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NESTED DYNAMICS OF METROPOLITAN
PROCESSES AND POLICIES - *LEEDS*

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3. Lesse, P.F. (1983) The Statistical Dynamics of Socio-Economic Systems. Collaborative Paper, CP-83-51. IIASA, Laxenburg, Austria.
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FOREWORD

BACKGROUND PAPERS FOR THE METROPOLITAN STUDY: 2

The Project "Nested Dynamics of Metropolitan Processes and Policies" was initiated by the Regional and Urban Development Group in 1983 and work on this collaborative study started in 1983. This series of contributions represent "entry tickets" to the Project, i.e., initial statements by authors from individual metropolitan regions that are participating in the Project's network.

The aim of these papers is threefold. First, to provide some background information describing the processes of change within four principal subsystems: population, housing, economy and transportation. Second, to identify major trends and crucial policy issues which are to constitute a focus for the subsequent analytical and modeling work. Third, to facilitate comparative studies of development paths among these regions and the dynamic interdependencies between the above subsystems.

The background material contained in this paper pertains to the Leeds metropolitan region.

Ake E. Andersson
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November 1984



ABSTRACT

This paper contains an analysis of change in the City of Leeds over the past 35 years. The planning background and some of the problems in interpreting urban dynamics are outlined.

Recent change in Leeds has been influenced by the legacy of the rapid growth of the city in the nineteenth century, for example in terms of the quality of housing and the dependence on the clothing industry. Since 1951 Leeds has been subject to considerable net out-migration. In the first part of the period the birth rate was such that the population increased, but more recently, out-migration has exceeded natural change, so that the population has declined. There have been decreases in the mean household size and the activity rates. There has been a slowing down in the residential mobility rate, and shifts from the privately rented sector. The housebuilding rate has been sufficient to cause a reduction in the number of households sharing. New dwellings have tended to be built on new land rather than land used previously. Thus there has been a physical expansion of the city, which has encouraged the decentralisation process. This has been related to the rise in car ownership, which has led to substantial shifts from bus to car. Employment has also decentralised, but there has been an even more significant shift from manufacturing to service sectors, as many of the industries upon which Leeds was dependent have declined. These have been replaced by regional service functions to some extent.



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NESTED DYNAMICS OF METROPOLITAN PROCESSES -. LEEDS

Roger L. Mackett

1. Introduction

Leeds is a city in the north of England which grew very rapidly during the Industrial Revolution, with an economy based mainly on the wool clothing industry and heavy engineering. As part of the urbanisation process housing was built at very high densities, often with poor sanitary facilities. The legacy of this period of growth has implications for housing and economic policy today. During the twentieth century the rate of growth of the population of the city slowed down, and in more recent years it has started to decline.

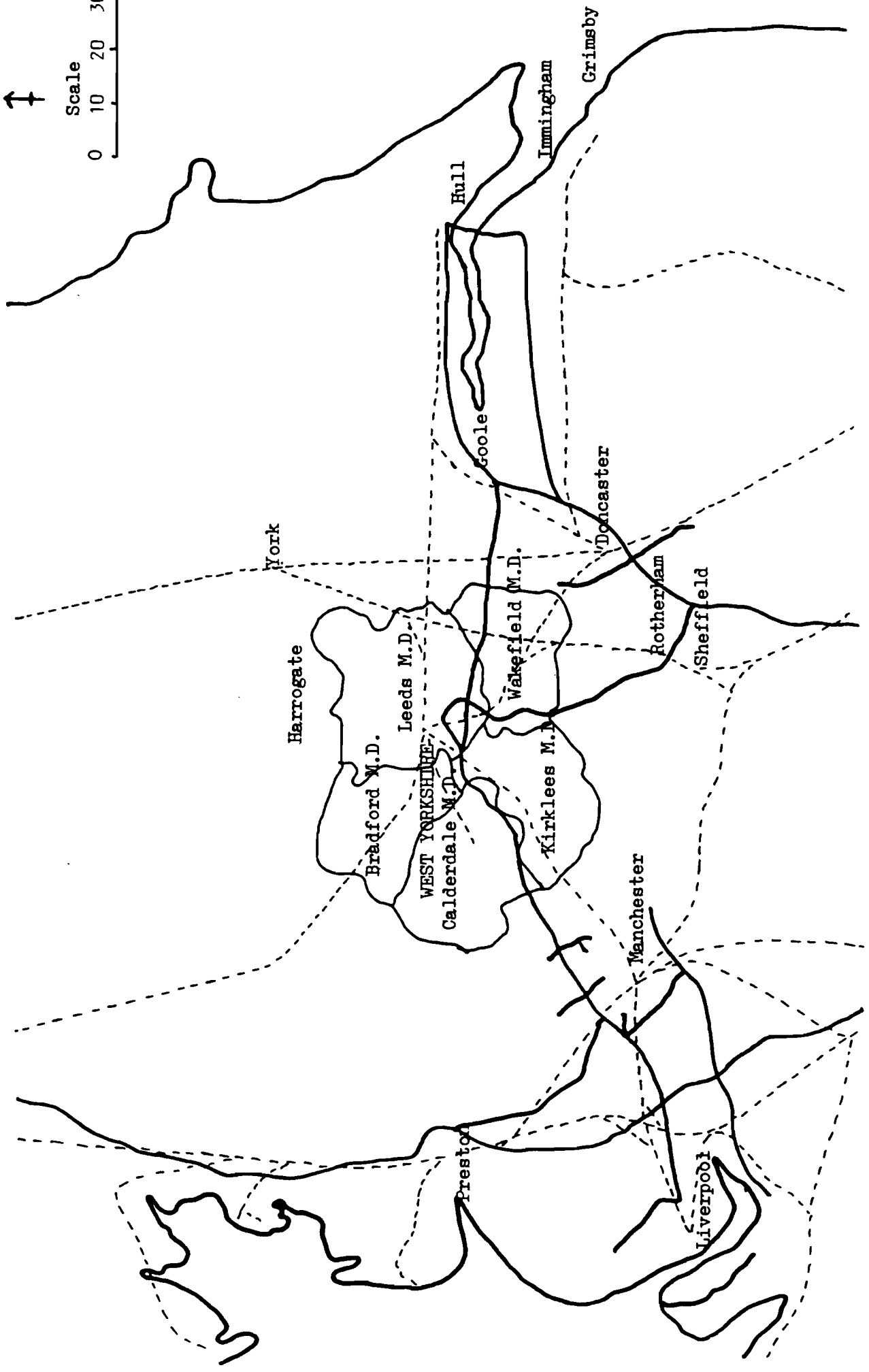
Prior to the reorganisation of local government in 1974 Leeds was in the county of the West Riding of Yorkshire. The city was then a county borough, most of the area of which had been developed, and corresponds fairly well to the present urbanised area. Following the reorganisation of local government in 1974 Leeds, with a population of about 700 000, became one of the five metropolitan districts of the new county of West Yorkshire. While the county is regarded as a conurbation, the five major urban areas (including Leeds) are all free-standing, separated by open countryside with relatively little interaction between them. The location of Leeds is shown in Figure 1.

Leeds is a small city by world standards, but this is partly because it has already gone through most of the stages of urban change, from rapid urbanisation to post industrial decline, with the transformation from an industrial city to a regional commercial centre. Other cities which have grown during the age of the motor car are likely to be larger, but they have yet to go through the processes exhibited by the city of Leeds.

In the next section the planning background is discussed. This is followed by some comments on the problem of interpreting dynamic change in an urban area. The way in which the historical development of Leeds influences the present city is described in Section 4. The dynamics of the housing, economic and transport sectors, and their inter-relationships are then discussed, in the following three sections, after which some conclusions are drawn.

N ↑

Scale
0 10 20 30km



Motorways — Main railways - - - - -
Figure 1 The Location of Leeds

2. The Planning Background

Prior to 1947 land use planning in England was based on a system of land zoning, with development allowed within the appropriate zone of land use. Once the land had been zoned planners had no control over development as long as it conformed to the zoning system. Under the 1947 Town and Country Planning Act local authorities (counties and county boroughs) were required to produce Development Plans, consisting of a Written Statement, various maps and a Report of Survey. The maps (County Map, where appropriate, Programme Map and Town Maps) indicated the developments expected during the 20 years of the plan and the corresponding pattern of land use. Planning permission had to be obtained from the local authority for all development, to ensure conformity with the Development Plan. Leeds produced its Development Plan in October 1951, it was approved by the Minister of Housing and Local Government in April 1955. Under the Act a review of the Plan had to be carried out every five years. In fact the Development Plan Review for Leeds was submitted in 1968 and approved in 1972.

Problems arose under this system because of the lack of flexibility. Plans could not be adjusted to meet new needs, for example resulting from the growth of car ownership and shifts in demographic characteristics. Consequently, they became out of date. In 1964 the government set up the Planning Advisory Group to review the planning system. In the report 'The Future of Development Plans', published in 1965, a new type of plan called Structure Plans were proposed. The recommendations of the Group were implemented under the 1968 and 1971 Town and Country Planning Acts. Structure Plans consist of a Written Statement of policies on development and the use of land, plus diagrammatic maps. The survey, that is the supporting document containing background information, covered broader topics than under the previous system, for example on the major economic and social forces and the development of the region. Within this framework local plans were drawn up, consisting of three types: district plans, action area plans and subject plans.

Under the 1972 Local Government Act the responsibilities for planning were changed with the upper (county) level responsible for strategic planning under the Structure Plan, and the lower (district) level producing the Local Plans. This means that planning policy for a city like Leeds is based on two sources: the West Yorkshire County Structure Plan and those devised by the Planning and Development Committee of Leeds City Council. The Structure Plan was approved by the Secretary of State for the Environment in July 1980, and so forms the basis of the policies and general proposals for the County, for a period of 10-15 years. However, only when the Local Plans devised by Leeds City Council have been certified by the County Council as being in accordance with the Structure Plan will the old Development Plan Review cease to have statutory force.

One of the major topics of the plans is housing, which is also

the subject of other legislation. Slum clearance had been carried on in cities like Leeds since the last century. The Second World War led a slowing down of the clearance programme and a shortage of building materials. The programme was resumed in the mid-1950's, but there was a gradual shift from slum clearance to improvements of dwellings and areas. Various legislation reflects this change of emphasis. Money from Central Government for cities like Leeds to meet their housing needs is allocated on the basis of a submission under the Housing Investment Programme, and is used for urban renewal, improving the council's own housing stock and for building, usually to meet specific needs such as schemes for the elderly and the disabled. During the early 1970's money was allocated to areas of multiple deprivation under the Urban Programme. In the mid-1970's the problems of inner cities became more evident, and in 1978 the Inner Urban Areas Act was passed to give various powers (and money) to local authorities with severe problems. The areas with the severest problems were declared 'Partnership Areas'. Others, such as Leeds, were made 'Programme Authority Areas', which meant that an inner area programme had to be drawn up, and the local authority received finance to cover the cost of specific projects. The area of Leeds declared to be the Inner City under the Act included not only the core of the city built in the 19th century, but also large areas of public housing on the urban periphery built in the 1920's, 1930's and 1950's, which gives an indication of the nature of these areas, with their social problems. More recently, with the change of government to the Conservatives there has been a shift of emphasis in the Urban Programme from improving housing and social conditions to economic regeneration. In other parts of the country 'Enterprise Zones' have been defined, so that investment can be encouraged outside the normal planning system, but none have been declared in Leeds.

Transport planning was one component of the Development Plan process, despite the fact that it was often carried out in a separate department from physical (or land use) planning. After local government reorganisation in 1974 transport became a county function, as part of the Structure Plan process. However, money is allocated to counties both for capital investment and to subsidise public transport under the Transport Policies and Programme (TPP) system, whereby each county draws up and costs a programme for transport expenditure and the Government allocates funds on the basis of these statements.

A further component of planning in England is the regional dimension. During the 1960's an awareness of regionalism grew. After the 1964 general election when the Labour Party came into power, they set up the regional economic planning machinery, partly because it was believed that the uneven distribution of employment had serious economic effects on the national economy. In 1966 Development Areas were set up, and then in 1969 Intermediate Areas were designated, including the Yorkshire coalfield area south of Leeds, but Leeds did not become an Intermediate Area until the 1972 Industry Act. Also in the late

1960's a number of joint studies between neighbouring local authorities were set up; these were often termed 'sub-regional studies', and were the first users of land use modelling techniques in Britain. During the 1970's regional policy shifted with the change of government, with the Regional Economic Planning councils abolished in 1979, and emphasis placed on aid to inner urban areas. However, in the last two years there has been a renewal of interest in regional policy as the problems of regional disparity have become more evident.

During 1983 the Government announced its intention of abolishing the Greater London Council and the Metropolitan Councils, including West Yorkshire. While the final arrangements have not yet been completed, it is envisaged that the responsibility for planning will be split between the District Councils (such as Leeds), joint committees of the various District Councils, and the regional offices of the relevant Government Departments.

Other functions which affect the city and its inhabitants such as the provision of water and health care are the responsibility of statutory authorities, the members of which are appointed by the central Government. Thus, these bodies are not subject to democratic control.

It is against the background briefly described above that change in British cities has occurred. It is difficult to assess exactly how much effect the legislation has had on the cities; in many cases the legislation reflected the problems of the cities and the inadequacy of the existing planning system to solve them.

3. Interpreting Urban Dynamics

One of the major problems in interpreting the dynamics of a city is that the data are almost inevitably cross-sectional rather than longitudinal, so that the change can only be inferred by examining information at two or more points in time.

The main source of information for this study is the Census of Population carried out every ten years (1951, 1961, 1971 and 1981), plus a 10% sample census in 1966. This is a very valuable source of data, but a number of problems arise. The basic spatial unit is the enumeration district (E.D.), which represents the 200 or so households for which one census enumerator is responsible. These are redefined for each census. These E.D.'s may be aggregated to wards, which are the basic electoral units for local government. These also are changed, to reflect shifts in the population pattern. On top of this, the whole basis of local government was changed in 1974, so that boundaries that had existed for about 100 years were changed. To obtain spatially consistent zones for analysis has required a certain amount of ingenuity. The basic units used have been the wards in use from 1958 to 1968, for which data from the 1961 and 1966 Censuses are available, with some information for 1951 available from the 1961 census for these units. The data for 1971 and 1981 have been aggregated from the E.D. level to these wards. Data from the

1971 census have been published for both the pre- and post-local government reorganisation units. Some information for earlier years for Leeds Metropolitan District and the new county of West Yorkshire has been issued by the County. In some cases data are only available for the area of Leeds CB, in others for the larger Metropolitan District. The area being used is indicated in the tables of values.

The three spatial units for description in this study are the core, the suburbs and the rural fringe. The core is the eight wards (as defined above) in the centre of the city, representing the central business district, the central industrial area, and the immediately surrounding areas of urban decline. The suburbs are the rest of the County Borough. The rural fringe is the area in Leeds Metropolitan District that was outside the old County Borough. These are shown in Figure 2.

A related problem is the change of definition from one census to the next. Often this reflects appreciation of problems in the previous census. For example, in Leeds many large old houses have been divided into flats which are occupied by young people. In some cases these people will have common housekeeping, in others they will behave as separate households. The 1981 census contains information which permits clearer understanding of the number of households and dwellings and the sharing of dwellings. Unfortunately this makes some temporal comparisons more difficult, because it is not always clear how such categories were represented previously. It also means that residual categories (that is, those described as 'other') generally become smaller over time.

Confidentiality of the data causes further problems. Various techniques are used to prevent information about individuals being revealed. If the number in a cell in a data matrix is very small it may be suppressed. In addition in the 1971 and 1981 Censuses the statistics were modified by the addition of quasi-random permutations (+1, 0, -1) to the values. This affects most values for areas other than Leeds MD. It also means that the sum of some items in the tables does not equal the stated total, and that there may be discrepancies between the values in the various tables.

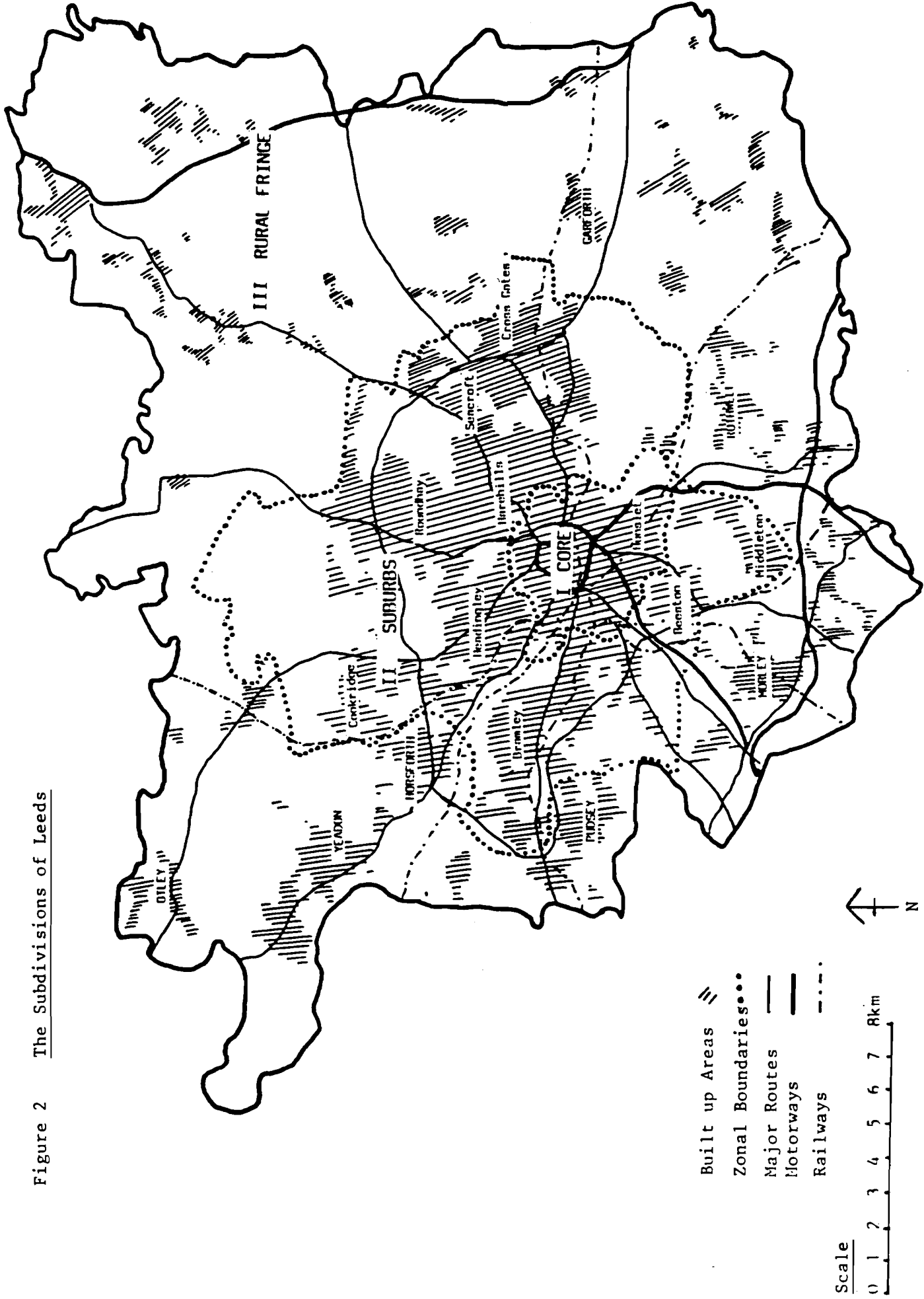
4. The Legacy of the Past

Leeds is a large northern city which grew rapidly and prospered during the Industrial Revolution. In the 20th century there has been a slowing down in the rate of population growth, as shown in Table 1. This early rapid growth has left a physical infrastructure that still causes many planning problems and so influences land use and transport planning policy formulation.

Leeds' prosperity was initially based on wool textiles, using wool from the nearby Pennines and was an important marketing centre for both industrial and agricultural goods (Sigsworth, 1967). Leeds' coal deposits near the city (some still being mined today at Temple Newsam) enabled a broad industrial base to be established including engineering, pottery and chemicals. Clearly the workers in these industries had to be housed, and as Beresford (1967) has shown, higher quality houses tended to be built along the valleys to the north of the city centre toward Otley and Harrogate encircling earlier villages such as Headingley, with lower quality residences along Kirkstall Road, Burley Road and York Road, with intermixing of working class housing and heavy industry south of the river. One of the most noticeable features of Leeds's housing even today is the large proportion of back-to-back houses. Despite the outlawing of these high density developments (about 200 houses to the hectare) by the Housing, Town Planning etc. Act, 1909, Leeds used a loophole in the law to continue their building until 1937. Today the worst of the old housing has been removed but there are still houses in the city without hot water, fixed bath or inside w.c. Prior to the Act of 1909 local authorities had no power to control the siting of houses (Minett, 1974), which meant that earlier development was based on the economic desires of the builders and land owners rather than any planning or social objectives. With the passing of the Housing, Town Planning etc. Act of 1919 (Cherry, 1974) local authorities were able to move into the role of developer. In Leeds this meant new housing estates in Middleton, Meanwood and Gipton, and the building of Quarry Hill Flats on land cleared by demolition, to house people from the overcrowded slums (Fowler 1967). In 1949, Leeds possessed 90 000 dwellings regarded as sub-standard out of a total of 154 000. Of the 90 000, 56 000 were back-to-back, of which 16 000 were built before 1844 (City and County Borough of Leeds, 1949).

Complementary to the growth of the land use pattern was the development of the transport system. Roads were built and improved to link Leeds with the villages which were rapidly being engulfed in the growing city as industry thrived. The Leeds-Liverpool Canal and the Middleton colliery railway were both important in serving the industrial growth, but are of little significance today. Public transport was initially stage-coach along the arteries in the mid-19th century (Dickinson 1967), but these were initially too expensive for mass commuting. Between 1871 and 1874 the horse tram was introduced into both middle class and working class areas, although again, the fare structure

Figure 2 The Subdivisions of Leeds



Year	Population
1685	7 000
1725	12 000
1775	17 000
1801	30 000
1861	207 000
1871	259 212
1891	367 505
1901	428 968
1921	458 232
1931	482 827
1951	505 880
1961	510 676
1966	504 630
1971	496 009
1981	431 622

Table 1 Population in Leeds County Borough

Source: M W Beresford, and G R J Jones,
Leeds and its Region, 1967, British
Association for the Advancement of
Science. Census of Population, 1961,
1966, 1971, 1981.

militated against usage by the very poor. Further lines in working class areas were opened in 1878-9 and cheaper housing began to be built in the predominantly middle-class areas of Far Headingley and Chapeltown. The introduction of steam-trams does not seem to have had much influence on the land use pattern, but two events in the 1890's led to great changes in the pattern of journey to work movements - the introduction of the electric tram in 1891 and the Corporation purchase of the tram system in 1894. This led to dramatic reductions in fares, early morning workmen's services and greater service frequency. These factors led to much greater use of the service, with consequent opening up of many new residential areas, and so rapid physical spread of the city. After the turn of the century tram routes were extended beyond the city boundary, offering cheap travel over fairly long distances, leading to the linking of the towns of the West Yorkshire conurbation not only by efficient transport, but also by urban sprawl. In a few instances the Corporation stimulated new development by introducing tram routes into 'green-field' sites, such as Lawnswood, Halton and Roundhay.

Railways have never been as important in Leeds as in many other cities, partly because of topography, partly because of the compact form of the city, and perhaps because of the efficient tramway system. No railway line ran through the smarter northern suburbs, and so there was little middle-class rail commuting. The most successful intra-urban line was the eastern line from Cross Gates. There were longer distance rail commuting trips from Harrogate, Ilkley, Menston and Burley, but again the fares policy meant that these services were restricted to the relatively wealthy.

Between the Wars bus services began to take over from trams because their greater flexibility meant that they could penetrate the new estates, and respond to new developments much more quickly. Rivalry between bus and rail operators and between bus companies led to low fares and frequent services. This permitted more and more people to commute fairly long distances, encouraging ribbon development along several routes such as Leeds-Guiseley-Burley in the 1930's. Dickinson (1967) notes an interesting result from this increased commuting by the lower social groups. Several of the new developments, for example, Tinshill, Lawnswood and Austhorpe, started out as areas of cheap housing, but as the advantages became more widely appreciated, prices rose and the areas moved up the social scale as larger more expensive houses were built.

Thus, at the time of the Second World War Leeds was a city which had an industrial and housing pattern resulting from the rapid growth during the 19th century and an efficient transport system based on trams, and more recently buses.

5. Population and Housing

As indicated in Table 1, the population in the area of Leeds CB reached its peak about 1960. However, like most British cities Leeds has been undergoing a process of decentralisation. In fact it was partly this process of spreading of the influence of cities that led to the need for local government reorganisation, so that the administrative area of Leeds was increased from 16 434 hectares to 56 215 hectares, with an increase in population of about 45%. The area that was brought into Leeds was mainly rural, with a number of free-standing towns. Over time many people have out-migrated from the urban area to this rural fringe. Consequently, the population of Leeds MD continued to grow, even after that of Leeds CB had begun to decline. However, as shown in Table 2, the population of even Leeds MD had begun to decline by 1981. In fact it is showing quite rapid decline and had fallen almost to the 1951 level by 1981. The population level in the whole county has shown a similar trend to that of Leeds MD, but with a slower rate of decline. The more rapid decline in Leeds may well be due to the availability of housing to the north and east outside the county. Commuting across the county boundary to the three metropolitan districts in the south of the county is likely to occur to a lesser extent because of the nature of the housing and labour markets in those areas, plus the existence of the Pennine Hills to the west of the county. There has been a slowing down in the growth of the population in Great Britain, mainly because of the fall in the birth rate. Even when the population of Leeds was growing, its share of the population in the nation was decreasing, and this has accelerated in recent times.

While Leeds contains less than 2% of the population of Great Britain, the population of the District makes it the third largest local authority in England and Wales after Greater London and Birmingham MD (and largest in area after London). Manchester MD and Liverpool MD are smaller in population than Leeds MD, but are part of larger urban agglomerations. As already mentioned, the West Yorkshire conurbation contains several large urban areas, of which Leeds is the largest, but the level of interaction between them is relatively low.

The net change in the level of population can be divided into two components - natural change and migration, as shown in Table 3. Since 1951 Leeds MD and West Yorkshire have been showing out-migration, and the rate is increasing. Natural change (births minus deaths) increased during the 1960's, but has fallen during the 1970's, mainly because of the fall in the birth rate. During the 1950's and 1960's, the population increase because of natural change exceeded the loss by migration, but during the 1970's, the net out-migration exceeded the natural change, so the population of Leeds MD fell. The population in West Yorkshire follows the same trend as that for Leeds, but has shown a slower rate of out-migration in recent years.

Migration can also be examined by considering the proportion of

	1951	1961	1966	1971	1981
Leeds CB	505 880	510 676	504 630	496 009	431 622
Leeds MD	694 514	712 970	724 490	738 930	696 714
West Yorkshire	1 985 546	2 005 434	2 028 990	2 067 642	2 037 165
Great Britain	48 854 303	51 283 892	52 303 720	53 978 538	54 285 422
Leeds MD as % of Great Britain	1.42	1.39	1.39	1.37	1.28

Table 2 Population in Leeds, West Yorkshire and Great Britain

Source: Census of Population, 1951, 1961, 1966, 1971, 1981.
West Yorkshire Metropolitan County Council, Facts and
Figures, 1975.

Note: CB = County Borough
MD = Metropolitan District

	1951 - 1961			1961 - 1971			1971 - 9181		
	Total change	Natural change	Migra- tion	Total change	Natural change	Migra- tion	Total change	Natural change	Migra- tion
Leeds MD	+18 456	+27 216	- 8 760	+25 961	+ 39 727	-13 766	-34 045	+ 3 695	-37 741
%	+2.66	+3.92	-1.26	+3.64	+5.57	-1.93	-4.61	+0.50	-5.11
West Yorkshire	+19 888	+58 959	-39 070	+62 208	+104 547	-42 339	-30 477	+20 056	-50 533
%	+1.00	+2.97	-1.97	+3.10	+5.21	-2.11	-1.47	+0.97	-2.44

Table 3 Population Change, Leeds MD and West Yorkshire, 1951-1981

Source: Office of Population Censuses and Surveys, Local Authority Vital Statistics
West Yorkshire Metropolitan County Council, Fact and Figures, 1975

the population moving home. Table 4 shows the proportion of the population of Leeds CB with a different address one year earlier. There has been a slow, but continuous downward trend over time. This appears to contradict the evidence of Table 3, which showed an increase in the migration rate over time. However, Table 4 refers to movement into houses in Leeds and applies only to the area of Leeds CB. Over time there has been fewer people moving into Leeds CB, and many of those who have moved home within the Leeds urban system will have been moving outwards, and have moved into the rural fringe. There may also be fewer people moving home within Leeds because of economic recession, because fewer new houses are available and because fewer people can afford to move home. Furthermore, the local authority has changed its policy in urban redevelopment, by changing from a policy of moving population from one area to another, to a policy of area improvement. These effects will be considered in more detail later.

The demographic characteristics of the population are changing over time, as shown in Table 5. The slowing down in the birth rate has led to a decrease in the proportion of the population under five years of age, while the proportion of retirement age (65 for men, 60 for women) has steadily increased from 13.1% in 1951 to 18.9% in 1981. This increase in the number of elderly people is one of the main reasons for the increase in the number of small households, and the fall in the mean household size, as shown in Table 6, and Figure 3. The fall in the birth rate is linked to the increase in the number of two person households. There has also been a decrease in the number of large households in more recent years.

While the proportion of small households has increased, this has not led to more sharing of dwellings, as shown in Table 7, because the number of households has decreased recently, while the number of dwellings has risen. Up to 1966 the number of households exceeded the number of dwellings, but the position has now been reversed. The proportion of households sharing has fallen from 5.76% in 1951 to 1.18% in 1981. However, these figures must be treated with some caution because the definition of the relationship between households and dwellings has changed for the different censuses. This is particularly important in a city like Leeds where many large old houses have been divided into units for multi-occupancy, particularly for students. The distinction between a group of students living together as a single household, or several households sharing a dwelling is rather hazy, and causes some confusion in the statistics. It may even account for the change in the trend in the proportion sharing.

The original Development Plan for Leeds proposed a building programme to 1971 based more on the building capabilities of the corporation than on an assessment of need, assuming a slightly increased rate of building to a maximum of about 2 500 buildings per year. The actual building programme greatly exceeded that forecast. Several reasons can be cited for the large difference.

	1961	1966	1971	1981
Population with a different address one year earlier	57 390	56 050	52 440	45 325
Total population	510 676	504 630	496 009	431 622
% with change of address	11.23	11.11	10.57	10.50

Table 4 Population with Change of Address, Leeds CB, 1961-1981

Source: Census of Population, 1961, 1966, 1971, 1981

		1951	1961	1966	1971	1981
% of h/hs with the following no of people						
	1	12.5	16.1	18.6	22.2	26.9
	2	28.8	30.6	30.5	31.6	32.0
	3	25.7	23.1	20.4	17.8	15.7
	4	18.0	16.9	16.4	14.9	14.8
	5	8.4	7.8	8.1	7.5	6.3
	6+	6.5	5.5	6.0	6.0	4.2
	Total	100.0	100.0	100.0	100.0	100.0
	Mean h/h size	3.06	2.86	2.82	2.77	2.56

Table 5 Percentage of Households with Various Numbers of People, and Mean Household Size, Leeds CB, 1951-1981

Source: Census of Population, 1951, 1961, 1966, 1971, 1981

Note: h/h = household

	1951		1961		1966		1971		1981	
	M	F	M	F	M	F	M	F	M	F
0- 4	4.4	4.3	4.0	3.9	4.4	4.2	3.9	3.8	3.0	2.9
5- 9	3.4	3.3	3.6	3.4	4.0	3.8	4.2	4.0	3.3	3.1
10-14	3.3	3.2	4.1	4.0	3.7	3.5	3.9	3.7	4.0	3.9
15-19	2.6	3.2	3.4	3.3	4.1	4.0	3.8	3.6	4.3	4.4
20-24	2.9	3.5	3.2	3.2	3.5	3.2	4.4	4.1	4.2	4.1
25-29	3.8	3.8	3.1	3.0	2.9	2.9	2.9	2.7	3.5	3.3
30-34	3.4	3.6	3.2	3.2	2.9	2.9	2.7	2.7	3.5	3.4
35-39	3.8	4.0	3.6	3.5	3.1	3.0	2.7	2.7	2.6	2.6
40-44	3.9	4.1	3.3	3.3	3.2	3.4	2.9	3.0	2.6	2.7
45-49	3.7	3.9	3.5	3.7	3.1	3.2	3.3	3.2	2.7	2.7
50-54	3.2	3.7	3.4	3.8	3.2	3.5	2.9	3.1	2.9	3.0
55-59	2.6	3.3	3.1	3.4	3.1	3.5	3.0	3.3	3.1	3.1
60-64	2.1	2.9	2.4	3.1	2.8	3.3	2.8	3.3	2.6	2.9
65-69	1.6	2.4	1.7	2.6	1.9	2.7	2.2	2.9	2.4	2.9
70-74	1.2	1.9	1.2	2.0	1.2	2.0	1.4	2.4	1.8	2.7
75-79	0.7	1.2	0.7	1.4	} 1.2 }	} 2.7 }	0.8	1.7	1.1	2.1
80-84	0.3	0.6	0.3	0.8			0.4	1.0	0.5	1.4
85+	0.1	0.2	0.1	0.4			0.2	0.6	0.2	0.9
Total	46.9	53.1	47.9	52.1	48.3	51.7	48.3	51.7	48.2	51.8

Table 6 Age and Sex Structure, Leeds CB, 1951-1981

Source: Census of Population, 1951, 1961, 1966, 1971, 1981

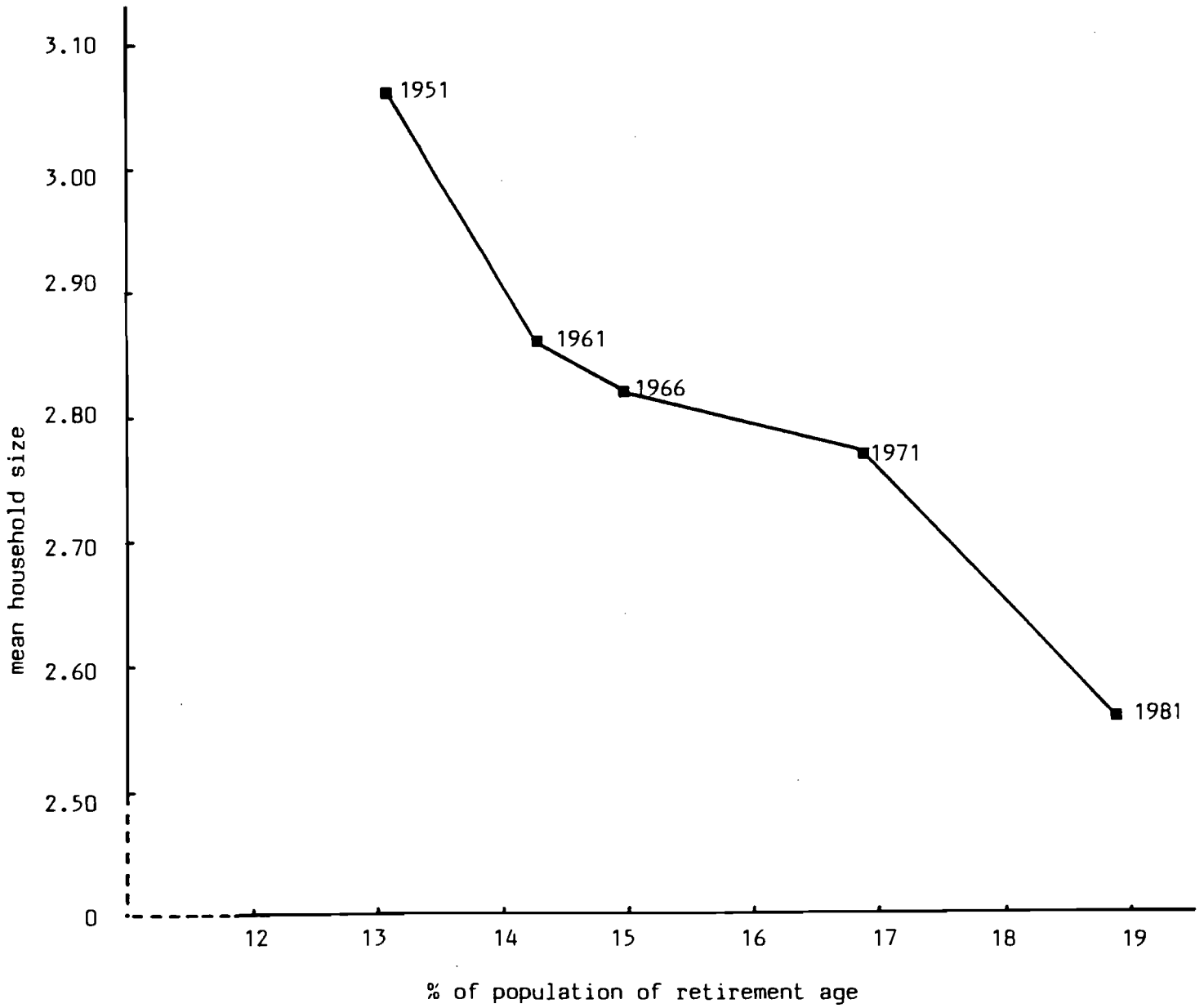


Figure 3 Mean Household Size and Percentage of Population of Retirement Age (65+ for men, 60+ for women), Leeds CB

	1951	1961	1966	1971	1981
No of households	160 637	173 508	170 910	173 875	165 513
No of dwellings	154 891	170 641	170 050	174 830	179 808
No of households sharing dwellings	9 254	3 905	5 490	4 185	1 957
% sharing	5.76	2.25	3.21	2.41	1.18

Table 7 Households Sharing Dwellings, Leeds CB, 1951-1981

Source: Census of Population, 1951, 1961, 1966, 1971, 1981

Note: The definition of households sharing dwellings has changed over time, generally becoming more specific. It is believed that there was incorrect classification of some households in the Censuses prior to 1981 (and possibly in 1981). There may also be differences according to whether or not students were in Leeds at the time of the Census, since many of them share dwellings. Consequently, these figures must be treated with even more caution than usual when considering information from the Census.

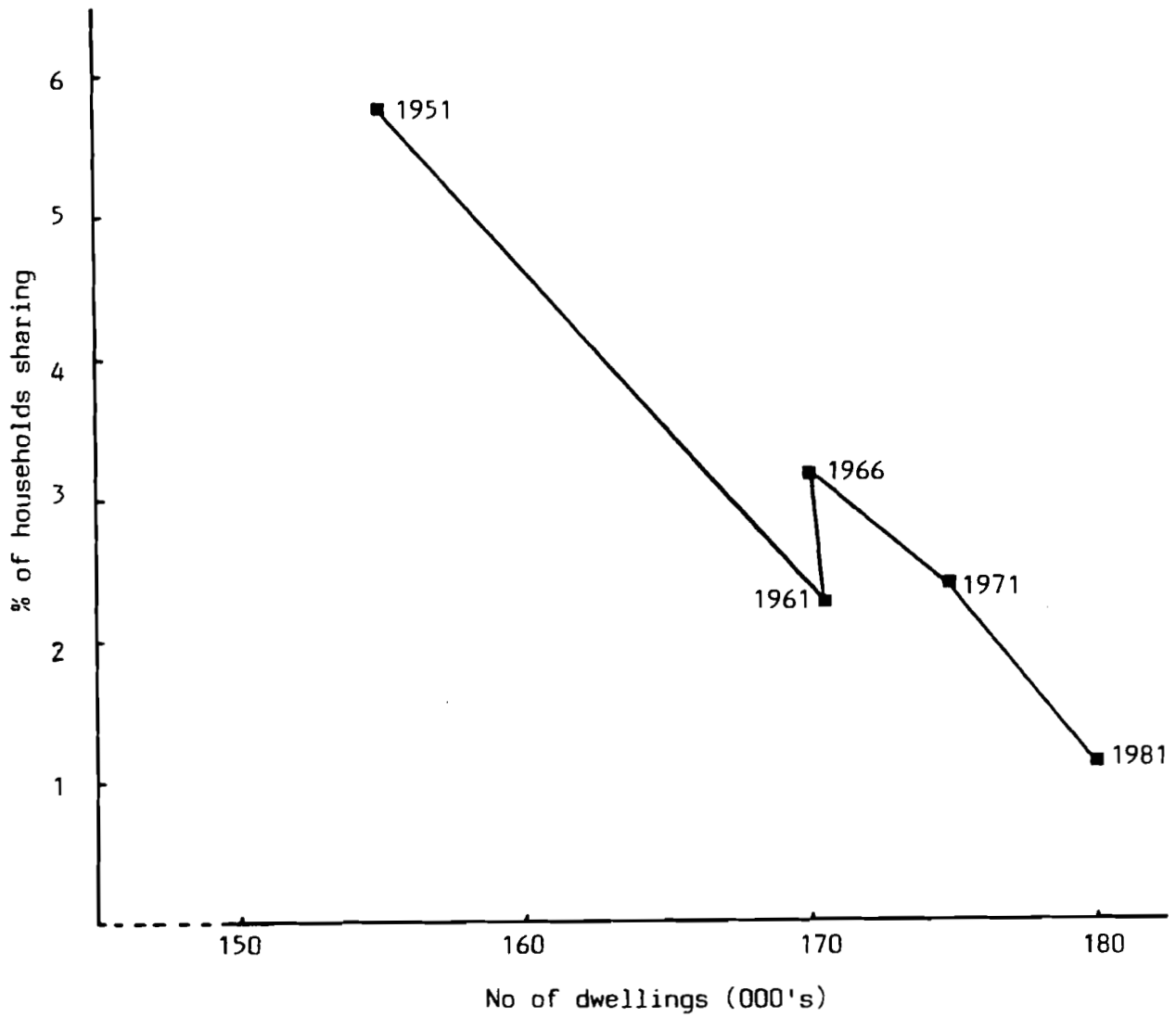


Figure 4 Sharing of Dwellings in Leeds CB

The increasing supply of both building materials and skilled labour and the easing of building restrictions in 1953 all helped. There was a national move towards the clearance of slums. Another significant trend during the 1950's was the shift from public to private development, from the early 1950's when over 80% of the 1 500 or so houses built per annum were by the Corporation through the late 1950's 60's and 70's when 3 000 or more houses were built per annum and up to 60% were by private builders. There have been substantial fluctuations in the rate of building due to the level of interest rates, costs and availability of building land and restrictions on the amount of capital investment by the Corporation. Clearly these factors would apply to varying degrees in other cities and it is interesting to note that while Leeds came third behind Birmingham and Liverpool for the total number of houses completed over the period 1949-61, Leeds had a much higher rate per 100 000 population than either of these two cities or Manchester (6 610 dwellings per 100,000 population in Leeds, 4,956 for Liverpool, 4,517 for Manchester and 4,475 for Birmingham) (City and County Borough of Leeds, 1968). This accelerated building programme as shown in Table 8 has had an effect on the slum clearance situation by permitting a larger proportion of the population to move to new housing than was originally anticipated. A substantial proportion of re-housing has been on the Seacroft Estate to the north-east of the city. More recently there has been redevelopment on the sites that have been recently cleared, for example the Little London development north of the city centre. However, in a period of housing sufficiency there is a tendency for those in areas scheduled for demolition not to wait for the house which the corporation is obliged to offer them, but to move into the private sector. This has two important implications. Firstly the areas that these people have left enter a period of rapid decline as it is the old and poor who are unable to transfer to the private sector who remain in the area scheduled for demolition. The boarded-up housing and the declining standard of shops resulting from the lower potential income leads to a very poor quality environment for those left. The second implication is the rise in the number of vacant corporation houses (from 683 in 1955/56 to 2,599 in 1966/67) which has contributed to the decline in the corporation building programme. It is perhaps pertinent to note at this point that a shift from public to private housing can have important implications for the shape of the city, since when the corporation is building a substantial proportion of the houses it can control directly their number and location. When the building is by private developers on non-corporation owned land the control mechanism is negative, inasmuch as the corporation can only refuse planning permission (or ask for amendments): it cannot direct builders to a particular area.

There have been large changes in the housing market over time, as shown in Table 9, particularly with the decline in the privately rented market for unfurnished property, because of the legislation in 1965 which increased the rights of the tenant to such an extent that many landlords ceased to rent out dwellings.

Year	Private sector built	Local authority built	Other public sector built	Total built	Demolished
1946-) 1954)	3 468	10 424	30	13 922	800
1955	962	1 659	0	2 621)	1 824
1956	1 073	1 151	0	2 224)	
1957	1 226	2 111	50	3 387	814
1958	1 059	1 606	0	2 665	865
1959	1 369	1 816	78	3 263	1 883
1960	1 193	2 962	20	4 175	0
1961	1 420	1 545	82	3 047	5 320
1962	1 401	1 540	7	2 948	2 183
1963	1 194	1 523	0	2 717	1 732
1964	1 006	2 212	0	3 218	2 063
1965	951	2 378	147	3 476	2 341
1966	1 023	2 799	13	3 835	1 925
1967	849	2 933	191	3 973	1 893
1968	758	1 722	232	2 712	1 505
1969	457	1 807	216	2 480	1 699
1970	605	1 358	261	2 224	2 919
1971	665	1 387	180	2 232	2 646
1972	675	1 053	107	1 835	2 903
1973	1 255	962	344	2 561	2 044
1974	1 030	1 722	219	2 971	2 026
1975	1 528	1 776	99	3 403	2 026
1976	1 907	1 257	213	3 377	2 469
1977	1 104	982	297	2 383	1 884
1978	1 045	1 313	115	2 473	868
1979	873	951	338	2 162	1 176
1980	1 071	1 218	489	2 778	1 072
1981	994	708	114	1 816	847
1982	1 136	460	475	2 071	na

Table 8 Housing Construction and Demolition in Leeds 1946-1982

Continued

Table 8 Housing Construction and Demolition in Leeds 1946-1982 (cont.)

Source: Housing Returns (1954-1965) and Local Housing Statistics (1966-1983), Ministry of Housing and Local Government, later Department of the Environment.

Note: The figures for 1946 to 1974 are for Leeds CB, from 1975 for Leeds MD.

Since 1st April 1980 figures for demolitions have only been issued on an annual basis for the year ending 31st March, so the values for 1980 and 1981 have been estimated by allocating the values on a pro rata basis. The values for the year ending 31st March 1983 have not been issued yet.

na = not available

	1961	1966	1971	1981
Owner-occupied	64 169	68 560	70 235	75 770
Council rented	46 492	55 770	68 425	68 833
Rented furnished	5 883	5 670	7 570	6 228
Rented unfurnished including Housing Association	49 740	37 240	27 415	13 506
Other and not stated	4 517	3 670	235	1 217
Total	170 801	170 910	173 875	166 464

Table 9 Households in Various Tenure Categories, Leeds CB, 1961-1981

Source: Census of Population, 1961, 1966, 1971, 1981

These have been replaced to some extent by Housing Association properties, which are a form of co-operative, and come under the heading of 'other public sector' in Table 8. In fact, the number built exceeded those by the local authority in 1982 for the first time. Reductions in local authority expenditure have led to fewer local authority houses being built, with less in 1982 than in any year since before 1955. The private sector has continued to build despite the economic recession. There has been only a very small growth in the number of households in the council (local authority) rented sector, while the numbers in the owner-occupied sector has continued to grow. This is, in part, due to the sale of council houses to their occupants that has been encouraged by Conservative Governments.

The policy for housing in Leeds stated in the Structure Plan is to make provision for land for up to 30 000 new dwellings over the period 1979-1986. It is now intended to revise this to provide land for 2 550 new dwellings each year. The reduction in the number of dwellings required is because the population forecast has been reduced, and there are expected to be reductions in the number of vacant dwellings and in the number of demolitions (West Yorkshire Metropolitan County Council, 1983). In general more land is made available than is likely to be used because it is believed to be important to be able to offer developers a choice of building sites. In general, it is policy to ensure that new development occurs in areas adjacent to existing built-up areas.

In 1975 the City Council adopted a comprehensive housing strategy which included a building programme for local authority owned dwellings of 2100 per annum, rising to 2450 dwellings, a clearance programme of 1250 per annum, and an improvement target of 2500 dwellings. The reduction in the money provided by Central Government as part of the Housing Investment Programme has meant that not only have these targets not been met, but also, the backlog of problems has grown. It is unlikely that there will be significant increases in the money available under the Programme in the next few years so a new strategy has been devised to allocate shares of the budget to the various headings of new building, improvements to the council's own stock, urban renewal and assisting Housing Associations. One of the major problems in Leeds is the very large number of system-built properties that have been found to be defective, and so in need of renovation. In the private sector it is estimated that there are over 19 000 unfit properties, over 2000 dwellings fit but lacking basic amenities and 48 000 dwellings in need of renovation (Leeds City Council, 1984).

The house-building programme has led to changes in the location of dwellings, as shown in Table 10. The number of dwellings in the core of the city has decreased because of demolition, for example, Quarry Hill flats built in the late 1930's to house thousands of people displaced by redevelopment then, were demolished in the late 1970's because of the high cost of repair. About 22 000 dwellings have been built in both the suburbs and

	1961	1966	1971	1981
I Core	37 274	29 909	25 986	22 796
II Suburbs	133 367	140 141	148 844	157 012
III Rural fringe	80 925	91 100	93 830	102 721
Total	251 566	261 150	268 660	282 529

Table 10 Spatial Distribution of Occupied Dwellings in Leeds MD, 1961-1981

Source: Census of Population, 1961-1981
West Yorkshire Metropolitan County Council, Facts and Figures, 1975

Note: Because of the known underenumeration of dwellings at the enumeration district level in 1966, the values for areas I and II have been scaled up to the total for Leeds CB

the rural fringe over the period 1976 to 1981, which represents a greater rate in the outer area. This has had an effect on the distribution of population, as shown in Table 11. In the core the population has dropped from about 150 000 to less than 50 000 in thirty years, at a faster rate than the decline in the housing stock, because of the fall in the occupancy rate, especially the increase in single person households. In the suburbs the population increased to 1971, but declined subsequently, again because of the fall in household size. The population in the rural fringe has continued to grow despite the overall fall since 1971.

An important aspect of the house building and demolition programme has been the land market. As shown in Table 12, there have been large changes in use over time. Over half of the land that was unused in 1957 had gone into other uses by 1976, with over 23% being used for residential use. However, quite large proportions of the various uses (6% of private residential, 8% of manufacturing and 5% of distribution and offices) had fallen out of use over the same period. In 1957, 30% of the area of Leeds CB was agricultural; over a quarter (1 357 hectares) of that had become developed by 1976, despite the 1 398 hectares of unused land in 1957. In the original Development Plan 1 631 hectares of undeveloped land were scheduled for housing, plus 283 hectares of land arising from redevelopment schemes. In the later Review of the Plan, 1 027 hectares of vacant land were scheduled, plus 516 hectares of land released by redevelopment, reflecting the large amount of slum clearance. There was seen to be a shortage of land so the local authority permitted an increase in residential densities in certain areas, with a maximum of 240 people per hectare in the Leek Street flats in the Hunslet Comprehensive Development area. (These flats, built in the 1960's, have since been demolished because of the poor living conditions that they provided). By the early 1960's there was little land for private building so the council intended to release some of its own land for private builders and housing associations. In fact, the problem disappeared on the reorganisation of local government, whereby the new area of Leeds MD included undeveloped land previously outside the city.

In this section the inter-relationships between population and the housing and land markets have been examined. In the next section the links with the local economy will be considered.

	1951	1961	1966	1971	1981
I Core	149 410	110 167	87 750	70 961	49 476
II Suburbs	356 470	400 509	416 900	426 286	382 146
III Rural fringe	188 634	202 294	219 840	241 683	265 092
Total	694 514	712 970	724 490	738 930	696 714

Table 11 Spatial Distribution of Population in Leeds MD, 1951-1981

Source: Census of Population 1951, 1961, 1966, 1971, 1981
West Yorkshire Metropolitan County Council, Fact and Figures, 1975

	Area in 1957 (hectares)	% of area in 1957 in the various uses in 1976							
		agri-culture	un-used	manu-fact-uring	distri-bution and offices	private resi-dential	council resi-dential	other	total
agricultural	4 933	72.5	6.3	0.9	1.0	5.3	4.8	9.3	100.0
unused	1 398	0.9	45.5	2.3	4.2	12.5	9.8	24.7	100.0
manufacturing	618	0.0	7.8	72.1	11.3	0.3	1.6	6.8	100.0
distribution and offices	353	0.0	5.1	2.5	76.5	2.3	2.3	11.3	100.0
private residential	3 229	0.1	6.0	0.6	1.4	82.4	3.8	5.4	100.0
council residential	1 302	0.0	1.6	0.0	0.1	0.0	97.6	0.7	100.0
other	4 600	0.4	4.6	0.5	1.2	1.7	1.1	90.6	100.0

Table 12 Land Use Change, Leeds CB, 1957-1976

Source: G C Dickinson and M G Shaw, Land Use Change in Leeds, 1957-1976 - Part II, Analysis of the quantitative results of the survey, Working Paper 310, School of Geography, University of Leeds, Leeds.

6. The Economy

As shown in Table 13 the economic activity rates have changed over time, with a continuous fall in the male rate, but an increase for women up to 1966, with a fall from then onwards. These effects are partly due to the increase in the number of people of retirement age. There has also been an increase in the number of young people in higher education, delaying their entry into the job market. Against this background there has been an increase in the proportion unemployed since 1961, which had reached 11.6% of the workforce by 1981. The lower rate for women may well conceal many marginal workers who do not declare themselves unemployed during times of recession, but who would enter employment if there were jobs available. The rapid growth in unemployment since 1980 is shown in Table 14. It can be seen that Leeds not only follows the national trend but is slightly below it, and that the rate for West Yorkshire is even higher. The relationship between unemployment and other factors are shown in Figures 5 and 6. In Figure 5 the slowing down in the residential mobility rate and the increase in the unemployment rate have been plotted together. The directions of change may be regarded as indicative of economic recession, with greater unemployment indicating the slow down in the economy, and possibly having a direct effect by preventing some people from moving home, and discouraging long-distance migration into the area. Another indicator of economic recession has been the reduction in investment in the council housing sector, as shown in Figure 6. Clearly there have been some fluctuations, but the general trend has been from the lower right corner to the upper left.

Table 14 shows how total employment in Leeds MD fluctuated during the 1960's and 1970's but has declined since, again partly due to recession. Over this period there has been a shift from manufacturing to service employment. In 1961 nearly half of employment in Leeds MD was in manufacturing; by 1977 this had fallen to one third. These shifts can be seen more clearly in Table 15 and Figure 7. In 1951 the biggest industry was clothing and footwear. Twenty years later 42% of the jobs in this sector had disappeared. The engineering, chemical and textile industries also showed decline over this period. During this period Leeds grew as a regional centre, with a 92% growth in professional and scientific services. These trends continued through the 1970's, as shown in Table 16, with other service sectors showing substantial growth. The table also compares the structure of the Leeds economy with that for Great Britain, with location coefficients (the ratio of the percentage in each industry in Leeds to that for the nation) calculated. This shows the dependence of Leeds on sectors that are in decline. Its regional role is emphasised by its extra share of distributive trades and insurance, banking etc.

The spatial distribution of employment in 1966 and 1971 is shown in Table 17. The suburbs have been divided into two parts - inner and outer since there are differences between the dynamic

		1951	1961	1966	1971	1981
Population aged 15+	M	180 997	184 716	180 450	176 390	164 019
	F	213 909	208 458	202 410	197 130	181 023
	T	394 906	393 174	382 860	373 520	345 042
Economically active	M	160 410	161 300	151 600	141 980	121 244
	F	92 414	95 200	97 210	91 740	82 308
	T	252 824	256 500	248 810	233 720	203 552
% economically active	M	88.6	87.3	84.0	80.5	73.9
	F	43.2	45.7	48.0	46.5	45.5
	T	64.0	65.2	65.0	62.6	59.0
Unemployed	M	3 356	2 190	3 820	7 440	17 305
	F	1 145	1 020	2 210	2 830	6 403
	T	4 501	3 210	6 030	10 270	23 708
% of economically active unemployed	M	2.1	1.4	2.5	5.2	14.3
	F	1.2	1.1	2.3	3.1	7.8
	T	1.8	1.3	2.4	4.4	11.6

Table 13 Economic Activity and Unemployment in Leeds CB, 1951-1981

Source: Census of Population, 1951, 1961, 1966, 1971, 1981

Note: M = male, F = female, T = total

Year	Total employ- ment in Leeds MD	% of employment in Leeds in				Unemployment rate		
		agric. and mining	manuf.	con- struc- tion	serv- ices	Leeds	WY	GB
1961	324 800	2.1	49.8	6.1	42.0			
1965	326 660	1.9	45.0	7.6	45.5			
1967						1.7	1.6	2.1
1968						2.2	2.0	2.2
1969						2.2	2.0	2.2
1970	310 680	1.2	44.7	5.9	48.2	2.5	2.4	2.5
1971	323 830	1.0	38.8	5.4	54.8	3.7	3.7	3.4
1972	326 340	1.0	37.1	5.4	56.5	3.8	3.5	3.6
1973	330 120	1.0	36.7	5.7	56.6	2.4	2.2	2.4
1974						2.3	2.1	2.5
1975	334 210	0.8	34.3	5.5	59.5	4.1	4.1	4.5
1976	324 300	0.8	33.5	6.0	59.7	6.3	5.9	6.1
1977	323 311	0.7	33.3	5.6	60.3			
1978	322 838					5.4	5.5	5.9
1979	321 700					4.9	5.1	5.4
1980	315 700					6.3	7.0	6.7
1981	296 300					10.5	11.7	10.9
1982	287 500					11.8	12.9	12.6

Table 14 Employment in Leeds and Unemployment in Leeds, West Yorkshire (WY) and Great Britain (GB)

Sources: West Yorkshire Metropolitan County Council, Structure Plan, Report of Survey, Volume, 1977
 West Yorkshire Metropolitan County Council, Economic Trends, number 21, December 1982
 Leeds City Council, The Leeds Economy, 1980

Note: The unemployment figures for Leeds are for the Leeds 'Travel to Work Area' and are for July for the years 1967-1976 and June for the years 1978-1982.

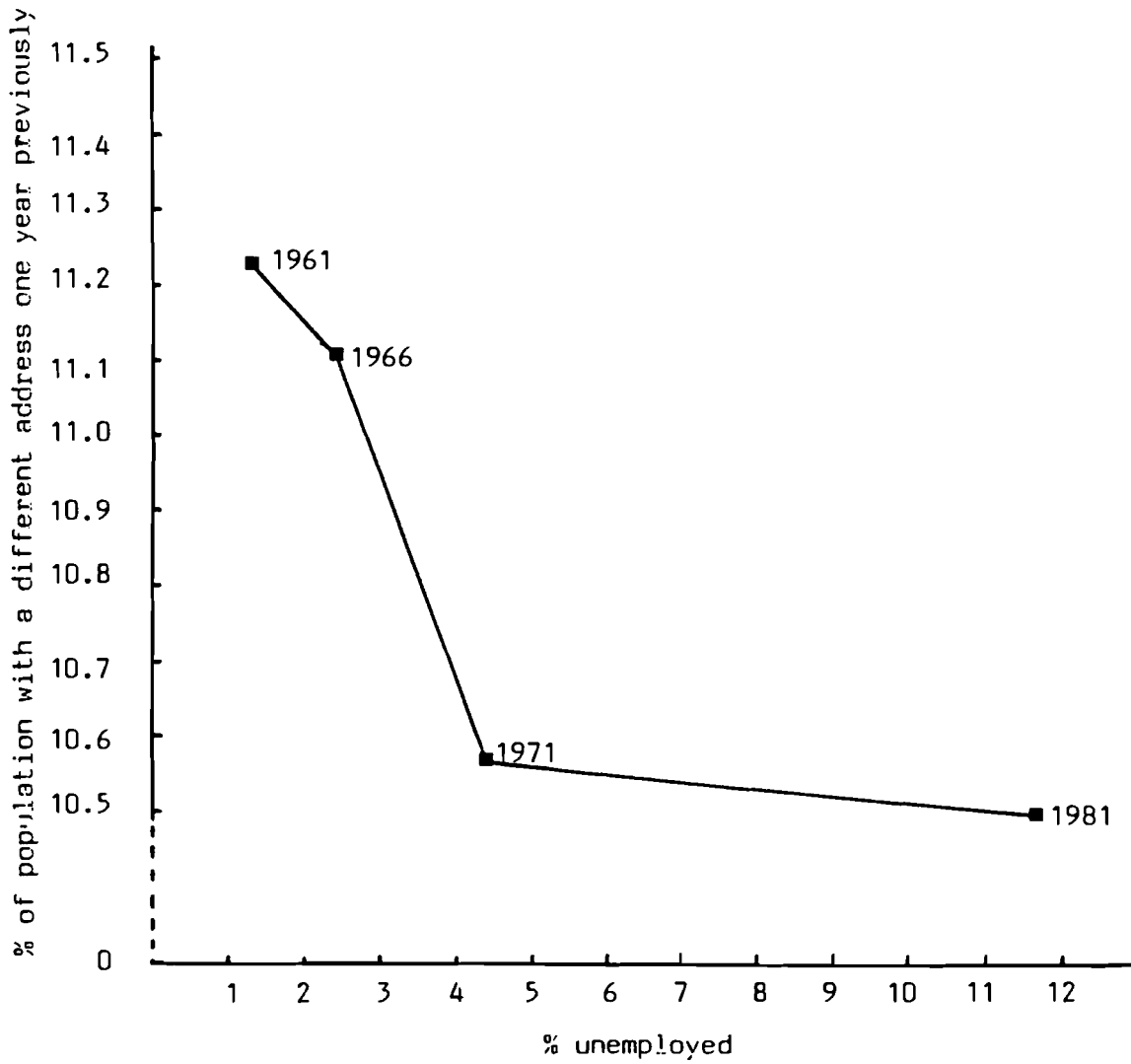


Figure 5 Unemployment and Migration, Leeds CB

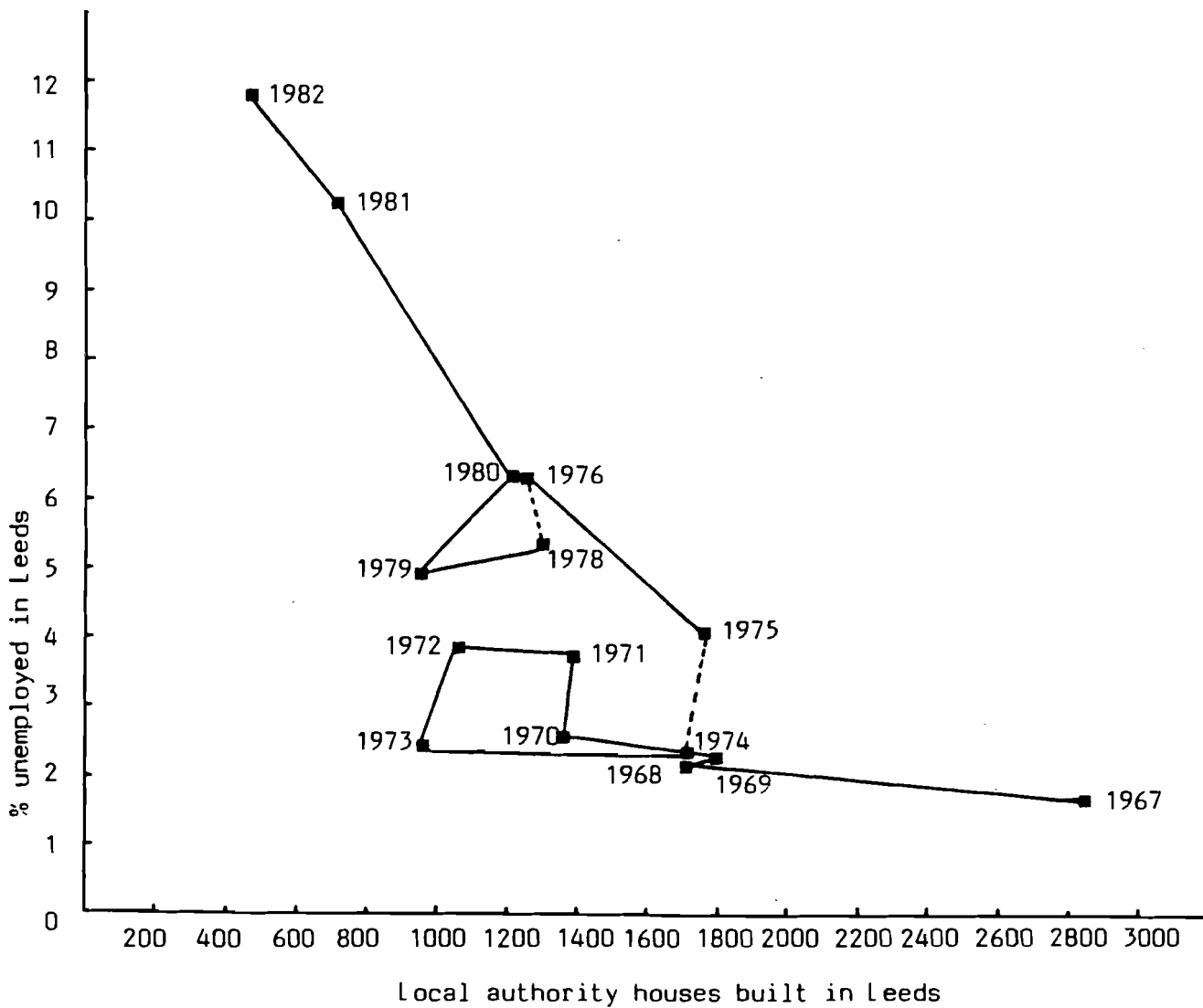


Figure 6 Unemployment and Local Authority House Building in Leeds

Note: The unemployment rate is for the Leeds Travel to Work area. The house building is Leeds CB up to 1974 and Leeds MD from 1975 onwards. Data are not available for 1977.

Industry	1951	1961	1966	1971
1. agriculture, forestry and fishing	859	430	560	630
2. mining and quarrying	1 472	1 270	1 200	140
3. food, drink and tobacco	8 385	6 210	5 760	5 210
4. chemicals and allied industries	4 227	4 280	3 640	3 110
5. metal manufacture	5 731	8 200	5 950	7 290
6. engineering and electrical goods	23 855	22 950	23 080	20 870
7. shipbuilding and marine engineering	45	10	20	60
8. vehicles	10 256	5 480	5 490	4 000
9. metal goods not elsewhere	5 740	5 910	6 300	6 550
10. textiles	8 958	6 620	5 610	4 060
11. leather, leather goods and fur	2 755	1 910	1 630	1 230
12. clothing and footwear	46 185	37 520	32 750	26 670
13. bricks, pottery, glass, cement, etc.	2 401	2 590	2 370	1 690
14. timber, furniture, etc.	4 935	4 840	4 400	3 890
15. paper, printing and publishing	9 921	10 890	10 590	8 650
16. other manufacturing industries	1 236	1 090	1 160	1 530
17. construction	12 625	17 150	18 340	15 730
18. gas, water and electricity	4 562	5 590	6 690	6 000
19. transport and communications	18 063	17 160	16 850	16 160
20. distributive services	36 826	45 670	43 280	39 420
21. insurance, banking and finance	5 915	7 880	8 840	11 440
22. professional and scientific services	17 191	23 800	26 800	33 080
23. miscellaneous services	20 822	23 970	27 210	25 540
24. public administration and defence	12 065	10 820	11 200	11 190
25. industry inadequately described	288	1 080	1 000	1 550
TOTAL	265 318	273 180	270 720	255 690

Table 15 Employment by Industry in Leeds CB, 1951-1971

Source: Census of Population, 1951, 1961, 1966, 1971

Note: The data for 1981 are not yet available

Leeds CB corresponds with areas I and II in this paper (the core and the suburbs), and so represents the urbanised area.

	Employment 1977 (000's)	Change 1971-77 (000's)	% change 1971-77	Employment in Leeds 1977 %	Employment in GB 1977 %	Location coefficients
1 agriculture, forestry, fishing	1.4	- 0.2	-12.5	0.4	1.7	0.2
2 mining and quarrying	1.0	- 0.8	-44.4	0.3	1.6	0.2
3 food, drink and tobacco	5.5	- 1.1	-16.7	1.7	3.1	0.5
4 coal and petroleum products	0.5	+ 0.1	+25.0	1.7	0.2	0.8
5 chemicals	5.1	+ 1.1	+27.5			
6 metal manufacture	9.5	- 1.9	-16.7	2.9	2.2	1.3
7 mechanical eng	21.8	+ 1.8	+ 9.0	6.7	4.1	1.6
8 industrial eng	1.0	- 0.8	-44.4	0.3	0.7	0.4
9 electrical eng	4.7	+ 0.6	+14.6	1.5	3.4	0.4
10 shipbuilding	-	-	-			
11 vehicles	3.7	- 3.1	-46.0	1.1	3.3	0.3
12 other metal goods	5.5	- 1.9	-25.7	1.7	2.4	0.7
13 textiles	9.4	- 3.8	-28.8	2.9	2.2	1.3
14 leather, leather goods, furs	1.0	- 0.4	-28.6	0.3	0.2	1.5
15 clothing, footwear	17.4	- 9.3	-34.8	5.4	1.7	3.2
16 bricks, pottery, glass, cement etc	2.3	- 0.5	-17.9	0.7	1.2	0.6
17 timber, furniture etc.	4.8	+ 0.6	+14.3	1.5	1.1	1.4
18 paper, printing, publishing	11.6	+ 0.7	+ 6.4	3.6	2.4	1.5
19 other manufact.	4.1	+ 0.2	+ 5.1	1.3	1.5	0.9
20 construction	18.2	+ 0.8	+ 4.6	5.6	5.6	1.0
21 gas, electricity, water	8.3	+ 0.1	+ 1.2	2.6	1.5	1.7
22 transport, communications	19.5	- 2.1	- 9.7	6.0	6.5	0.9
23 distributive trades	42.1	- 0.8	- 1.9	13.0	12.2	1.1
24 insurance, banking, etc	17.5	+ 3.3	+23.2	5.4	5.1	1.1
25 professional and scientific services	52.7	+ 7.7	+17.1	16.3	16.0	1.0
26 miscellaneous services	35.2	+ 5.1	+16.9	10.9	10.4	1.0
27 public admin., defence	19.7	+ 4.4	+28.8	6.1	7.1	0.9
1+ 2 primary	2.4	- 1.0	-29.4	0.7	3.3	0.2
3-19 manufacturing	107.8	-17.9	-13.7	33.3	32.5	1.0
21-27 services	194.9	+17.6	+ 9.9	60.3	58.8	1.0
Total	323.3	- 0.5	- 0.2	100.0	100.0	1.0

Table 16 Employment Change in Leeds MD, and Comparison of Leeds Employment Structure With That of Great Britain continued. . .

Table 16 Employment Change in Leeds MD, and Comparison of Leeds
Employment Structure With That of Great Britain (continued)

Source: Leeds MD Planning Department

Note: Location coefficients are the ratios of the % of employment
 in a sector in Leeds divided by the equivalent national %.

 Leeds MD corresponds with areas I, II and III in this paper.

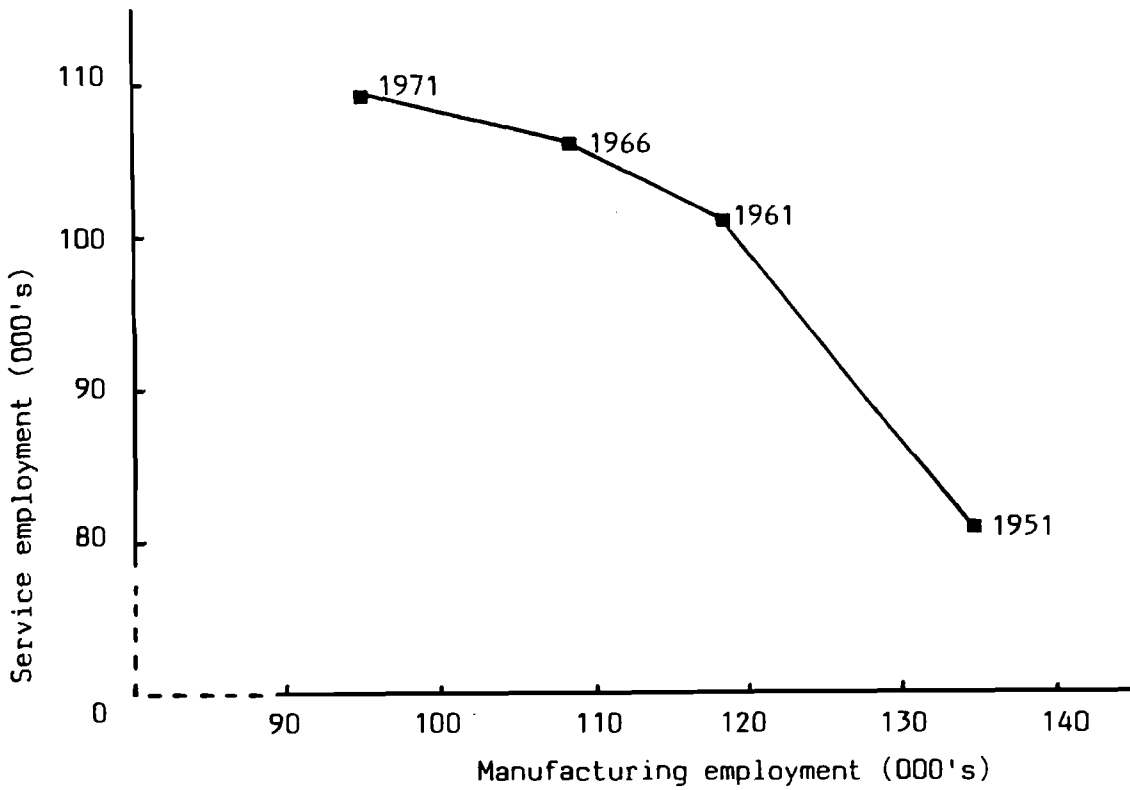


Figure 7 Employment Change in Leeds CB

Note: Manufacturing = groups 3-16, service = groups 20-23 in Table 15

	1966			1971		
	total	manufacturing	service	total	manufacturing	service
	I Core	166 610	63 593	69 247	155 911	54 097
II Suburbs - inner	60 836	30 756	18 542	52 243	23 713	19 740
- outer	43 206	14 349	18 322	47 532	17 000	21 512
III Rural fringe	(56 008)	na	na	68 144	(12 990)	(38 024)
Total	(326 660)	na	na	323 830	(107 800)	(147 500)

Table 17 Spatial Distribution of Employment in Leeds MD, 1966-1971

Source: Census of Population, Workplace Analysis, 1966, 1971
West Yorkshire Metropolitan County Council, Facts and Figures, 1975

Note: The data for 1981 are not yet available. The values in brackets are approximate and should be treated with caution.
Manufacturing = groups 3-19, service = groups 23-26 in Table 16.
na = not available.

characteristics of the two. There has been growth in the outer suburbs and the rural fringe, with decline nearer the centre. This overall trend has been followed by manufacturing (as far as can be established) with an apparent movement to the outer suburbs. In fact this is due to the replacement of declining firms in the centre by firms on new sites towards the edge of the city, for example in the Seacroft Trading Estate, and the fact that the firms in the outer suburbs are, in general, more recent, and so better able to expand, and producing products that meet present day demands. Service employment has declined slightly in the core and risen elsewhere, thus emphasizing the differences between the two areas. The largest absolute loss between 1966 and 1971 has been in the core, but in relative terms the inner suburbs have lost more. The net outward movement of jobs has not been as pronounced as that of population, but the shift from manufacturing to service activity as well as the spatial changes indicates the large shifts in the economy of Leeds.

Industrial policy has remained fairly constant since the Second World War: firstly to allocate suitable land for industry, secondly to encourage new industry to assist economic development, using aid from central government, and thirdly encouraging industrial renewal by defining industrial areas, away from residential areas.

Employment in the distributive services grew from 1951 to 1961, but declined subsequently. Over the period 1950 to 1971 the total number of shops declined steadily, as shown in Table 18, reflecting the move from the traditional corner shop to the supermarket and large store. In fact there was a large growth in the number of shops in the city centre, particularly between 1961 and 1966, with a large decline in the rest of Leeds. This spatial difference is not represented in the share of turnover in the city centre, demonstrating the development of suburban shops with high turnover rates as shown in Table 19. The total retail turnover in Leeds over the period 1950 to 1971 has been remarkably constant in real terms. The central area has suffered a slight decline since 1966 in real terms, but retailing does not seem to be showing the same rate of decentralisation as total economic activity, despite the large growth in car ownership and the local authority's explicit policy of encouraging suburban shopping centres (City and County Borough of Leeds, 1968). An interesting shift of policy for the central area was the change from the wish to remove housing to encourage the expansion of business envisaged in the original Development Plan to the policy of encouraging some people to live there in the Development Plan Review.

To sum up, the industries that made Leeds a thriving city in the past have suffered serious decline since the Second World War, causing particular problems in the core. There has been some expansion in the service sector, but even this has declined in the core. Retailing has undergone some major shifts, with the growth of large suburban stores attracting some trade away from the city centre. There has been some decentralisation of

	1950	1961	1966	1971
City centre	--	693	837	880
Rest of Leeds CB	--	5233	4011	3777
Total	6213	5926	4848	4657

Table 18 Number of Shops in Leeds CB

Source: Census of Distribution, 1950, 1961, 1966, 1971

	1950	1961	1966	1971
City centre	na	300 206	301 083	280 610
% of total	na	45.5	47.9	43.2
Rest of Leeds CB	na	359 888	327 298	370 320
% of total	na	54.5	52.1	56.8
Total	616 336	660 094	628 381	650 930

Table 19 Annual Turnover in Shops in Leeds CB

Source: Census of Distribution, 1950, 1961, 1966, 1971

Note: Values are in £000's at 15 January 1983 prices.

employment over the period 1966 to 1971 but the sectoral changes from manufacturing to service as well as the closure of firms in the inner areas and their replacement elsewhere make it difficult to interpret the overall pattern from the limited information available. This complexity is emphasised by the weak nature of the industrial planning policies of the local authority. The change in the spatial pattern of jobs must have affected the journey to work pattern. Changes in the transport sector will be considered in the next section.

7. Transport

As incomes have risen and the population has decentralised the rate of car ownership has risen, as shown in Table 20. The total number of cars owned has increased steadily at about 2 000 per year since 1966. Two car ownership is still fairly low, at less than 10% in Leeds CB in 1981, and over half the households still do not own a car. One of the main reasons for this is the good public transport system, which is based mainly on buses. Relatively few journeys to work are by rail, as shown in Table 21. The growth in car use for the work trip can be seen. It has grown faster than the increase in car ownership. In fact, in 1981 over a quarter of the car users described themselves as car passengers (18.4%) or car poolers (7.5%). During the 1970's bus patronage has fallen dramatically, and now represents only one third of trips while car use has been increasing. The oil crisis of the early 1970's seems to have had little effect on car usage. It may have led to the revival in the usage of motor cycles and pedal cycles since 1971. In fact the real price of petrol has fluctuated in Britain since 1946, with peaks in 1952 because of the nationalisation of British oil assets in Iran, 1956/7 because of the Suez Canal crisis and 1973/4/5 because of the Arab-Israeli conflict. After each of these peaks the price has fallen in real terms, mainly because the price of other goods has risen as a consequence, because Britain's economy is so dependent on oil. Since 1980 the price has increased steadily, despite the increasing dependence on North Sea oil, because of the linking of the price of British oil to that of the rest of the World. Bus fares in Leeds have followed a different trend over this period. Until about 1969 Leeds had very cheap fares, possibly the cheapest in Britain. During the 1970's they were increased, with the biggest rise in 1975 when they were increased three times. In the last few years they have been kept fairly steady in monetary terms.

The relationship between car ownership and modal usage is shown in Figure 8, which shows how dramatic the shift from bus to car has been. As mentioned above, one of the important relationships is between car ownership and decentralisation. This is illustrated in Figure 9, which shows how the population living in the rural fringe has grown as car ownership has increased.

At a more detailed level there have been changes in traffic flow within the city, as shown in Table 22 and Figure 10. These are based on flow along a small sample of roads, so must be treated with some caution. For the whole city there was a reversal of the trends over the later period; during the period 1967 to 1971 the speeds dropped slightly, with an increase in flows, but after that speeds grew rapidly while the flows decreased. In the central area the traffic flow has decreased, but the speed increased from 1971 to 1976 both during the peak and the off-peak. The greater decrease in traffic flow in the central area relative to the rest of the city may well be due to the decentralisation of activities, causing fewer trips into the city centre. The reduction in congestion may have led directly to the

	1966		1971		1981	
	no.	%	no.	%	no.	%
H/h with 0 cars	115 490	67.6	112 050	64.6	91 180	55.1
H/h with 1 car	50 270	29.4	53 905	31.0	60 247	36.4
H/h with 2+ cars	5 150	3.0	7 970	4.4	14 181	8.6
Total	170 910	100.0	173 925	100.0	165 583	100.0
Total no. of cars	60 970	-	70 975	-	90 326	-

Table 20 Households Owning 0, 1, 2+ Cars in Leeds CB, 1966-1981

Source: Census of Population, 1966, 1971, 1981

	1966		1971		1981	
	no.	%	no.	%	no.	%
Train	2 740	1.1	2 280	1.0	2 180	1.2
Bus	137 450	56.6	111 920	50.9	59 240	33.0
Car	45 440	18.7	57 010	25.9	77 140	43.0
Motor cycle	3 150	1.3	1 640	0.7	3 310	1.8
Pedal cycle	2 730	1.1	1 750	0.8	2 260	1.3
On foot	36 490	15.0	} 35 320	16.1	27 270	15.2
None or work at home	7 160	2.9			4 700	2.6
Other	5 810	2.4	7 160	3.3	} 3 210	1.8
Not stated	1 750	0.7	2 960	1.3		
Total	242 720	100.0	220 040	100.0	179 310	100.0

Table 21 Mode of Transport to Work by Residents of Leeds CB, 1966-1981

Source: Census of Population, 1966, 1971, 1981

Note: The mode 'train' includes 'underground' for 1981, and the mode 'bus' includes 'public transport' in 1971. There is no underground in Leeds and the 280 people so described probably live in London during the period Monday to Friday, and travel to work there by underground.

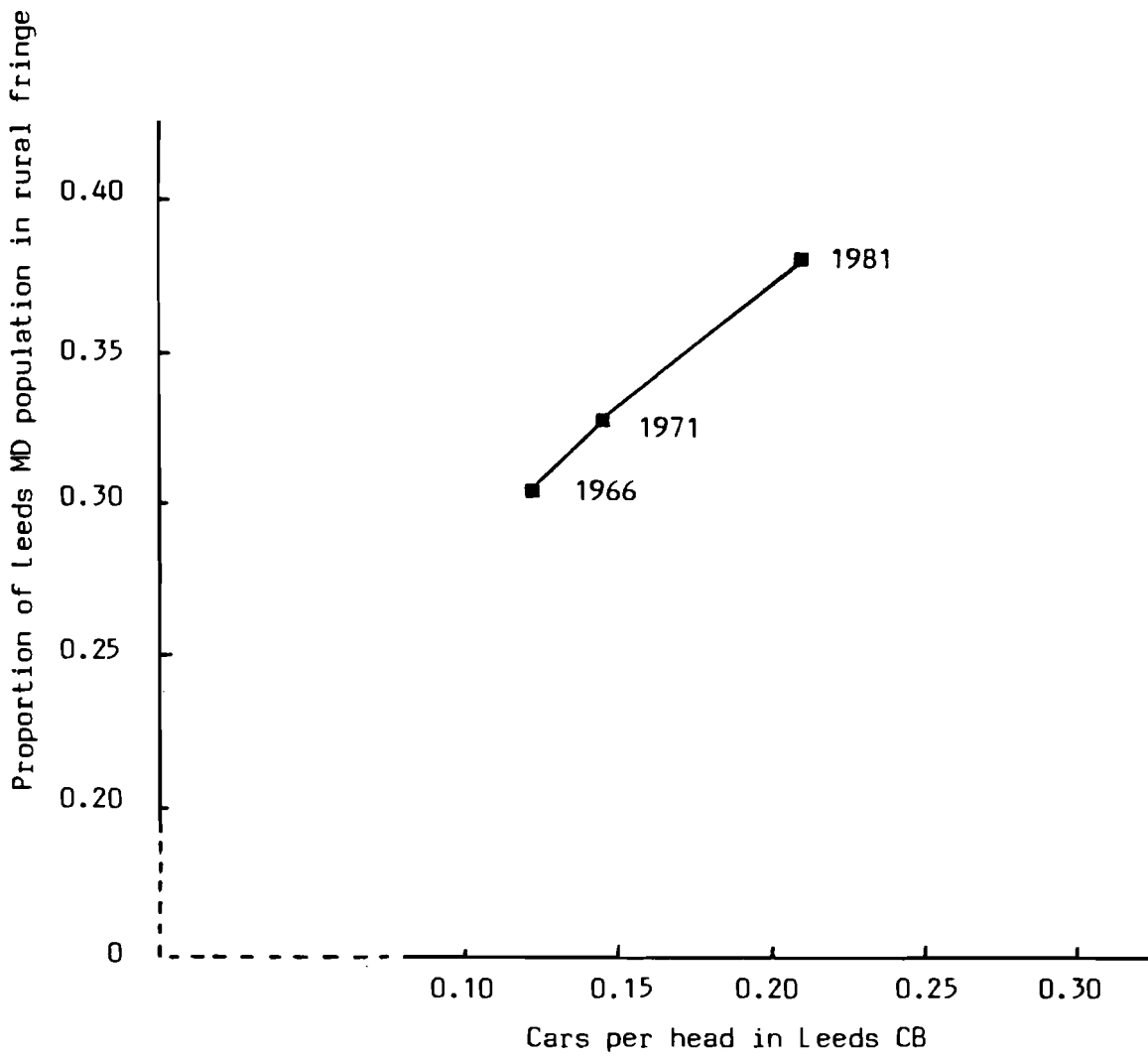


Figure 9 Decentralisation of Population and Car Ownership

	1967	1971	1976
<u>Average speed (km/h)</u>			
Whole city - peak	29.8	29.6	37.3
Whole city - off-peak	34.7	33.9	42.1
Central area - peak	11.9	12.4	23.6
Central area - off-peak	18.2	15.2	23.4
<u>Average flow (pcu/h)</u>			
Whole city - peak	1 715	1 780	1 710
Whole city - off-peak	1 110	1 175	1 135
Central area - peak	2 020	1 850	1 580
Central area - off-peak	1 610	1 505	1 225
<u>Parked vehicles/km</u>			
Whole city - peak	3.0	2.8	2.7
Whole city - off-peak	9.0	7.5	6.7
Central area - peak	2.1	2.0	4.5
Central area - off-peak	15.6	12.5	16.1

Table 22 Traffic Flows and Speeds in Leeds, 1967-1976

Source: M Marlow and R Evans, Urban Congestion Survey, 1976; Traffic flows and speeds in eight towns and five conurbations, Supplementary Report 438, Transport and Road Research Laboratory, Crowthorne, Berkshire.

Note: pcu = passenger car units.

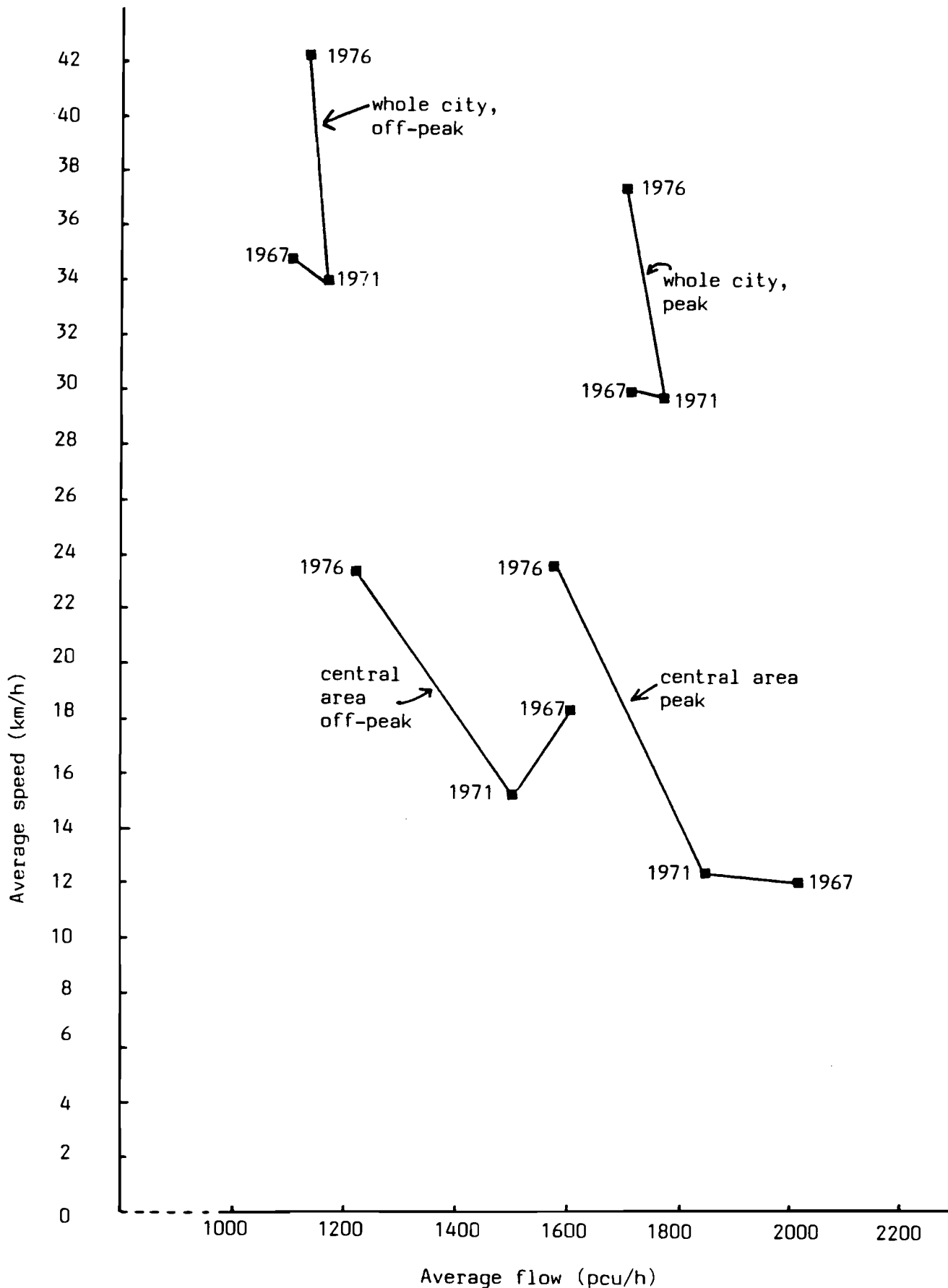


Figure 10 Traffic Flows and Speeds in Leeds

increased speed. In addition, a policy of traffic management has been pursued in Leeds in recent years. Improvements to the radial routes through the suburbs may have helped increase the speeds in the whole city relative to the city centre, which implies that there may have been an increase in the mean flow in the suburbs, which may well be due to the increase in residential and economic activity in the area.

Having examined the behaviour of the transport system in recent years the response of the local authority to these pressures, and the extent to which their transport planning policies have encouraged such trends will be considered. As discussed previously the first plan for Leeds after the War was the Development Plan submitted in 1951 (City and County Borough of Leeds, 1949), in which public transport is not mentioned, and so presumably not then seen to have a role in the planning process. Given that the growth in car ownership was not foreseen and bus travel was popular this is, perhaps, quite reasonable. However, there was to be a comprehensive road construction programme to increase capacity to relieve congestion in the city centre, with a substantial increase in car parking capacity to 6 590 spaces to reduce on-street parking, implying that the effect of improving the capacity of roads and car parking on the use of the car was not seen to be a problem.

As has already been shown, car ownership and usage has grown considerably. By the early 60's the problems of traffic in towns were being recognised, and the Buchanan Committee was set up to investigate the problems, and, in fact, used Leeds as an example (Ministry of Transport, 1963). The report was concerned mainly with environmental effects, but the growth of the car and the need for traffic management were considered.

In the late 1960's the problems identified by the Buchanan Report formed the basis of 'The Leeds Approach' - an approach to transport planning for the city developed collaboratively by central and local government (Leeds City Council, et al, 1969). In the study a policy of decentralisation of activities from the central area was not considered to be feasible, implying that the general outward movement was not recognised, although the need for careful phasing of urban renewal was acknowledged. Employment in the central business and industrial areas was expected to grow from 140 000 in 1961 to 163 000 in 1981, and so the transport system would have to cope with the resulting level of demand. Other objectives covered the need to cater for peak-hour travel, environmental improvement and flexibility in the plan.

The effects of rising car ownership were recognised, in particular, that some limitations would have to be put on the use of the car for the journey to work to the central area. The method of restraint was to be a limit on the number of car parking spaces, allowing for 20% of work trips to be by private car (the figure passed by about 1967 for Leeds residents, as shown in Table 21). The new spaces were to be provided on the

periphery of the central area, bringing the total to 16 700 spaces by 1981, with charges set at an economic level. There was to be some highway construction, containing "sufficient capacity to meet the future demand upon it without congestion" (Leeds City Council, et al, 1969, p.12). However, despite the apparent desire for large scale road construction public transport was seen to have a positive role to play, in order to cater for about 66% of work journeys to the city centre. This was to be achieved by reducing journey times by means of traffic management and planning policies and the introduction of three new services - express buses, city centre mini-buses and park-and-ride services from the outer suburbs. There is no mention of a fares policy or a possible need for subsidy. Thus 'The Leeds Approach' can be summed up as a statement of the need to complete the major road network, to place some restriction on car usage to the central area by means of a car parking policy and to provide an effective and efficient public transport system as an attractive alternative mode for car owners.

The concepts in 'The Leeds Approach' were embodied in the Development Plan Review, which was submitted in 1968, where the growth in car ownership was recognised, but also the necessity to provide public transport because some people would always need it. The policies of more attractive public transport, effective traffic management, restraint via car parking policy and some road building were the same as those in 'The Leeds Approach'.

In 1969 the West Yorkshire Transportation Study (Traffic Research Corporation, 1969) was published, but was of little value for transport planning in Leeds because no household survey was carried out, and the emphasis was on interurban flows. The analysis was based on the conventional four-stage transport model, but not calibrated very satisfactorily, with the use of 'K-factors' to improve the poor fit of the model on some of the major flows. The recommendations of the study were a list of major interurban road improvements, with the introduction of express buses on these to improve public transport. Because of the interurban nature of the study, there were no conclusions on transport policy within Leeds.

In 1974 local government was reorganised, and the new West Yorkshire Metropolitan County Council took over the strategic planning and transport functions of Leeds. The County Council decided to update the West Yorkshire Transportation Study, and, in fact, set up a much more ambitious project with a comprehensive data collection exercise and several topic studies. In fact, the modelling exercise was again based on the conventional model with very poor estimates of the land use inputs to the model (WYTCONSULT, 1977) with no serious recognition of the effects of the transport policies on the location of population and employment being considered. Indeed the very crude methods of forecasting the land use inputs cast serious doubt on the whole modelling exercise. However, the study provided very useful data for the Structure Plan, which was submitted to the Secretary of State for the Environment in

November 1978. By the late 1970's the urban transport problems of declining bus patronage, increasing costs and congestion on the roads had been recognised, but the recession of the economy meant few funds were available to carry out major reconstruction, even if such a policy was desirable. In fact the current method of financing local transport through the Transport Policies and Programme system is used by central government to control the level of local investment, while leaving the allocation between projects to the local authority, and this has affected the transport policies, because emphasis has been placed upon robustness. It is not possible to ascertain the extent to which the programme put forward is influenced by the overall aim of obtaining the maximum possible finance in times of economic recession. In fact the effects of recession, and the lack of economic growth, influence transport policies, with the shift from construction to the efficient use of existing infrastructure, with the introduction of further traffic management schemes and the encouragement of car-pooling and peak-spreading with the discouragement of non-essential peak journeys. The total number of car-parking spaces in central Leeds is to be between 14 500 and 15 000 in 1991, compared with the 16 700 planned for 1981 in The Leeds Approach, showing the recognition of the relationship between the provision of long-stay car parking and the policy of discouraging car use in the peak.

In general, transport policies for the city of Leeds are designed to tackle problems of poor accessibility and to support policies to help the local economy.

Public transport policies are also influenced by inflation because the need to minimize losses on public transport is emphasized, for example, by reducing some service levels, and by the introduction of more cross-town bus services to reduce the cost of terminal facilities and to help achieve the County Council's economic objectives in the inner city by increasing the employment opportunities for the residents (West Yorkshire Metropolitan County Council, 1978). A recent innovation has been the introduction of a policy of opening new stations on the local rail network.

The transport policies of the West Yorkshire Passenger Transport Executive for the whole county are broadly based on those devised previously for Leeds, with the general aims of improving the service, restructuring the service to meet demand and improving the balance between public and private transport (West Yorkshire Metropolitan County Council, 1978). A recent innovation has been the introduction of a policy of opening new stations on the local rail network.

To sum up, over the past thirty-five years there has been a huge growth in car ownership, some quite wide short-term fluctuations in the real price of petrol, and a steady rise in the cost of travel by bus since 1969, with effects on the relative use of each mode and consequences for the city in terms of road congestion and loss-making public transport. Over the period the local authority took many years to recognise the growth of car ownership. Indeed, it can be argued that early attempts to solve

traffic problems by building more roads exacerbated the long-term urban problems. The role of public transport in the urban planning system was recognised rather late, so that much effort had to be put into making the service more attractive in order to encourage those with a car available to use buses. The main method of restraint adopted for the central area of Leeds has been traffic management, in terms of car-parking capacity and charges. The economic recession has influenced transport policy by encouraging a move towards more efficient use of existing resources, rather than investing in new facilities.

Over the past few years there has been huge investment in telecommunications. This has been encouraged by the Government by removing the telecommunications part of the Post Office and setting it up as a separate corporation which is to be sold to the private sector. Various experiments are being carried out by the new organization, British Telecom, in Leeds, including videoconferencing. In order to stimulate the market the Government has encouraged the setting up of a rival company, Mercury, which has a figure of eight network linking the major urban centres, including Leeds.

8. Conclusions

A number of significant trends have been identified in this paper. Many of these are common to other cities, but the response by the planning system in Leeds may have influenced the amount of change, and possibly have had secondary repercussions.

During the 1950's and 1960's the birth-rate was such that the natural increase was sufficient to replace the out-migrants, but during the 1970's, the birth-rate fell to such an extent that the population level fell even in Leeds MD, following the earlier trend of the urbanised area of Leeds CB. At the same time the death rate has fallen slightly, leading to more people of retirement age. These trends have led to a fall in the mean household size, and a decrease in the proportion of the population who are economically active. Because of the rate of housebuilding, and the net loss of population the fall in mean household size has not led to more sharing of dwellings. The proportion of people who have moved into residences within Leeds has reduced over time, for which several reasons may be cited: the net-outward migration, the recession causing fewer houses to be built and fewer people able to afford to move, and a change of urban redevelopment policy by the local authority. There have been shifts in the housing market from rented, especially unfurnished private renting, to owner-occupation. The housebuilding process had tended to use new land rather than land used previously. Hence there has been a physical expansion of the city, which has exacerbated the decentralisation process. This has been related to the rise in car ownership, which has led to increased car use and decreased bus use. This has been influenced by the relative changes in the cost of travel by the two modes. Employment has also decentralised, but this has been linked to the shift from manufacturing to service sectors as many of the industries upon which Leeds was dependant have declined, but have been replaced to some extent by regional service functions. Leeds has tended to follow the national trend in unemployment. The decentralisation process has had an effect on traffic flows and speeds.

The identification of these trends, particularly their inter-relationships stimulates many ideas about ways of clarifying and understanding the processes at work, and in developing better ways of forecasting the future behaviour of cities.

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