20(62.5%)	11(34.4%)	21(65.7%)
Research and development	4(57.2%)	7(100%)	5(71.4%)
Secretarial	6(37.5%)	6(37.5%)	14(87.5%)
Surveying	23(67.6%)	10(29.3%)	25(73.5%)
Consultant Engineering	5(33.3%)	5(33.3%)	8(53.3%)
Other	15(44.1%)	12(35.3%)	26(76.4%)

Table C39 **Sheffield and Leeds: Breakdown of Firms by Office Type**

	Leeds		Sheffield	
	Frequency	%	Frequency	%
Multinational branch	39	15.6	24	13.3
U.K. company branch	67	26.8	41	22.8
Local company branch	31	12.4	6	3.3
Single site firm	95	38.0	97	53.9
Head office	16	6.4	9	5.0
No response	2	0.8	3	1.7
	250	100.0	180	100.0

Table C40 **Sheffield and Leeds: Head Office Location**

	Leeds		Sheffield		Leeds	Sheffield
	Frequency	%	Frequency	%	Adjusted	Percentages
London	53	21.2	36	20.0	39.0	50.0
U. K.	75	30.0	35	19.4	55.1	48.6
Overseas	8	3.2	1	0.6	5.9	1.4
Not applicable	112	44.8	106	58.9	-	-
No response	2	0.8	2	1.1		
	250	100.0	180	100.0		

Table C41 **Leeds and Sheffield: Number of Offices**

	Leeds		Sheffield	
	Frequency	%	Frequency	%
1-5	144	57.6	117	65.0
6-10	31	12.4	6	3.3
11-20	12	4.8	1	0.6
21-50	19	7.6	12	6.7
+50	42	16.8	41	22.7
No response	2	0.8	3	1.7
	250	100.0	180	100.0

Table C42 **Leeds and Sheffield: Number of employees**

	Leeds		Sheffield	
	Frequency	%	Frequency	%
1-5	71	28.4	59	32.8
6-10	69	27.6	57	31.7
11-20	48	19.2	31	17.2
21-50	35	14.0	23	12.8
+50	25	10.0	9	5.0
No response	2	0.8	1	0.6
	250	100.0	180	100.0

Table C43 Leeds and Sheffield: Length of Location

	Leeds		Sheffield	
	Frequency	%	Frequency	%
Less than 5 years	146	58.4	51	28.3
More than 5 years	104	41.6	128	71.1
No response	0	0	1	0.6
	250	100.0	180	100.0

Table C44 Leeds and Sheffield: Reason for Location

	Leeds		Sheffield		Leeds	Sheffield
	Frequency	%	Frequency	%	Adjusted	Percentage
Newly established firm	40	16.0	9	5.0	27.4	17.6
Company expansion	44	17.6	13	7.2	30.1	25.5
Relocation of office	59	23.6	29	16.0	40.4	56.9
Other	3	1.2	0	0	2.1	0
Not applicable	104	41.6	128	71.1	-	-
	250	100.0	180	100.0		

Table C45 Leeds and Sheffield: Firms Considering Relocation

	Leeds		Sheffield	
	Frequency	%	Frequency	%
No	213	85.2	163	90.5
Yes	36	14.4	16	8.9
No response	1	0.4	1	0.6
	250	100.0	180	100.0

Table C46 **Leeds and Sheffield: Client Profile by Size and Type**

	Leeds		Sheffield	
	Frequency	%	Frequency	%
A) Individuals				
None	74	35.2	32	20.1
1-10%	36	17.1	21	13.2
11-50%	36	17.1	31	19.5
51-80%	32	15.2	32	20.1
+80%	32	15.2	43	27.0
B) Small Firms				
None	52	24.8	39	24.5
1-10%	50	23.8	42	26.4
11-50%	90	42.9	67	42.1
51-80%	14	6.7	7	4.4
+80%	4	1.9	4	2.5
C) Medium sized firms				
None	58	27.6	60	37.7
1-10%	51	24.3	44	27.7
11-50%	87	41.4	49	30.8
51-80%	14	6.7	5	3.1
+80%	0	0	1	0.6
D) Large Firms				
None	78	37.1	76	47.8
1-10%	39	18.6	38	23.9
11-50%	60	28.6	28	17.6
51-80%	21	10.0	11	6.9
+80%	12	5.7	6	3.8
E) Multinationals				
None	150	71.4	132	83.0
1-10%	28	13.3	18	11.3
11-50%	24	11.4	6	3.8
51-80%	7	3.3	1	0.6
+80%	1	0.5	2	1.3

For Leeds n = 210 and for Sheffield n = 159

Table C47 Leeds and Sheffield: Client Profile by Industry Category

	Leeds		Sheffield	
	Frequency	%	Frequency	%
A) Agriculture				
None	152	77.6	103	69.1
1-10%	41	20.9	40	26.8
11-50%	3	1.5	5	3.4
51-80%	0	0.0	0	0.0
+80%	0	0.0	1	0.7
B) Mining				
None	170	86.7	115	77.2
1-10%	21	10.7	23	15.4
11-50%	4	2.0	11	7.4
51-80%	1	0.5	0	0.0
+80%	0	0.0	0	0.0
C) Manufacturing				
None	43	21.9	21	14.1
1-10%	26	13.3	30	20.1
11-50%	84	42.9	61	40.9
51-80%	32	16.3	25	16.8
+80%	11	5.6	12	8.1
D) Services				
None	14	7.1	15	10.1
1-10%	21	10.7	21	14.1
11-50%	79	40.3	65	43.6
51-80%	41	20.9	25	16.8
+80%	41	20.9	23	15.4

For Leeds n = 196 and for Sheffield n = 149

Table C48 Leeds and Sheffield: Client Profile by Sector

	Leeds		Sheffield	
	Frequency	%	Frequency	%
A) Private				
None	2	1.0	2	1.3
1-10%	3	1.4	4	2.6
11-50%	22	10.4	14	9.3
51-80%	38	18.0	21	13.9
+80%	146	69.2	110	72.9
B) Local or National Government				
None	138	65.4	106	70.2
1-10%	35	16.6	27	17.9
11-50%	30	14.2	15	9.9
51-80%	6	2.8	3	2.0
+80%	2	1.0	0	0.0
C) Nationalised Industries				
None	161	76.3	118	78.1
1-10%	29	13.7	16	10.6
11-50%	20	9.5	15	9.9
51-80%	1	0.5	1	0.7
+80%	0	0.0	1	0.7

For Leeds n = 211 and for Sheffield n = 151

Table C49 **Leeds and Sheffield: Client Location**

	Leeds		Sheffield	
A) Sheffield	Frequency	%	Frequency	%
None	132	60.5	8	4.8
1-10%	63	28.9	9	5.5
11-50%	22	10.1	37	22.4
51-80%	1	0.5	42	25.5
+80%	0	0.0	69	41.8
B) Leeds				
None	17	7.8	130	78.8
1-10%	26	11.9	29	17.6
11-50%	76	34.9	5	3.0
51-80%	66	30.3	0	0.0
+ 80%	33	15.1	1	0.6
C) Elsewhere in Yorkshire and Humberside				
None	30	13.8	58	35.2
1-10%	48	22.0	55	33.3
11-50%	112	51.4	47	28.5
51-80%	24	11.0	4	2.4
+80%	4	1.8	1	0.6
D) Elsewhere in U.K.				
None	64	29.4	43	26.1
1-10%	68	31.2	65	39.4
11-50%	58	26.6	38	23.0
51-80%	17	7.8	15	9.1
+ 80%	11	5.0	4	2.4
E) Overseas				
None	181	83.0	145	87.9
1-10%	30	13.8	15	9.1
11-50%	6	2.7	3	1.8
51-80%	0	0.0	1	0.6
+80%	1	0.5	1	0.6

For Leeds n = 218 and for Sheffield n = 165

Table C50 Leeds and Sheffield: Respondent Firms Usage of Advanced Producer Services

	Leeds		Sheffield	
A) Advertising	Frequency	%	Frequency	%
Not used	61	26.2	44	26.2
External	55	23.6	41	24.4
Internal	99	42.5	68	40.5
Both	18	7.7	15	8.9
B) Architectural services				
Not used	147	63.1	94	56.0
External	47	20.2	36	21.4
Internal	35	15.0	38	22.6
Both	4	1.7	0	0.0
C) Banking				
Not used	48	20.6	26	15.5
External	151	64.8	107	63.7
Internal	30	12.9	33	19.6
Both	4	1.7	2	1.2
D) Computer services				
Not used	65	27.9	43	25.6
External	53	22.7	36	21.4
Internal	99	42.5	78	46.4
Both	16	6.9	11	6.6
E) Financial services				
Not used	86	36.9	61	36.3
External	63	27.0	41	24.4
Internal	74	31.8	59	35.1
Both	10	4.3	7	4.2
F) Insurance services				
Not used	35	15.0	21	12.5
External	129	55.4	80	47.6
Internal	62	26.6	63	37.5
Both	7	3.0	4	2.4

Table C50 continued

	Leeds		Sheffield	
	Frequency	%	Frequency	%
G) Legal services				
Not used	41	17.6	22	13.1
External	136	58.4	91	54.2
Internal	43	18.5	46	27.4
Both	13	5.5	9	5.3
H) Management consultancy				
Not used	134	57.5	100	59.5
External	32	13.7	16	9.5
Internal	64	27.5	46	27.4
Both	3	1.3	6	3.6
I) Property services				
Not used	124	53.2	87	51.8
External	49	21.0	26	15.5
Internal	54	23.2	50	29.8
Both	6	2.6	5	3.0
J) Research and Development				
Not used	138	59.2	99	58.9
External	18	7.7	7	4.2
Internal	65	27.9	58	34.5
Both	12	5.2	4	2.4
K) Secretarial services				
Not used	54	23.3	54	32.1
External	15	6.4	5	3.0
Internal	159	68.2	108	64.3
Both	5	2.2	1	0.6

For Leeds n = 233 and for Sheffield n = 168

Table C51 **Leeds and Sheffield: Location of a.p.s. Suppliers**

	Leeds		Sheffield	
	Frequency	%	Frequency	%
A) Sheffield				
None	184	95.8	26	18.6
1-10%	5	2.6	9	6.4
11-50%	3	1.6	19	13.6
51-80%	0	0.0	13	9.3
+80%	0	0.0	73	52.1
B) Leeds				
None	45	23.4	119	85.0
1-10%	13	6.8	13	9.3
11-50%	30	15.6	2	1.4
51-80%	20	10.4	2	1.4
+ 80%	84	43.8	4	2.9
C) Elsewhere in Yorkshire and Humberside				
None	136	70.8	111	79.3
1-10%	20	10.4	21	15.0
11-50%	23	12.0	8	5.7
51-80%	6	3.1	0	0.0
+80%	7	3.7	0	0.0
D) Elsewhere in U.K.				
None	105	54.7	78	55.7
1-10%	17	8.8	14	10.0
11-50%	22	11.5	23	16.4
51-80%	9	4.7	6	4.3
+80%	39	20.3	19	13.6

For Leeds n = 192 and for Sheffield n = 140.

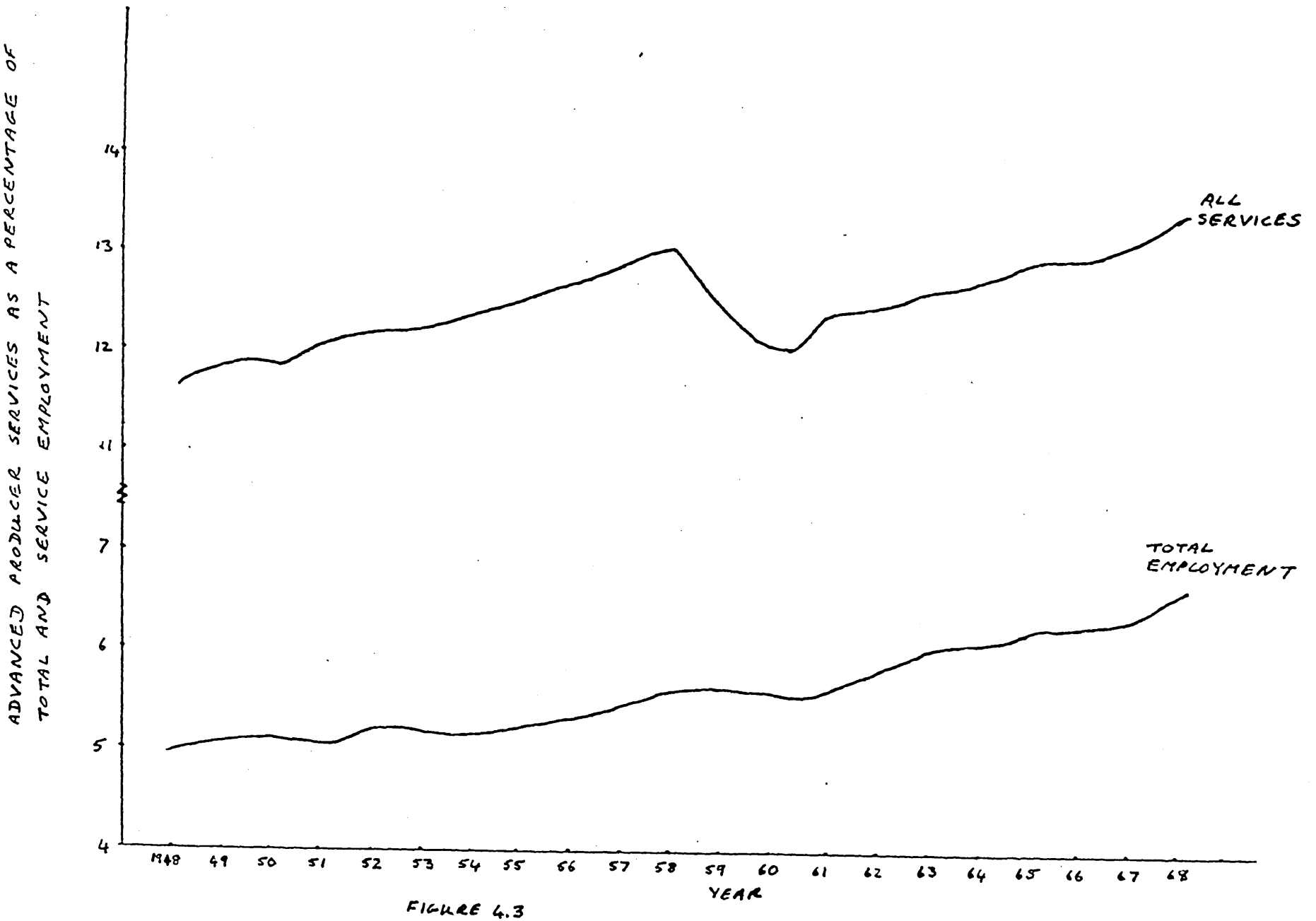

ADVANCED PRODUCER SERVICES AS A PERCENTAGE OF TOTAL AND SERVICE EMPLOYMENT
14
13
12
11
7
6
5
4
ALL SERVICES
TOTAL EMPLOYMENT
1948 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68
YEAR

FIGURE 4.3

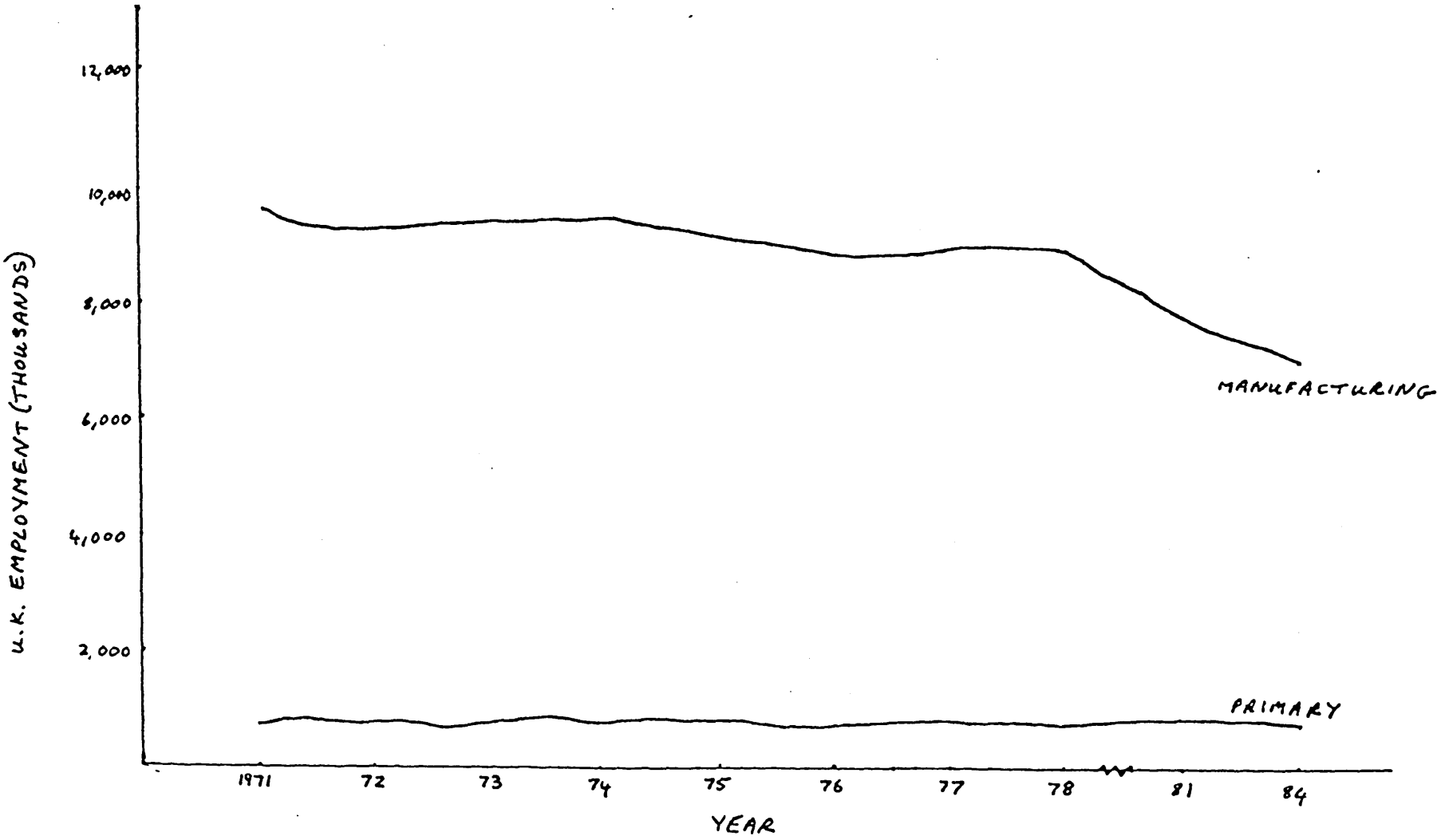

12,000
10,000
8,000
6,000
4,000
2,000
U.K. EMPLOYMENT (THOUSANDS)
MANUFACTURING
PRIMARY
1971
72
73
74
75
76
77
78
81
84
YEAR

FIGURE 4.4.

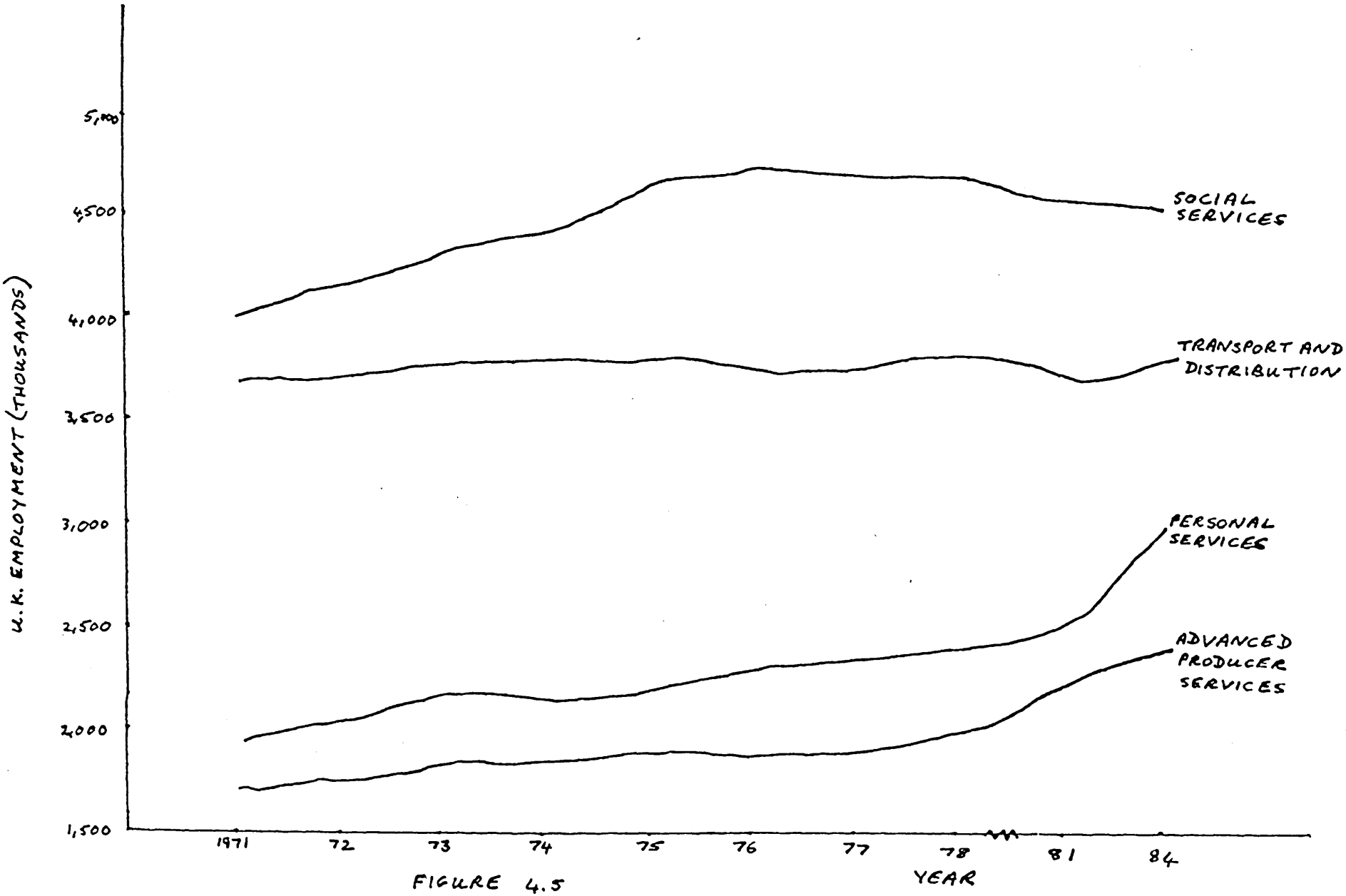

U.K. EMPLOYMENT (THOUSANDS)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1971
72
73
74
75
76
77
78
81
84
YEAR
SOCIAL SERVICES
TRANSPORT AND DISTRIBUTION
PERSONAL SERVICES
ADVANCED PRODUCER SERVICES

FIGURE 4.5

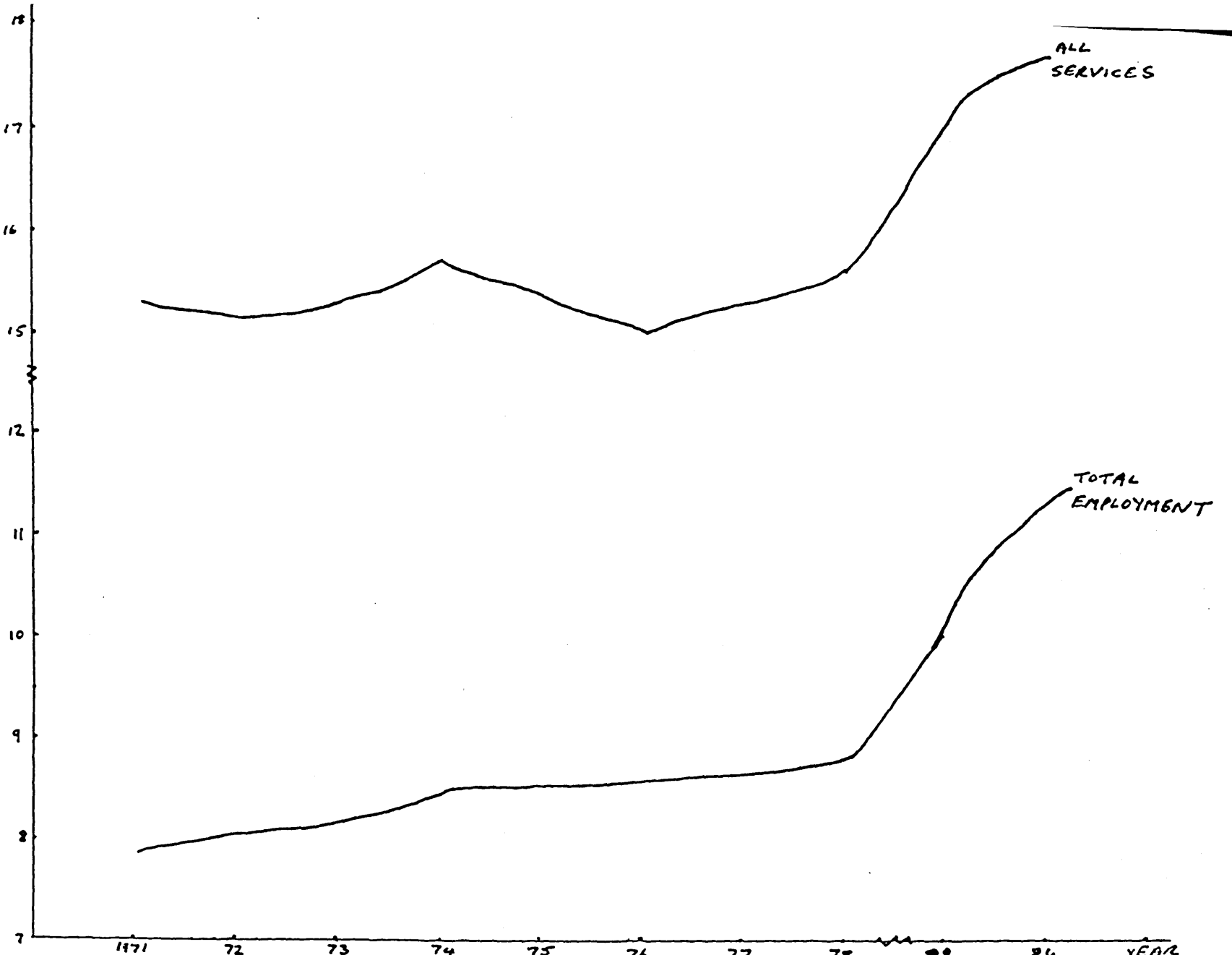

ADVANCED PRODUCER SERVICE EMPLOYMENT AS A PERCENTAGE OF TOTAL EMPLOYMENT. AND SERVICE EMPLOYMENT
18
17
16
15
12
11
10
9
8
7
ALL SERVICES
TOTAL EMPLOYMENT
1971
72
73
74
75
76
77
78
79
84
YEAR

FIGURE 4.6.

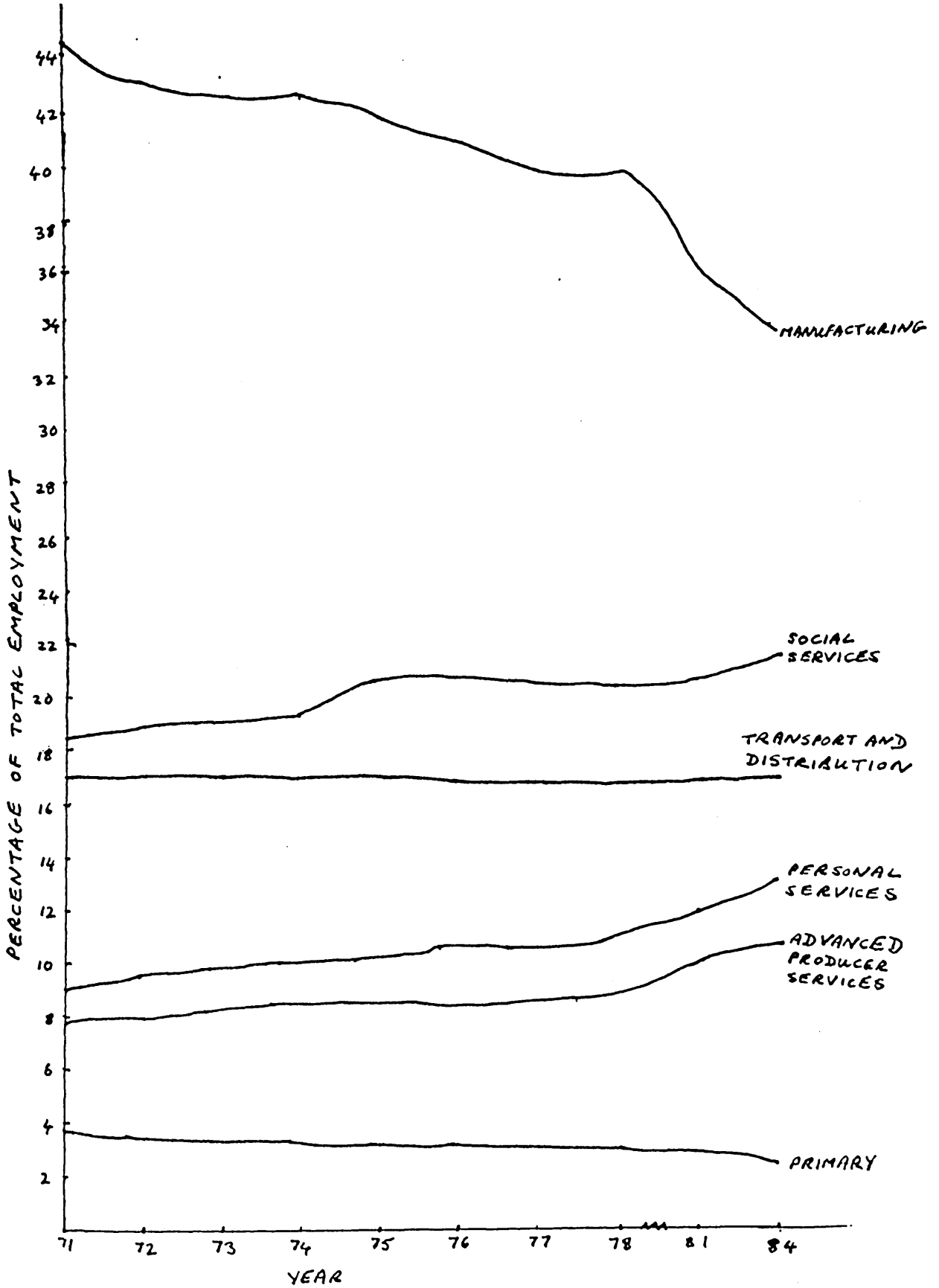

PERCENTAGE OF TOTAL EMPLOYMENT
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
MANUFACTURING
SOCIAL SERVICES
TRANSPORT AND DISTRIBUTION
PERSONAL SERVICES
ADVANCED PRODUCER SERVICES
PRIMARY
71
72
73
74
75
76
77
78
81
84
YEAR

FIGURE 4.7

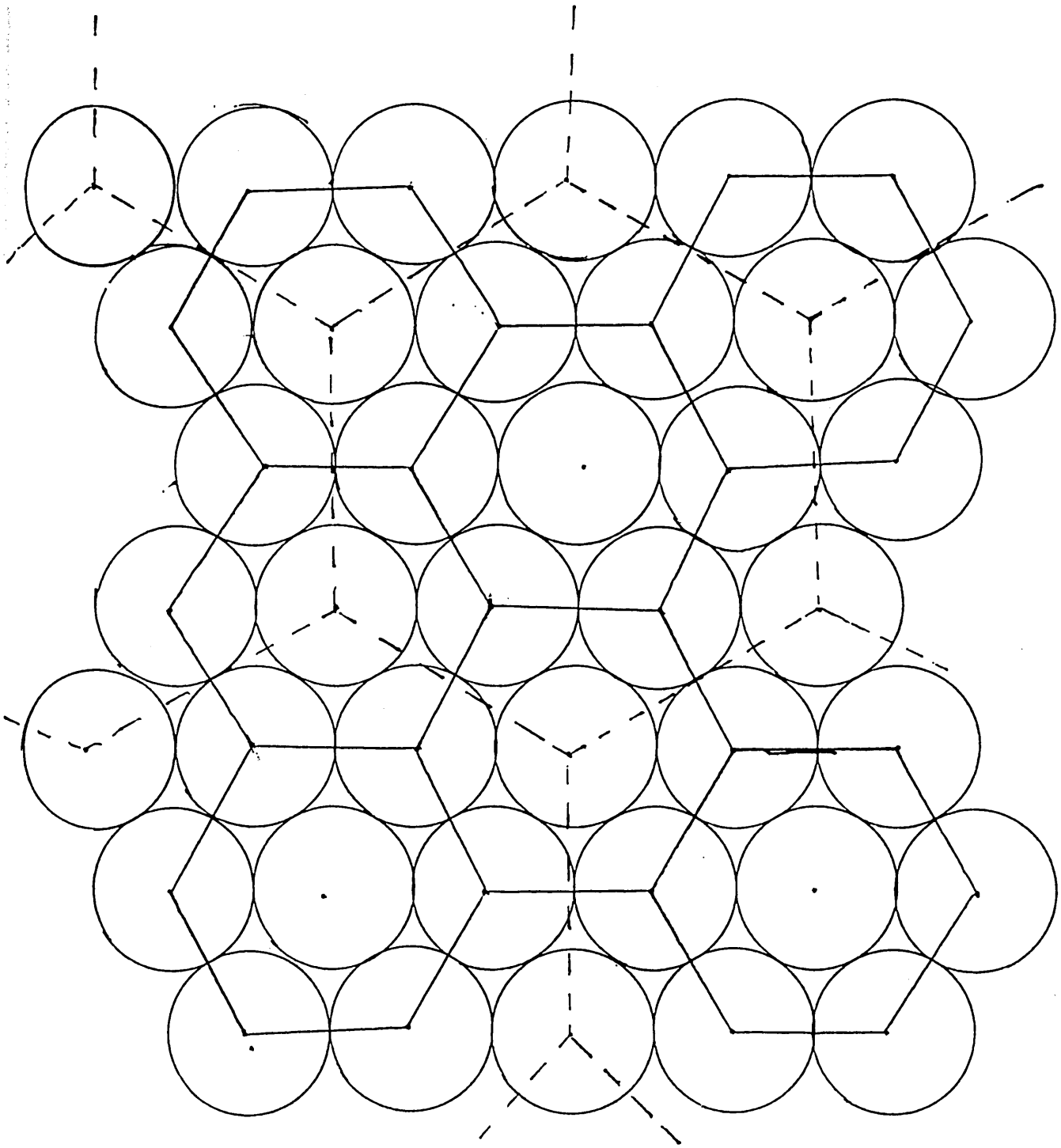


FIGURE 3.3. MARKET AREAS AS DEFINED BY CENTRAL PLACE THEORY

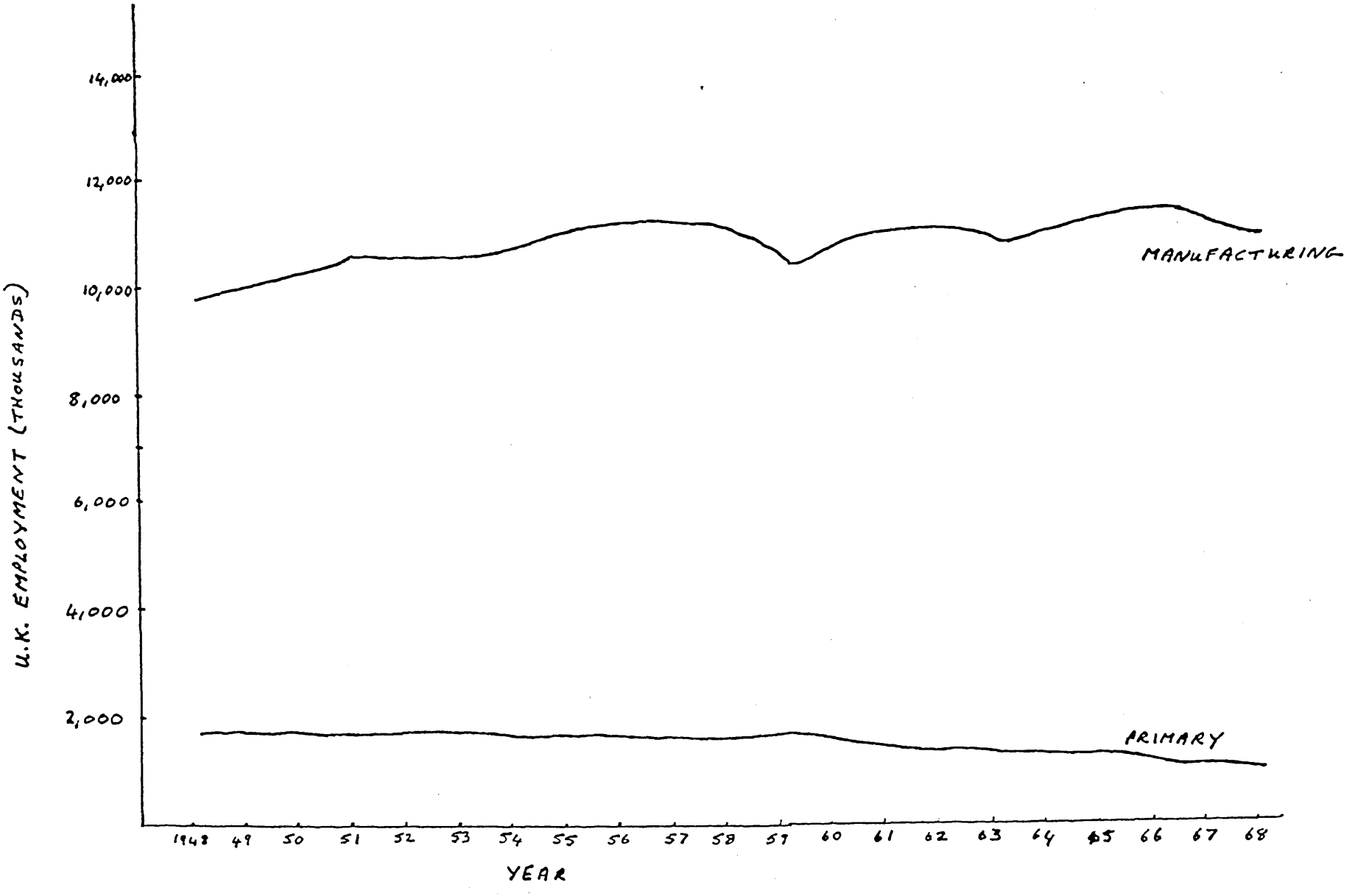

U.K. EMPLOYMENT (THOUSANDS)
14,000
12,000
10,000
8,000
6,000
4,000
2,000
MANUFACTURING
PRIMARY
1948 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68
YEAR

FIGURE 4.1

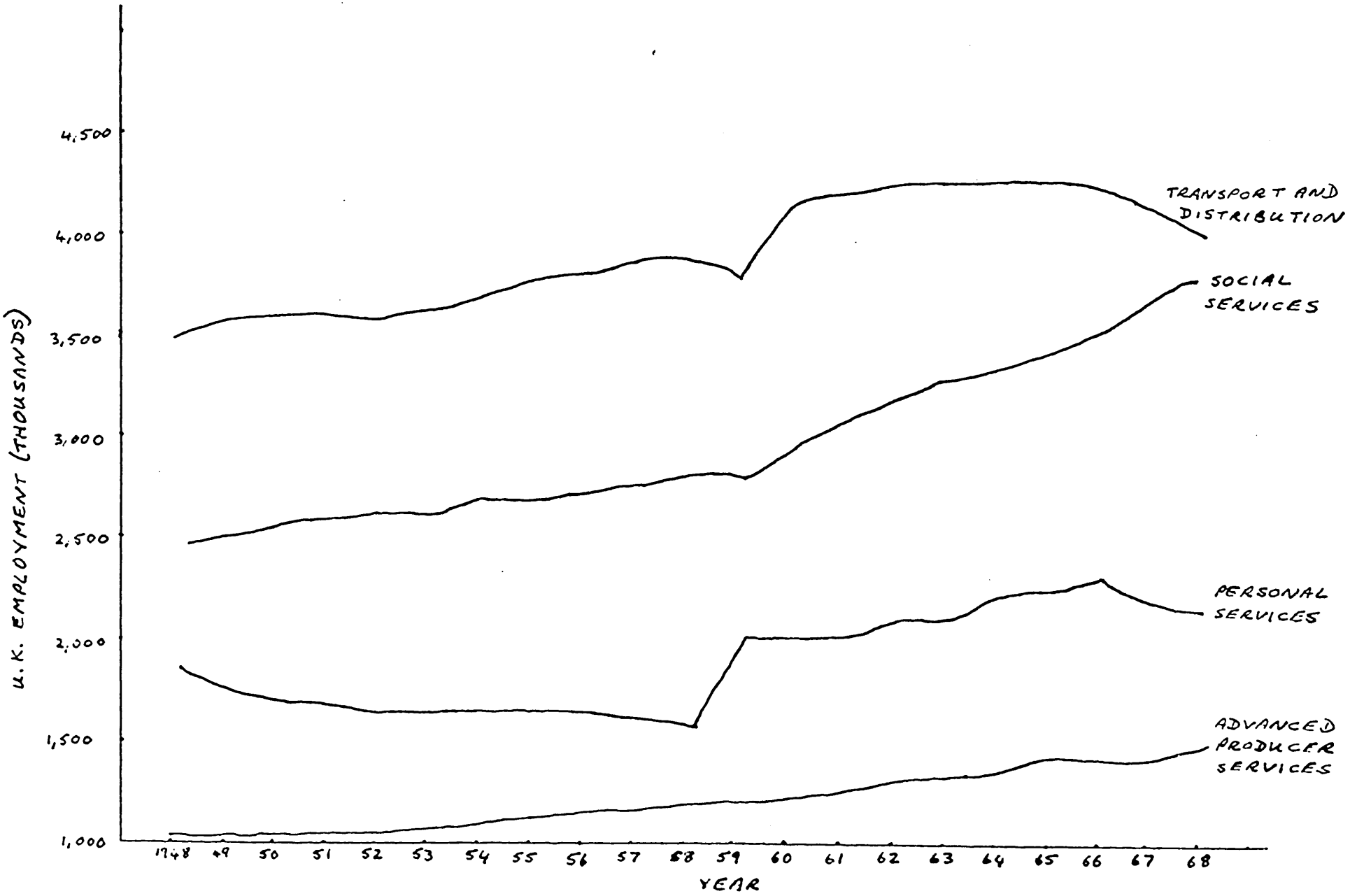

4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
U.K. EMPLOYMENT (THOUSANDS)
TRANSPORT AND DISTRIBUTION
SOCIAL SERVICES
PERSONAL SERVICES
ADVANCED PRODUCER SERVICES
1948 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68
YEAR

FIGURE 4.2.