

THE USE OF PUBLISHED POPULATION CENSUS BURGH WARD DATA FOR LOCAL POPULATION STUDIES: DUNDEE, 1901–1971

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Introduction

A useful source for local population studies in Scotland is the ward data in the Census of Population. Between 1901 and 1971 the published reports of the Registrar General for Scotland included data for the burgh/city wards.¹ After the 1971 census, the administrative and electoral geography of the country changed. The old burgh/city wards ceased to exist and were replaced by new regional electoral divisions and the district wards contained therein.² In 1981 and 1991 postcode sectors replaced wards as the main reporting unit.³ This paper, therefore, looks only at the information provided in the main published reports between 1901 and 1971. The analysis concentrates on those demographic and social variables which are, as near as is possible, comparable throughout the series and which can form the basis of local population studies. Unfortunately similar information is not available in the published reports for England and Wales.

The reports

Prior to 1951 only very basic information was provided for wards in the published reports. The 1901 tabulation provided figures for separate families, inhabited and uninhabited buildings, total population disaggregated by sex, persons speaking Gaelic only, persons speaking Gaelic and English and rooms with one or more windows. These were given for the nine wards and the city aggregate. No descriptive commentary was provided.

By 1911 the census format had changed, with separate reports for the four cities of Aberdeen, Dundee, Edinburgh and Glasgow and the 32 counties. These reports included data on parish wards and burgh wards. The information was the same as in 1901 without the language data. However, there was a descriptive section on population movement within the city of Dundee by parish ward supported by a table comparing the ward populations between 1901 and 1911. The number of wards remained at nine but there had been boundary changes in all wards and expansion northwards and eastwards.

By 1921 the city had expanded again, eastwards in 1913 and northwards in 1914, and included 11 wards.⁴ Population change at ward level was again shown — this time by burgh ward. Similar information was provided as in 1911, although persons per 100 windowed rooms was already calculated for the user.

The 1931 report again gave data for 11 wards. These had not changed geographically apart from the transfer of land from ward three to ward seven as a result of the Dundee Corporation Confirmation Act, 1927.⁵ Again, a table provided intercensal population change in the burgh wards. Information similar to that given in the 1921 report was provided but extra tabulations on housing were provided and extra commentary on these was included.

The first census after the hiatus in the series caused by the Second World War provided much more detailed information than had hitherto been available at ward level. There had been considerable expansion of Dundee during the two decades and a twelfth ward had been carved out in the centre of the city by 1951. A map of the wards was provided for the first time. This was presented in the form of a shaded map of population increase and decrease. Intercensal comparison could also be readily gauged by means of a table. The information which had been available since 1911 was still presented but additional information included ward population by age, sex and conjugal condition, various tables of household data and information on household amenities. There was extended commentary on the internal social and demographic geography of the city.

The 1961 report also included a base map of the 12 city wards but no variable was shown on this. Intercensal population change at ward level was tabulated. The basic information as outlined in earlier reports was again available from a number of tables. There was more detailed information on housing and households than that provided in 1951, and there was added information on housing tenure. The 1961 report contained considerably less commentary than the 1951 report, and by 1961 the wards had acquired names as well as numbers.

The 1971 report contained the most detailed ward data of any report. A ward base map was provided with only the names and numbers of the wards. Some of these names had changed since 1961. Intercensal population change by ward was not tabulated for the user, but could be calculated from the third table of the report in which the other data, discussed in more detail in this paper, were included. Of the 30 tables in the report, for which data were relevant to Dundee, 18 contained data at city ward level on a wide range of social and demographic topics. There was, however, nothing by way of commentary on the tabulations in the report. This is a pity since, as Hakim has noted, census commentaries can provide valuable additional information in historical research.⁶

Population distribution and density

One of the most fundamental items of interest in local population studies is population density. Table 1 shows the total population and the population increased at every year to 1961 and thereafter declined. This decline has continued to the present.⁷ Figure 1 shows the city wards for each year under

Figure 1 Dundee wards, 1901–1971

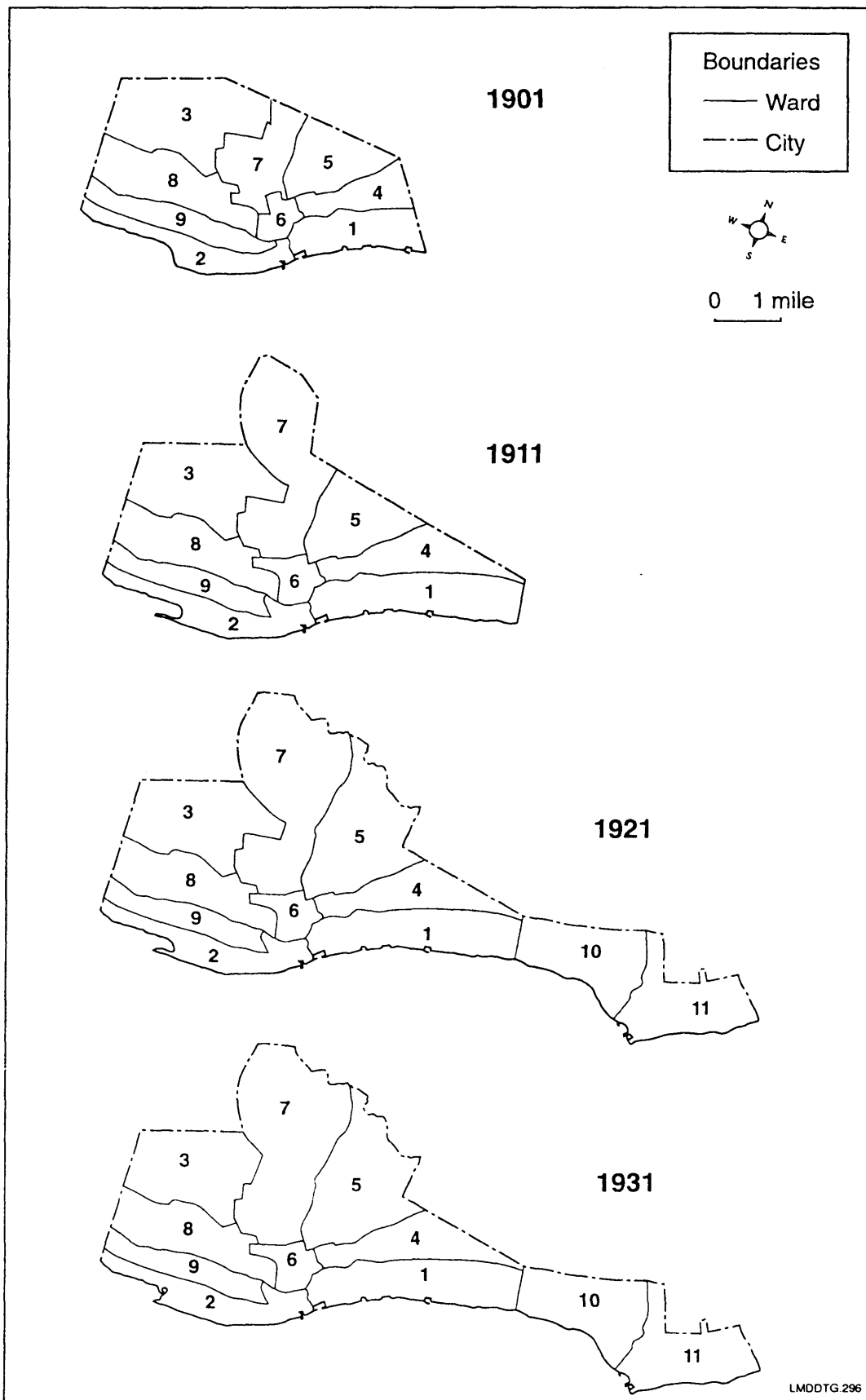


Figure 1 cont.

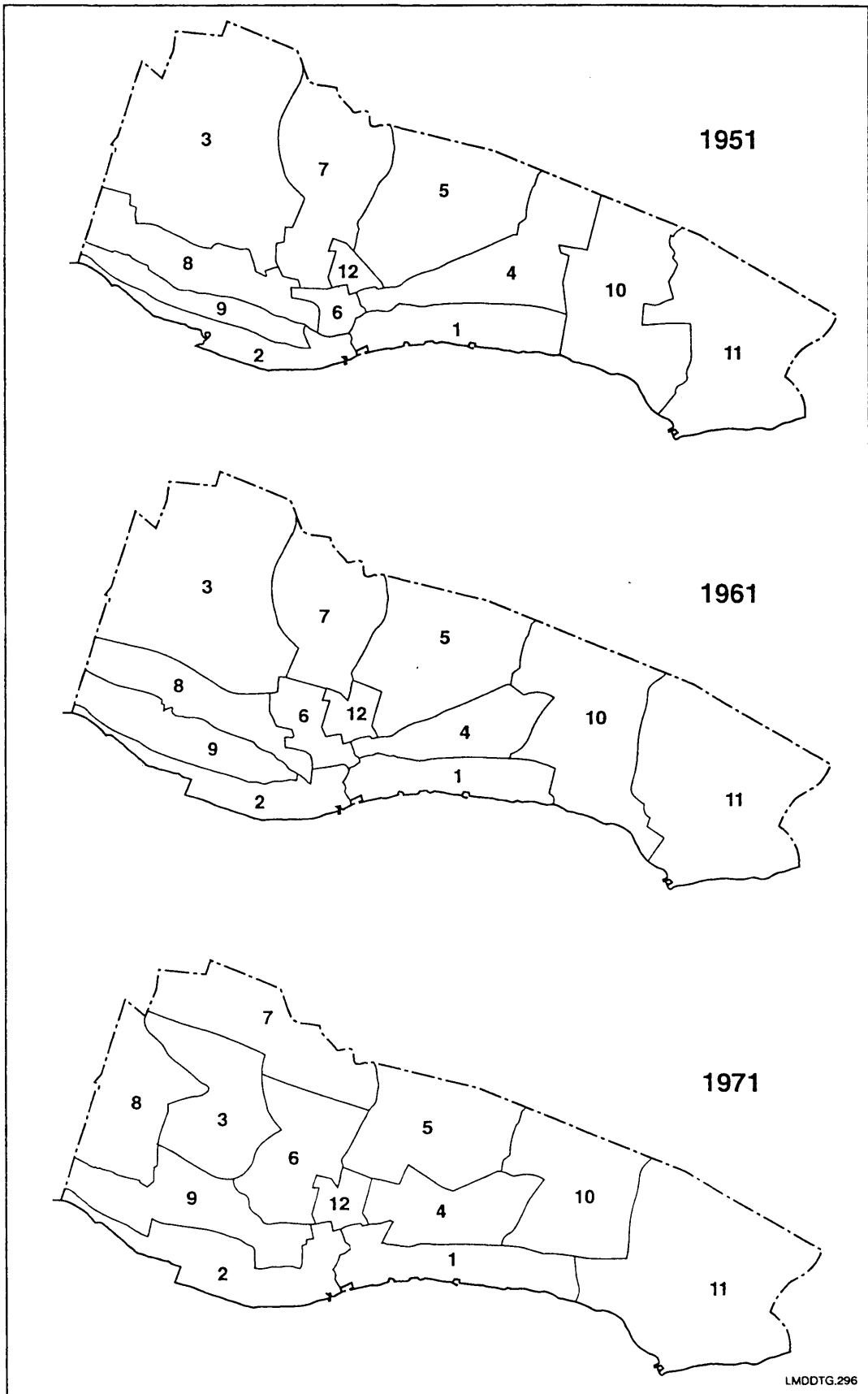


Table 1 Population and persons per acre at each census year, city of Dundee, 1901–1971

Year	Population	Persons per acre
1901	161,173	43.3
1911	165,004	34.2
1921	168,315	25.7
1931	175,585	26.6
1951	177,340	14.5
1961	182,978	15.0
1971	182,204	14.8

Source: see note 1.

Table 2 Persons per acre, city wards, 1901–1971

Ward	1901	1911	1921	1931	1951	1961	1971
1	37.6	22.6	22.4	26.0	20.6	16.8	13.0
2	41.0	29.2	28.5	26.6	18.4	16.3	14.7
3	20.7	21.4	20.3	22.5	9.0	12.4	19.6
4	70.8	42.0	39.7	36.8	18.2	23.0	19.0
5	53.0	45.1	26.9	29.7	13.7	18.2	16.1
6	127.9	104.6	101.9	99.1	61.7	28.8	14.9
7	44.0	13.0	13.9	16.6	20.0	20.8	17.3
8	35.7	35.8	34.9	35.1	17.5	16.2	17.3
9	54.8	69.3	61.6	63.2	34.2	17.4	12.7
10			7.3	6.8	3.0	10.7	16.3
11			10.6	10.9	4.1	4.0	6.8
12					107.4	59.6	41.1

Source: see note 1.

study and how the city boundaries expanded mostly northwards and eastwards. Expansion southwards was limited by the Firth of Tay. However, extensive land reclamation during the period can be seen along the shore line to the southwest of the city in ward two.

Ward base maps were only provided in the reports for 1951, 1961 and 1971. Prior to 1951 the base maps had to be constructed from plans supplied by the City of Dundee District Council Library for the years 1900, 1911, 1920 and 1931. It was possible from these to calculate the acreage of the wards and thereby the population density. Ward density data are unavailable before 1951. In 1951 persons per hundred acres were given for each ward. In 1961 data for persons per acre were tabulated and in 1971 for persons per hectare.

The average number of persons per acre in each ward is shown in Table 2. By comparing this with Figure 1 it is clear that overall density in the city declined over time due to significant land acquisition. However, there were marked disparities in the relative densities in each ward. The most densely populated

ward in 1901 was the sixth, in the centre of the city, at 127.9 persons per acre and the highest in 1971 was, again a central ward, the twelfth, with a much reduced density of 41.1 persons per acre. Since the total population of the city was 161,173 in 1901 and 182,204 in 1971, the continued expansion of the city into generally rural areas meant that there was an ever increasing amount of land per person. This, coupled with urban renewal and demolition of slum tenements, meant that average densities decreased in most wards over the decades.

In some wards densities fluctuated. This was the result of boundary changes, as more densely populated areas were incorporated, or of an increase in population numbers due to housing development. The construction of high-rise public housing in the 1950s and 1960s caused an increase in population density in ward three. Considerable expansion of public and private housing during the same period caused densities to increase in ward ten. Between 1951 and 1961 the population of this ward increased by 300 per cent.⁸

The movement of the populace out of the central wards to the expanding suburbs was noted in most reports. In the 1911 report, in a section called 'movement of the population within Dundee', mention is made of the fact that, like Edinburgh and Glasgow, the population of Dundee 'was tending to leave the older and more central portions, and to move into the more outlying parts'. One notable exception was the third or Lochee ward 'which though outlying, contains much old building'.⁹ This was a former textile village of largely Irish immigrants which was incorporated into the urban fabric of the city in the latter half of the nineteenth century.¹⁰ Lochee was formally incorporated into the city in 1859.¹¹

The 1931 report noted that the 'increase in the population has accrued for the most part in the north and northwest portions of the City'.¹² This was due to the development of new housing in these areas, particularly in the Mains/Linlathen area (ward five) and Downfield (ward seven).

This decline of population in the inner city wards, and increase in the outlying wards, was again noted in the 1951 report. The Registrar General summarized the process thus: 'As has been observed in other cities, Dundee seems to have lost population in the older part, lying along riverside and in the heart of the city, and gained population in the areas of new development, which mainly lie outwards from the middle of the city to its northern and western boundaries'.¹³

Nothing was said about the internal population geography of the city in the 1971 report, since no commentary was provided. However, by 1971 the total population of the city was in decline and the social folly of the outward expansion of public housing was being questioned in Dundee and other cities, and inner city rehabilitation and conservation were increasingly seen as viable alternatives to demolition and outer city expansion.¹⁴ Nevertheless, some wards continued to lose population while others gained. Lochee (ward three), Camperdown (ward eight), Douglas (ward ten) and Broughty Ferry (ward eleven) experienced significant increases, while Caird (ward five) showed a very slight increase.¹⁵ Hilltown remained the most densely populated ward mainly because of the construction of a number of large multi-storey blocks in a relatively small area and the renovation of many traditional, high-density tenement dwellings.

Table 3 Average number of persons per household, average number of persons per room and average number of rooms per house, city of Dundee, 1901–1971

Year	Persons per household	Persons per room	Rooms per house
1901	4.37	1.75	2.50
1911	4.27	1.69	2.53
1921	3.98	1.52	2.62
1931	3.71	1.40	2.70
1951	3.15	1.13	2.85
1961	2.90	0.96	3.10
1971	2.81	0.81	3.50

Source: see note 1

Nevertheless, the development of the city during the inter-war and post-war period saw an 'increasing emphasis on lower-density housing, underlined by the policy of re-housing in peripheral housing schemes people moved from obsolescent areas during the process of urban renewal'.¹⁶ This had the effect of reducing the land to people ratio and was a common feature of urban Scotland at the time, particularly in Glasgow.¹⁷

Housing and households

From the reports it is possible to derive the average number of rooms per house, the average number of persons per room and the average number of persons per household. These factors are closely inter-related. Household size tends to be linked with house size. Overcrowding is related to both house size and household size. Table 3 shows how the average household size and average number of persons per room decreased at each census. The increase in the average number of rooms per house can also be seen.

The geography of these phenomena is also mirrored in the overall population distribution and in the nature of housing provision. Until 1951, the largest households tended to be in the more densely populated, industrial wards. These were areas of working class housing where families were larger, due to higher fertility, and where the houses were generally smaller and less expensive. Here, overcrowding was a major problem in the small one- and two-roomed tenement apartments. This general congestion 'was making central Dundee a dangerous place in which to live'.¹⁸ Smaller households were found in the 'west end' (wards nine and two) and ward four where larger more expensive housing was more common and where the smaller families of the middle classes predominated.

From 1951, the larger households were to be found in the northern wards due to the development of new, larger, family housing. The central parts of the city were given over to smaller houses designed for smaller households, such as students, the elderly and single persons.

Table 4 Houses of various sizes, city of Dundee, 1911–1971

Year	One room	Two rooms	Three rooms	Four rooms	Five rooms	Six rooms	Total in one-six roomed houses
	%	%	%	%	%	%	%
1911	17.0	53.1	17.3	5.2	2.3	1.6	96.5
1921	15.7	51.7	17.8	5.9	2.7	1.9	95.7
1931	13.7	48.2	22.5	6.8	3.2	2.0	96.4
1951	8.4	40.1	29.4	12.9	4.6	2.2	97.6
1961	4.1	30.9	36.3	18.9	5.4	2.1	97.7
1971	2.0	20.1	34.8	26.3	9.5	4.1	96.8

Source: see note 1.

Prior to World War I, over 60 per cent of Dundee's housing consisted of only one or two rooms (Table 4). After that war the need to build new housing was paramount, and in 1917 the Corporation planned to meet the shortfall of 6,000 houses by means of public housing. The Logie scheme, started in 1919, was the first of many such inter-war council housing estates. Between 1919 and 1939, a total of 7,014 houses was built in the city. This averaged 351 per annum but was only slightly ahead of the annual loss of 241 through demolition. Thus, although the quality of housing stock was improving, the quantity was not. A further problem was that most of the new housing was too expensive for the average textile worker or labourer. Of the 1,560 applications for council housing in 1926 only 191 came from textile workers and 160 from labourers.¹⁹

After World War II the public housing programme was greatly expanded to such an extent that by 1970, 55.6 per cent of housing was public compared with just 25.1 in 1945. Indeed, Dundee had the highest proportion of public housing of the four cities. In 1970 Dundee had 204 houses in the public sector per 1,000 population, compared with 170 in Glasgow, 149 in Aberdeen and 102 in Edinburgh.²⁰

There has been some change in the definition of the terms used to describe households. In 1901 lodgers were counted as separate householders and in 1911 they were included as members of households.²¹ This practice continued until 1951 when lodgers were again enumerated separately.²² The definition of a house remained much the same during the period. Any dwelling with a distinct outside entrance from the street, road, lane, etc. or with a door opening directly into it from a common stair or passage was to be considered a house regardless of the number of households therein.²³ In enumerating rooms in a house, kitchens were counted as rooms, but not kitchenettes, sculleries, recesses, lobbies, bathrooms or landings.²⁴ Separate tabulations on households sharing dwellings were provided in the reports from 1921 to 1971.

Sex ratios

It is also possible to calculate sex ratios from the published reports. Imbalance of the sexes is largely the result of sex-selective migration and, to a lesser extent, differential mortality. Today, cities in developed countries all favour females. This has not always been the case, however. During much of the nineteenth and early part of the twentieth century, Dundee consistently had an imbalance in favour of females. This was largely a function of its industrial base which was underpinned by textiles — both jute and linen. This fact did not go unrecorded by the Registrar General. The sex imbalance was particularly high when age and conjugal condition were considered. 'Among the unmarried (including widowed and divorced persons) aged 16 years and upwards there are 23,052 males and 39,496 females, giving 171.3 females to every 100 males — a proportion obviously related to the largely female character of the occupations grouped under the textile industry. In 1921 the corresponding ratio was 179.1'.²⁵ In some west coast towns, where male-dominated heavy industry prevailed, the sex imbalance clearly favoured males. In 1901, in Clydebank and Coatbridge, for example, females accounted for only 46.0 and 45.5 per cent of the population respectively, and in none of the four wards in Clydebank, or the five in Coatbridge, did this reach 50 per cent.²⁶

Such imbalance of the sexes had far reaching effects on the demographic, social and economic conditions of local areas. Women were often the main or sole earners in Dundee households. The marriage market favoured females and this allowed unmarried women greater scope in choosing a partner. This generated a strong feeling of independence among working women in the city. However, as the textile industry declined so did the ratio of females to males (Table 5). The inter-war economic slump dealt a particularly severe blow to the jute industry which was under increasing pressure from competition from what is now Bangladesh. The number of individual jute manufacturing firms in the city fell from 50 in the early 1920s to 32 in 1939.²⁷

In 1901 and 1911 the wards in the 'west end' of the city (wards nine and two) had a high female to male ratio because of the presence of textile mills in the area and the presence of considerable numbers of female domestic servants domiciled in the mansions and large houses, belonging to the professional and business classes, which overlooked the Firth of Tay. Lochee also had an excess of females above the city average because of the textile industry there, which included the largest jute mill in the world — that of the Cox family.²⁸ In the inter-war decades the eastern wards had a significant excess of females. This is because Broughty Ferry was also an area where female, indoor domestic servants lived in large numbers. This was the area where the jute-barons had built their homes but where little of that fibre was processed.

In the post-war decades the pre-war patterns have largely remained the same. This distinct geography of sex differentials was noted in the 1951 report, which stated that the 'proportion of females in the population varied a good deal from ward to ward'.²⁹ The excess of females in Broughty Ferry was mentioned particularly, but no explanation was offered to account for this. These eastern

Table 5 Female population and employment in textiles, city of Dundee, 1901–1971

Year	Females %	Employment in textiles %
1901	56.0	–
1911	55.6	48.0
1921	55.6	–
1931	55.1	41.0
1951	54.2	23.0
1961	53.3	18.0
1971	52.7	–

Notes: Employment in textiles as a percentage of total employment i.e. males and females.

Source: See note 1 for percentage female; A.M. Carstairs, 'The nature and diversification of employment in Dundee in the twentieth century', in S.J. Jones ed., *Dundee and District*, (Dundee, 1968), 318–36, Table 46.

wards (eleven and ten) continued to have above average levels of excess females, less as the result of domestic servants and more the result of an older age structure in these areas which tends, because of differential mortality, to be female dominated. Ward four, by 1971, was also an area with a high proportion of women again because of an older age structure. This ward was dominated by the Craigie estate which was built in the 1920s, and in which young families were housed. The bulk of the population, in this ward, had therefore aged by this time, and this is reflected in the sex imbalance. The higher than average excess in the western wards can also be explained in terms of an ageing of the population. But this was also the bed-sit area of the city which tended to be dominated by young single females (much as young single females dominated the domestic service industry in the pre-war decades) who moved into the city to work.

Conclusion

This paper has shown that it is possible to trace some major elements of the social and demographic patterns of the Scottish city at a spatial level which allows general comparisons to be made over time. Clearly a more detailed picture can be constructed from a finer resolution, such as the nineteenth century enumerators returns.³⁰ The ever increasing amount of small area census data available since 1961 also allows for detailed local population studies.³¹ Limited though the published ward data are, particularly prior to 1951, they offer a useful insight into the changing social and demographic geography of the Scottish cities, which this example of Dundee demonstrates. What is clear is that socio-demographic factors were inextricably linked with economic and political processes through changes in employment structure and housing policy. The patterns which emerge show how population responded to these shifts which contributed to the patterns of continuity as well as change in the internal geography of the city throughout much of the twentieth century.

NOTES

1. The sources are: Registrar General (Scotland), Census of Scotland, 1901, Vol. I, pt VIII, Municipal wards (Cd 1257), (Glasgow, 1902); Registrar General (Scotland), Census of Scotland, 1911, Vol. I, pt 3, The city of Dundee (Cd 6907II), (London, 1912); Registrar General (Scotland), Census of Scotland, 1921, Vol I, pt 3, City of Dundee, (Edinburgh, 1922); Registrar General (Scotland), Census of Scotland, 1931, Vol. I, pt 3, City of Dundee, (Edinburgh, 1932); Registrar General (Scotland), Census of Scotland, 1951, Vol. I, pt 4, City of Dundee, (Edinburgh, 1953); Registrar General (Scotland), Census 1961, Scotland, Vol. I, pt 4, City of Dundee, (Edinburgh, 1963); Registrar General (Scotland), Census 1971, Scotland, Dundee City, (Edinburgh, 1972).
2. General Register Office for Scotland, 1996, personal communication.
3. For an explanation of the census geography of Scotland, and the rest of Britain, see M. Coombes, 'Dealing with census geography: principles, practices and possibilities, in S. Openshaw ed., Census users' handbook, (Cambridge, 1995), 111–32; D. Dorling, 'Visualizing the 1991 census', in S. Openshaw ed., Census users' handbook, (Cambridge, 1995), 167–211; D. Dorling, A new social atlas of Britain, (Chichester, 1995); C. Denham, 'Census geography, I: an overview', in A. Dale and C. Marsh eds, The 1991 census user's guide, (London, 1993), 52–69; C. Denham and D. Rhind, 'The 1981 census and its results', in D. Rhind ed., A census user's handbook, (London, 1983), 17–88.
4. Registrar General (Scotland), Census of Scotland, 1921, 87.
5. Registrar General (Scotland), Census of Scotland, 1931, 88.
6. C. Hakim, 'Census reports as documentary evidence: the census commentaries, 1801–1951', *Sociological Review*, 28 (1980), 551–80.
7. D. Graham, 'Twentieth century demographic trends in the Scottish cities', in A. H. Dawson, H. R. Jones, A. Small and J. A. Soulsby eds, *Scottish Geographical Studies*, (Dundee and St Andrews, 1993), 268–89.
8. Registrar General (Scotland), Census 1961, Scotland, 11.
9. Registrar General (Scotland), Census of Scotland, 1911, 84.
10. W. H. K. Turner, 'The growth of Dundee', *Scottish Geographical Magazine*, 84 (1968), 76–89.
11. J. Jones, 'Historical geography of Dundee', in S. J. Jones ed., *Dundee and district*, (Dundee, 1968), 259–77.
12. Registrar General (Scotland), Census of Scotland, 1931, 88.
13. Registrar General (Scotland), Census of Scotland, 1951, 5.
14. I. H. Adams, *The making of urban Scotland*, (Montreal, 1978).
15. Registrar General (Scotland), Census 1971, Scotland, Table 3.
16. Jones, 'Historical geography of Dundee', 275.
17. Adams, *The making of urban Scotland*, 221–44.
18. C. A. Whatley, D. B. Swinfen and A. M. Smith, *The Life and times of Dundee*, (Edinburgh, 1993), 165.
19. Whatley, Swinfen and Smith, *The Life and times*, 168.
20. Adams, *The making of urban Scotland*, 177–8.
21. Registrar General (Scotland), Census of Scotland, 1911, 90.
22. Registrar General (Scotland), Census of Scotland, 1951, 13.
23. Registrar General (Scotland), Census of Scotland, 1951, 13.
24. Registrar General (Scotland), Census 1961, Scotland, 9.
25. Registrar General (Scotland), Census of Scotland, 1931, 89.
26. Registrar General (Scotland), Census of Scotland, 1901, 217.
27. Whatley, Swinfen and Smith, *The Life and times*, 160.
28. M. Watson, *Jute and flax mills in Dundee*, (Tayport, 1990), 22; E. Gauldie, *Cruel habitations*, (London, 1974), 204.
29. Registrar General (Scotland), Census of Scotland, 1951, 9.
30. See, for example, S. J. Jones, *The 1841 census of Dundee*, University of Dundee Department of Geography Occasional Paper 3, (Dundee, 1975).
31. Denham, 'Census geography', 53; P. Norris and H. M. Mounsey, 'Analysing change through time', in D. Rhind ed., *A census user's handbook*, (London, 1983), 265–86.