DEMOGRAPHIC AND SOCIAL TRENDS: THEIR IMPLICATIONS FOR THE DEPARTMENT OF SOCIAL WELFARE

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The enclosed report on demographic and social trends has recently been prepared by the Research Section. The work underlying the report was originally carried out in response to a request for background notes for a speech given by the Minister of Social Welfare, but because the implications of these trends are likely to be of interest right across the Department of Social Welfare, it was decided that a full report should be produced and distributed throughout the department.

Recent trends in the size and age structure of the New Zealand population are described, together with projections of the size and age structure of the population from a 1988 base through to the year 2051. Because of the Department's special interest in children, youth, and the elderly, more detailed descriptions of changes in these populations have been provided. Some recent social and economic trends affecting these populations, and estimates of their future size and age structure are described. Particular attention has been paid to trends in labour force participation by young people aged 15-19, and by the elderly (aged 60 or more). An analysis is also provided of trends associated with the participation of women in the labour force.

A summary of the trends described is provided at the back of the report.

It is recognised that there are many other topics of social and demographic importance that are not addressed in this report, for example analyses of the Maori population and of regional differences. It was not possible to address such issues in producing this work, partly because of the limited time available to carry out the work, but partly, too, because of a lack of disaggregated data, particularly in the population projections.

It is intended that the Research Section will conduct further demographic and social analysis work, which may address some of these outstanding matters.

If you have any particular queries about the report or any more general questions about demographic issues of importance to the Department's functioning, contact either myself or Marion Norris, one of the authors of the report.

Ross Mackay
Director Research

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The views expressed in this report are those of the authors, and do not necessarily reflect the view of the Department of Social Welfare.

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INTRODUCTION

There are a large number of areas of social, economic, and demographic change which have implications for the Department of Social Welfare. A report entitled The Implications of Selected Dimensions of Social and Demographic Change for the Department of Social Welfare, which examined some of these, was prepared by Alan Jones in November 1984. In April 1989, the Research Section of the Deprtment was requested to provide background notes for an address to be given by the Minister of Social Welfare to the New Zealand Demographic Society. This report was produced to meet that request. The report expands and updates the information given in Jones's report.

The report begins with a description of the use which is made of demographic information within the Department of Social Welfare.

Recent trends in the size and structure of the New Zealand population are described, together with a projection of the size and age structure of the population from 1988 to 2051. Two dependency ratios have been calculated in an attempt to assess the extent of future dependency relative to the capacity of the economy to support dependents.

Because of the Department's special interest in children, youth, and the elderly, more detailed descriptions of changes in these populations have been provided. Recent trends affecting these populations, and the projected future size and age structure of these populations is described. Particular attention has been paid to trends in labour force participation by young people aged 15-19, and by the elderly (aged 60 or more).

Finally, an analysis of trends associated with the participation of women in the labour force is reported.

DEPARTMENTAL USE OF DEMOGRAPHIC DATA

The Evaluation Unit of the Department has produced occasional reports assessing the implications of social and demographic change for the Department of Social Welfare. This report expands and updates the most recent of these reports (Jones 1984).

Demographic data are used in the analysis of the effectiveness of current policy. For example, demographic data are used in the assessment of the coverage and take-up of various benefits and services. One problem in this analysis is the continuing under-reporting of the number of beneficiaries as measured by the Census, compared with the number recorded by the Department's own benefit statistics.

Forecasts of the number of family benefits in the next three years, and of the number of national superannuitants, are made each year by the Department's Statistics Section. These forecasts are based upon the projected size of the population in the relevant age group.

Demographic analysis is also used in planning future policy, and in analysing and costing future policy options. For example, the size and age structure of the population in the future has been used in the assessment of alternative future retirement income provisions and family assistance provisions.

Trends in family or household composition are of particular interest to the Department. Most of the published Census tables are based on individuals or households rather than on families, so analysis of trends by family composition often requires the production of special tables. The Research Section has recently used Census data to produce a profile

of sole parents, including trends in the sole parent population from 1976 to 1986.

Demographic data are used as an adjunct to the monitoring of social and economic trends relevant to the Department's activities. For example, the Research Section uses population estimates to calculate population-adjusted rates of offending by juveniles, so that trends in juvenile offending can be monitored.

Census data are now available on a computer database called 'Supermap', which allows regional and district breakdowns. Although Census and Departmental district boundaries do not coincide directly, increasing use is being made of Census data for planning at regional and district level.

Another major use of demographic data is in the form of indicators for resource allocation at a regional or district level. Estimates and projections of the Maori population by iwi and locality, which are not currently available, would be most useful in this regard.

Possible future uses of demographic data include analysis of the ethnicity of beneficiaries relative to population information, the development of more sophisticated methods of benefit forecasting, and longer-term projections of benefit numbers.

THE NEW ZEALAND POPULATION

Recent Trends

The Government Statistician, Steve Kuzmicich, has recently published an article describing general population trends. These trends are as follows:

Population Change - The post WWII years witnessed a marked acceleration of the population growth rate, but from 1973 the rate slowed considerably. Intercensal population growth rates within the period 1961-1981, however, showed substantial fluctuations between 0.29% and 2.11%.

- Natural increase and net external migration are the primary sources of population change. Whilst the natural growth rate showed a steady drop during the period from 1961 to 1981, net migration was particularly volatile. A significant drop in the number of live births and rise in the number of deaths contributed to the slower natural growth rate. This, combined with the ageing of the baby boom generation, has had a significant effect on the country's age pyramid with the population becoming steadily older.

- During the 1980's there has been a continuation of traditional south to north and rural to urban drift which has affected natural increases in these areas. The resurgence in urban growth has had a major influence on subnational trends. In 1986 83.7% of the New Zealand population resided in urban centres (>1,000 people).

Fertility Trends - Two major trends in the total fertility rate (TFR) have occurred since 1912. Firstly the post-depression baby boom comprised a temporary dramatic rise against a long-term downward trend. This has had a marked impact on the population age pyramid. Secondly, since 1961 the TFR has plummeted to sub-replacement level reflecting a decline in fertility rates for women of all age groups particularly within marriage. Both Maori and non-Maori populations experienced this fertility decline although the gap between their fertility rates narrowed.

- The low fertility rate reflects a number of factors including use of effective contraceptives, increased participation of women in the workforce, a decline in the rate of marriage, a rise in the proportion of people never married, rising divorce rates and general economic conditions.

- It is expected that recent demographic trends are likely to continue, with more people marrying later, more never marrying and more people not having children.

Mortality Trends - Mortality also affects the size and structure of a population, but its effect is less pronounced and it fluctuates less. Since 1961 the annual number of deaths has increased, contributing to the diminishing level of natural increase of the total population.

- Between 1950-1986 life expectancy at birth increased significantly, particularly since 1975. Average life expectancy increased at similar rates for both men and women. Earlier, improvement in life expectancy was achieved through reduction in

mortality at younger ages, but more recently reduction in mortality has occurred largely at ages 45 and over.

- Mortality rates for both Maori and non-Maori populations have fallen and there has been a narrowing of ethnic differences in life expectancy at the younger ages. However, life expectancy at age 60 years and over for the Maori population has not shown this improvement. Mortality rates for the Maori population in 1980-1982 are similar to Pakeha rates in 1950-52.

Migration Trends - External migration has been the most variable aspect of population change. Net migration patterns in the last 40 years have evidenced dramatic shifts. In broad terms, annual arrivals consistently exceeded annual departures in the period 1948-1967 and in the subsequent 20 year period there was a sharp increase in net emigration. Within these broad periods migration trends have been highly volatile. Movement between New Zealand and Australia, accounting for 40-50% of population exchange on a permanent long-term basis, has been a significant contributor to this volatility. Since 1981 departures of persons in the younger (18-26 years) working age groups have consistently exceeded arrivals, and accounted for 93% of total net emigration in 1987.

- The observed fluctuations in net external migration levels, reflecting varying economic situations in New Zealand and other countries, makes forecasting difficult.

Source: Kuzmicich (1988)

Population Projections

Projections of the size of the population are made by assuming levels of fertility, mortality, and migration for future years. From time to time the Department of Statistics publishes sets of projections of the population, based on various assumptions about fertility, mortality, and migration. Until recently, the latest projections were based on the size and structure of the population in 1985. However, new projections based on the 1988 year have recently been produced.

Although the Department of Statistics produces a range of projections using differing assumptions, only the 'medium' assumption projections have been used in this report, and no attempt has been made to assess the extent to which the underlying assumptions affect population trends of interest to the Department of Social Welfare.

The 'medium' population projections produced by the Department of Statistics are based on the following assumptions:

Fertility - Medium fertility assumption. The total fertility rate[1] is assumed to increase slightly from 2.13 in 1989 to a high of 2.19 in 1992, and then to decrease steadily to reach 1.85 in 2017. Beyond 2017, the fertility rate is assumed to remain constant.

Mortality - Medium mortality assumption. Life expectancy at birth is assumed to increase from 71.6 years in

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[1]The average number of children a woman will bear during her lifetime.

1989 to 76.0 years in 2051 for males, and from 77.6 years in 1989 to 83.0 years in 2051 for females.

Migration - A long-term net annual migration gain of 5,000 is assumed.

Table 1 (below) gives the projected size of the population based on these assumptions.

Table 1: Projected Size of the Population, by Age Group, 1988-2051

Census Year	Population				Median Age (Years)
	Total	Aged 0-14	Aged 15-59	Aged 60+	
1988[2]	3,347,220	780,350	2,065,360	501,510	30.3
1991	3,460,370	796,990	2,136,470	526,910	31.0
1996	3,650,260	855,050	2,240,450	554,760	32.4
2001	3,814,160	895,240	2,325,580	593,340	33.7
2006	3,942,970	868,640	2,426,930	647,400	35.3
2011	4,047,570	808,980	2,501,800	736,790	37.0
2016	4,146,970	772,700	2,549,320	824,950	38.0
2021	4,246,390	775,180	2,540,430	930,780	38.6
2026	4,331,930	793,210	2,502,330	1,036,390	39.2
2031	4,387,780	793,560	2,462,800	1,131,420	40.3
2036	4,411,700	768,830	2,446,270	1,196,600	41.6
2041	4,412,600	738,970	2,462,570	1,211,060	42.6
2046	4,400,540	724,240	2,465,610	1,210,690	43.1
2051	4,379,260	724,820	2,418,140	1,236,300	43.2

Source: Department of Statistics population projections, 1988 base.

The projected intercensal increases in the total population, and in the populations aged 0-14 years, aged 15-59 years, and aged 60 or more are shown in Table 2 (over).

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[2]Base year of projection

Table 2: Projected Intercensal Increases in Total Population, in Population Aged 0-14 Years, in Population Aged 15-59, and in Population Aged 60 or More

Period	Percentage Growth in Population			
	Total	Aged 0-14	Aged 15-59	Aged 60+
1988-1991	3.4	2.1	3.4	5.1
1991-1996	5.5	7.3	4.9	5.3
1996-2001	4.5	4.7	3.8	7.0
2001-2006	3.4	-3.0	4.4	9.1
2006-2011	2.7	-6.9	3.1	13.8
2011-2016	2.5	-4.5	1.9	12.0
2016-2021	2.4	0.3	-0.3	12.8
2021-2026	2.0	2.3	-1.5	11.3
2026-2031	1.3	0.0	-1.6	9.2
2031-2036	0.5	-3.1	-0.7	5.8
2036-2041	0.0	-3.9	0.7	1.2
2041-2046	-0.3	-2.0	0.1	0.0
2046-2051	-0.5	0.1	-2.1	2.1

Source: Department of Statistics population projections, 1988 base.

The major features of these population projections are as follows:

- The total population is projected to increase by 30.8% over the projection period. The population is projected to increase, although at a declining rate, until 2036. Beyond that date, the total population is projected to decline slightly.

- Although the population aged between 0 and 14 years is projected to increase until the year 2001, the population projections show a 7% decrease over the projection period. This decrease occurs in two phases, from 2001 to 2016, and from 2031 to 2046.

- The working age population (aged 15-59) is projected to increase by 14.6% over the projection period. The working

age population is projected to increase, although at a declining rate, through to the year 2016. Beyond this date the population aged between 15 and 59 is projected to decrease in size, apart from a slight increase between 2036 and 2046.

- The population aged 60 or more is projected to increase in each intercensal period, with atotal increase of 147% over the whole projection period. The increase in this population is considerably greater than the increase in the total population, except for the period 1991-1996. The population aged 60 or more is projected to increase at an increasing rate through until 2011, and the most rapid growth in this population will occur between 2006 and 2026.

More detailed examinations of trends in the elderly (aged 60 or more), child (aged 0-14 years), and youth (aged 15-19 years) populations are reported in the following sections of this report which deal specifically with these age groups.

Dependency Ratios

Dependency ratios measure the size of the dependent population relative to the size of the income-generating population.

Jones (1984) notes that '(d)ependency ratio measures should indicate the level of demand imposed by dependents relative to the capacity of the economy to produce income'. Jones evaluated four indices which might be used as dependency ratios, showing the weaknesses of each index. The first two of these indices are reproduced below using 1988 base population and labour force projections. The definitions and comments given with each index are taken directly from Jones's work, with a few minor variations.

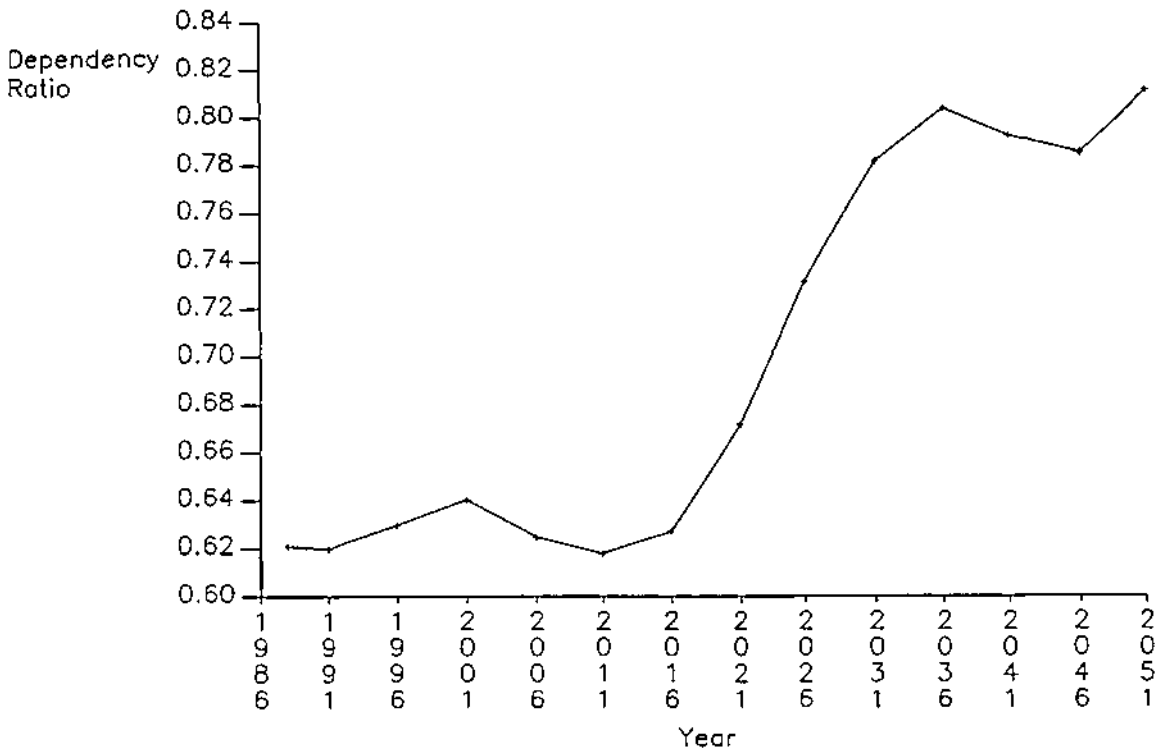
Index 1 - The Unweighted Dependency Ratio, Population Based

Definition: The ratio is the number of persons aged 0-14 plus the number aged 60+ per person aged 15-59.

Comment: This ratio is based on a head count of dependents, but the count is incomplete since dependents aged 15-59 are not included. The index assumes that all of the elderly population (aged 60+) are dependents, while many individuals in this age group will be employed. Index 1 does not recognise the different nature and size of the demands imposed by the young and the old, although the contribution of each group can be separated out. Finally, the denominator is a poor index of the productive capacity of the economy because no distinction is made between the working and non-working populations.

The value of Index 1 is projected to remain fairly constant until 2016, to increase rapidly between 2016 and 2031, and to fluctuate without showing any clear trend beyond that date. Figure 1 (over) shows the value of Index 1 from 1988 through to 2051.

Figure 1: Projected Values of Unweighted Dependency Ratio, Population Based, 1988-2051



As noted earlier, this index does not distinguish between the elderly population (aged 60 or more) and the child population (aged 0-14), which are grouped together as 'dependents'. Figure 2 (over) shows the contribution of each of these groups to the overall ratio. The dependency ratio values graphed in Figure 2 are the projected number in the target population (elderly or child populations respectively), divided by the projected number in the working age (15-59 years) population. The line shown in Figure 1 is the sum of the two lines shown in Figure 2.

Figure 2: Contribution of Trends in the Projected Child and Elderly Populations to the Unweighted Dependency Ratio, Population Based, 1988-2051

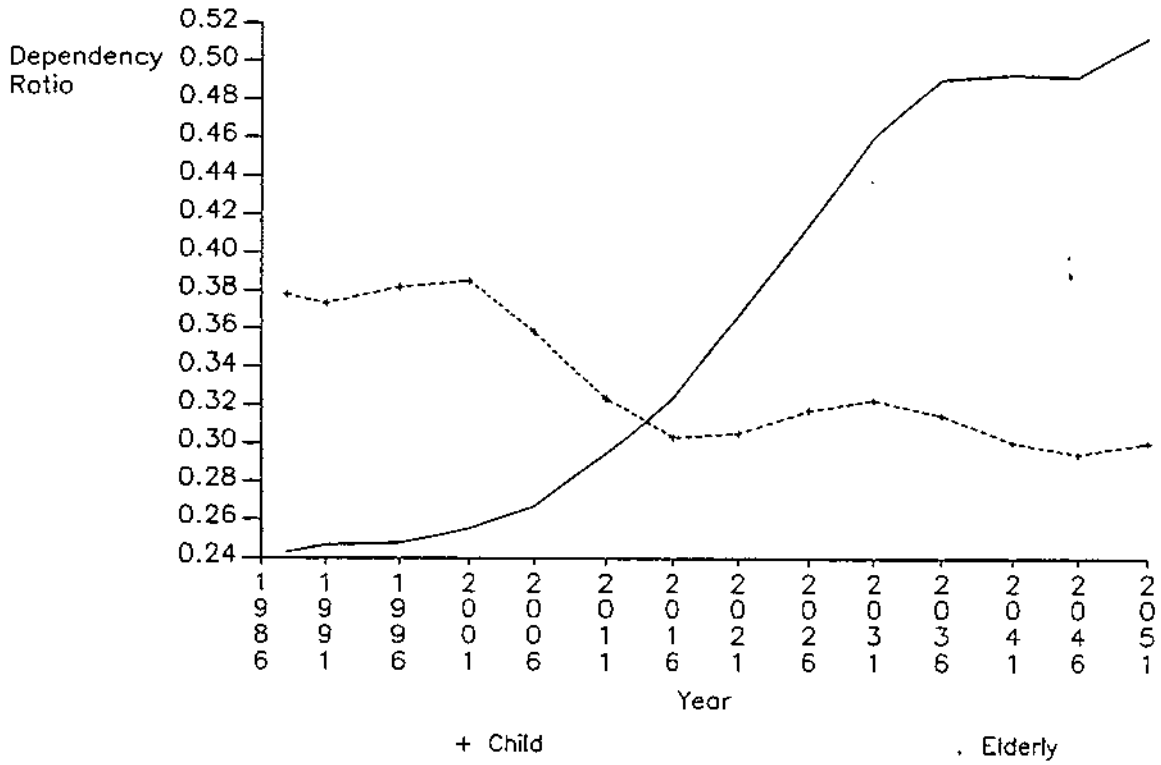


Figure 2 shows that the number of elderly people is projected to rise relative to the number of people aged between 15 and 59. The increase is projected to take place mainly between 1996 and 2036. In 1988, the base year of these projections, there were four people of working age for each person aged 60 or more, but the projections indicate that there will be only two people of working age per person aged 60 or more by the year 2036. Beyond 2036 the ratio of elderly to working age population is projected to remain at a high level through until 2051, the last year for which projections have been made.

The child population is projected to decrease relative to the working age population over the projection period. Most of this decrease is projected to take place between 2001 and 2016. Prior to 2001 the number of dependent children is projected to remain fairly constant relative to the number of people in the working age population (aged 15-59). Between 2016 and 2026 a small increase in the ratio is projected, but the ratio is projected to begin to fall again beyond 2031.

Figure 2 indicates that the projected size of the change in the ratio of elderly to working age populations is greater than the projected size of the change in the child population, relative to the working age population. Prior to 2016, the projected fall in the child population compensates for the projected rise in the elderly population, so that the overall dependency ratio will remain fairly constant, but beyond 2016 projected changes in the child population are quite small, while the elderly dependency ratio is projected to increase rapidly. This results in the projected increase in the overall dependency ratio between 2016 and 2036, shown in Figure 1.

Index 2 - The Unweighted Dependency Ratio, Labour Force Based

Definition: This ratio is the number of persons aged 0-14 plus the number aged 60 or more per member of the labour force[3].

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[3]Jones (1984) used projections of the full-time (at least twenty hours per week) labour force as the denominator of this index. This report uses projections of the total labour force, so that all individuals employed or seeking

(Footnote Continued)

Comment: Like Index 1, this measure uses a count of those aged 0-14 plus those aged at least 60 as a measure of the number of dependents. Dependents aged between 15 and 59 are not included, while independent persons aged 60 or more have been included in the count of dependents. The young and old are again assumed to exert equal demands. Labour force projections prepared by the Department of Statistics assume that labour force participation rates will change between 1988 and 2001, and since labour force participation varies by age for those aged between 15 and 59, changes in the age structure of the population will also affect the size of the larger labour force. Jones indicates that this index is preferable to Index 1 because the size of the labour force is a better indicator of the productive capacity of the economy than is the size of the working age population. However, this index will be inadequate as a measure of productive capacity if the extent of unemployment, or the mix between part-time and full-time employment varies over time.

Two sets of projections of the value of Index 2 have been calculated, based on high and low projections of labour force participation rates. These projections of the total size of the labour force are based on the 1988 year, and have been recently produced by the Department of Statistics. The assumptions underlying these projections are as follows:

(Footnote Continued)
work are included, regardless of the number of hours per week.

Fertility - Medium fertility assumption, as defined earlier (see page 7)

Mortality - Medium mortality assumption, as defined earlier (see page 8)

Migration - A long-term net annual migration gain of 5,000

Labour Force Participation - Both sets of projections assume that participation rates for males will decline until 2001, while rates for females will increase over the same period. Beyond 2001 labour force participation rates are assumed to remain constant. The low labour force participation rate projections assume a greater decline in the male rates, and a smaller increase in the female rates, compared with the high labour force participation rate projections.

The value of Index 2 is projected to remain relatively stable until the year 2016. Between 2016 and 2036 the value of this index is projected to rise considerably. Beyond 2036 the index is projected again to take on a more stable pattern. The projected values of Index 2 are a little higher when the low projections of labour force participation are used as the denominator of the index, but both sets of projections of Index 2 show the trend described above.

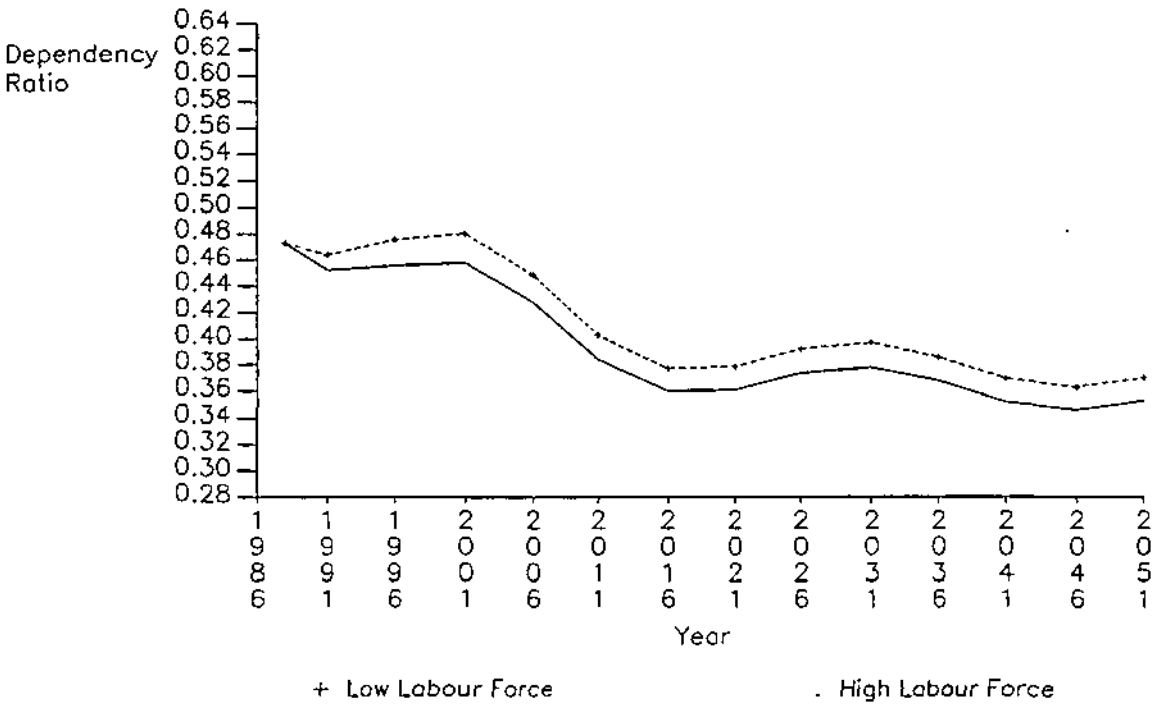
Figure 3 (over) shows the two sets of projected values of Index 2 from 1991 through to 2051.

Figure 3: Projected Values of Unweighted Dependency Ratio, Labour Force Based

The respective contributions to the overall value of Index 2 made by the child population, and by the elderly population, are shown in Figure 4 (over). The upper graph (child population) and the lower graph (elderly population) have been drawn to the same scale, so that the dimensions of change in each population are comparable.

Figure 4: Contribution of Trends in the Projected Child and Elderly Populations to the Unweighted Dependency Ratio, Labour Force Based, 1991-2051

A) Child Population



B) Elderly Population

Figure 4 shows that the size of the child population, relative to the size of the labour force, is projected to decrease between 2001 and 2016. Prior to 2001, and after 2016, the size of the child population is projected to be fairly stable relative to the size of the labour force. The elderly population is projected to grow considerably, relative to the size of the labour force. This growth in the relative size of the elderly population is projected to occur mainly between 2001 and 2036. Again, it is the projected growth in the elderly population which completely accounts for the increase in Index 2 seen in Figure 3.

Dependency Ratios Specific to the Department of Social Welfare

Jones (1984) proposed three further indices of the dependency ratio, to measure of the demand imposed by dependents on the productive capacity of the economy. These indices apply weightings to the child and elderly dependent populations to account for differential costs imposed by child and elderly dependents. The first of these indices weighted the child population by the net per capita cost of provision of family benefit, and weighted the elderly population by the net per capita cost of provision of national superannuation, while the second included the cost of provision of domestic purposes benefit in the weighting applied to the child population. The final index included all of the above weightings, plus a weighting for the cost of provision of education to the 0-14 year age group, and a weighting for the cost of provision of health services to the two dependent population groups.

Estimates of the cost of child dependency relative to elderly dependency depend on the choice of items included in the weighting for each group, and the assignment of costs to

different age groups is difficult. The Health Department (Alan Morris, Health Statistics) is currently making an analysis of Vote Health for the 1987/88 year, in an attempt to assign health costs by age group. This work is due to be completed in a few months, and at present there are no figures available which could be used to weight the child and elderly populations for the cost of health service provision.

Jones (1984) noted that these indices were sensitive to changes in patterns of spending by Government Departments. He concluded that

> (p)rojection of dependency costs for the Department of Social Welfare is especially difficult because of the problems that arise in projecting the economy and social change, both of which impinge on the numbers assisted by the unemployment benefit and the domestic purposes benefit.

Although these three indices of the dependency ratio have not been calculated here, National Superannuation alone accounted for 55.4% of Vote Social Welfare expenditure for the 1987/88 year, while the size of the child (aged 0-14) population in 1988 (780,350) was greater than the size of the elderly population (501,501) in the same year. This means that a weighting system based on Department of Social Welfare expenditure in the 1987/88 year would inevitably come up with a heavier weight for the elderly population than for the child population. A weighting for total government expenditure is more difficult to estimate. Although health expenditure could be expected to have a heavier weighting on the elderly than on children, education expenditure would increase the weighting on the child population.

Summary and Discussion

The total population is projected to increase in size from 1988 through to the early part of next century, although at a declining rate.

Although an increase in the number of children is projected to occur through to the end of this century, due to baby-boom women reaching their child-bearing years, a longer term trend of a decline in the number of children is apparent in population projections.

Over the last twenty years or so, the population has been ageing, and population projections indicate a continuation of this trend. The number of people aged 60 or more is projected to increase at a particularly rapid rate in the early part of next century.

Dependency ratios measure the size of the dependent population relative to the size of the capacity of the total population to support those dependents. Two ratios were calculated, one using the projected size of the working age population (aged 15-59) as a measure of the capacity of the economy to support dependents, and the other using the projected size of the labour force. Both measures used the projected size of the population aged 0-14 plus those aged 60 or more as a measure of the size of the dependent population. Both measures yielded similar pictures of future trends in the dependency ratio.

In the early part of next century, from 2001 to 2016, the growth in dependency arising from an increase in the elderly population will be compensated for by a decline in dependency arising from a decrease in the child population. However, beyond 2016 dependency associated with the elderly population is projected to increase rapidly, while

dependency associated with the child population is projected to show only small changes.

Both measures of dependency are inadequate as indices of the actual costs of dependency to the Department of Social Welfare. Projection of these costs is difficult because they are highly contingent on economic and social conditions, which are difficult to predict.

THE ELDERLY POPULATION

Projected Elderly Population, 1988-2051

Over the last decade or so the number of people aged 60 or more has increased both in absolute numbers and as a proportion of the total population (Social Monitoring Group of the New Zealand Planning Council 1989).

As noted earlier (see p9ff.), population projections indicate that this trend will continue. A sharp increase in the size of this population is projected to occur between the years 2006 and 2026.

Table 3 (below) shows the projected size of the elderly population by year and age group.

Table 3: Projected Elderly Population by Age Group, 1988-2051

Census Year	Age Group 60-64	65-69	70-74	75+
1988	142,790	119,930	96,970	141,820
1991	144,370	128,730	98,890	154,920
1996	134,970	133,410	112,630	173,750
2001	152,210	125,520	117,380	198,230
2006	174,520	142,040	111,290	219,550
2011	217,280	163,030	126,670	229,810
2016	226,350	203,250	145,770	249,580
2021	255,580	212,250	182,320	280,630
2026	270,430	239,990	191,040	334,930
2031	278,350	254,050	216,470	382,550
2036	268,860	261,870	229,370	436,500
2041	237,860	253,000	236,870	483,330
2046	238,150	224,260	228,770	519,510
2051	274,370	224,620	203,180	534,130

Source: Department of Statistics population projections, 1988 base (medium fertility, medium mortality, 5,000 long-term annual net migration gain).

The population projections shown in Table 3 indicate that the elderly population will increase for all age groups. However, the increase is projected to be largest in the population aged 75 or more. Over the period from 1988 to 2051, the populations aged 60-64, 65-69, and 70-74 are projected to increase by 92%, 87%, and 110% respectively, while the population aged 75 or more is projected to increase by 277%.

The data presented in Table 3 are graphed in Figure 5 (below).

Figure 5: Projected Size of the Elderly Population by Age Group

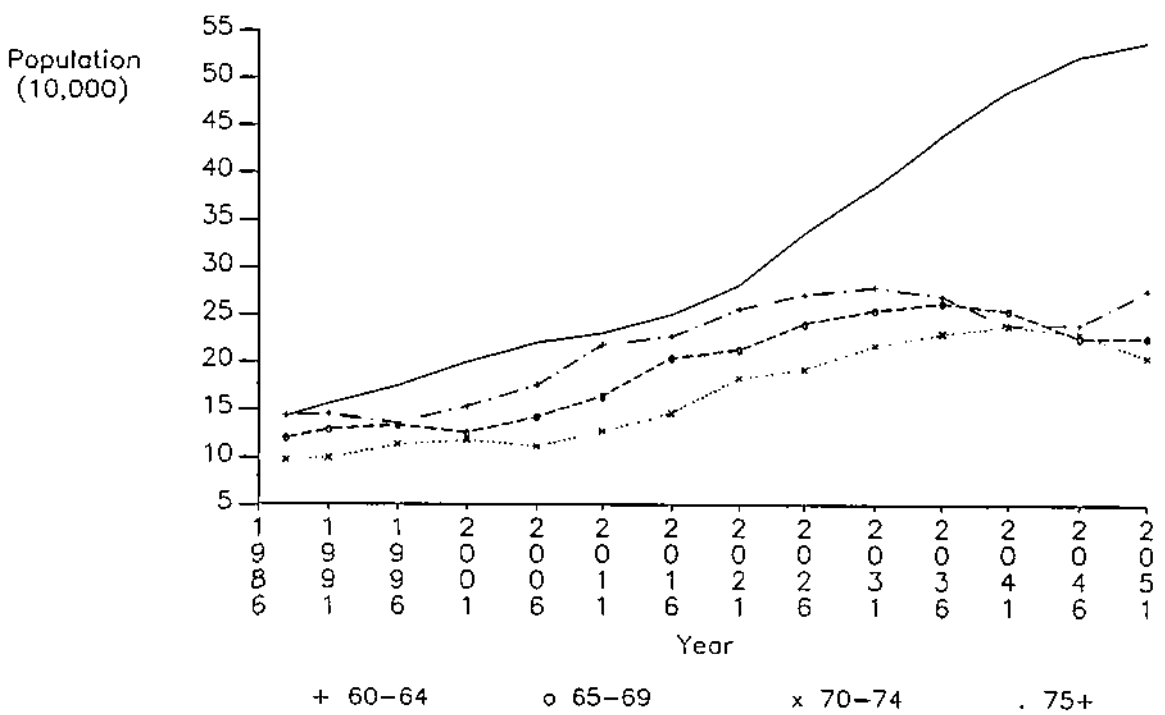


Figure 5 shows that while the size of all age groups among the elderly population is projected to rise, the increase will be greatest in the case of the population aged 75 or more. The population aged 75 or more is projected to increase at about the same rate as the population aged between 60 and 74 until the year 2021, after which the very elderly population is projected to increase at a more rapid rate. According to these projections, in the years between 2021 and 2051, an increasing proportion of the elderly will be aged 75 or more.

Figure 6: Projected Size of the Population Aged 75 or More as a Percentage of the Population Aged 60 or More

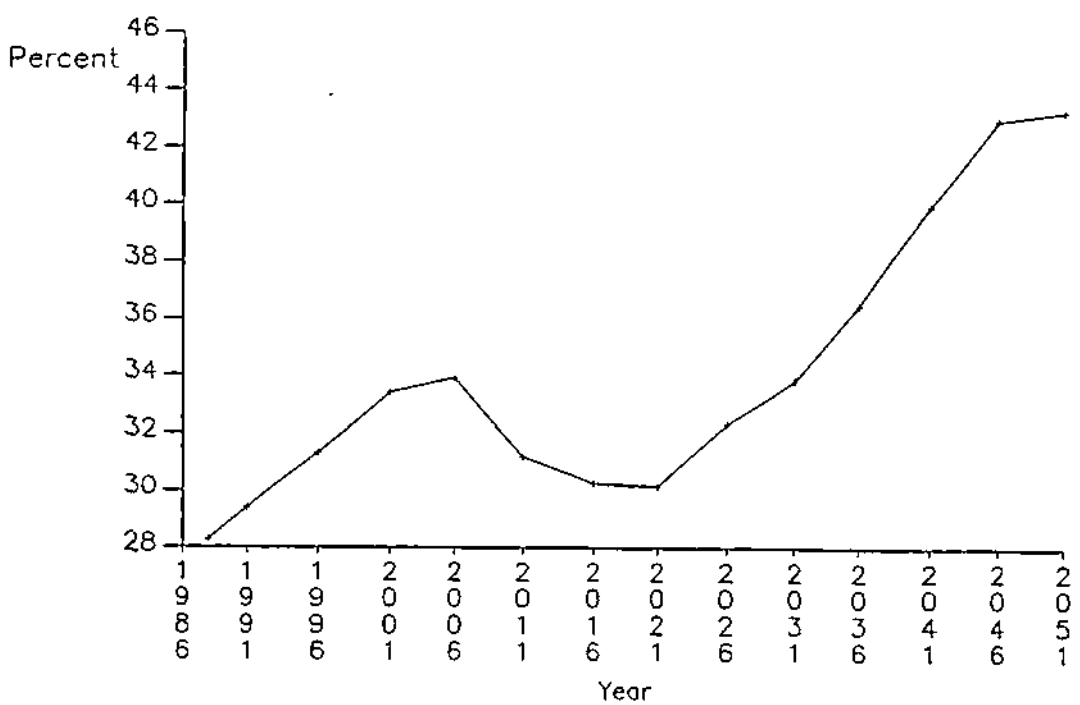


Figure 6 shows clearly the increasing growth of importance of the 75 and over age group amoung the elderly. The curve shows that there will be three phases of change in the internal age composition of the elderly population. First, from 1988 to 2006 an increasing percentage of the elderly population will be aged 75 or more. In 1988, 28% of the elderly population were aged 75 or more, and this figure is projected to increase to 34% by the year 2006. Secondly, the proportion aged 75 or more is projected to decline from 34% in 2006 to 30% by the year 2021. Beyond 2021, however, the proportion aged 75 or more is projected to increase steadily, so that by the year 2051 43% of the elderly population (aged 60 or more) will be aged at least 75.

Trends in Labour Force Participation Among the Elderly

Longer term trends in labour force participation can be observed only from Census data, from which the proportion of the population[4] employed for more than twenty hours per week, or unemployed and seeking work, can be calculated. Table 4 (below) gives these proportions for males and females aged sixty or more.

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[4]Prior to the 1981 Census, the population used for the calculation of labour force participation rates was the total Census night population, while from 1981 onwards, resident population was used. Since a smaller proportion of the non-resident population would be expected to be participating in the labour force compared with the resident population, this change will tend to inflate participation rates for the 1981 and 1986 years relative to rates for previous years.

Table 4: Labour Force Participation (20 Hours or More) Rates by Sex and Age Group, Derived from Census Data

Sex	Age Group	Census Year							
		1951	1956	1961	1966	1971	1976	1981	1986
Female	60-64	8.9	11.0	12.7	14.6	15.5	13.9	12.1	11.8
	65+	3.3	3.6	3.3	3.7	3.5	2.8	1.9	1.9
Male	60-64	63.9	67.7	69.0	71.9	69.2	57.9	46.7	38.9
	65+	26.6	25.1	22.0	23.6	21.3	16.2	11.1	9.0

Sources: 1951-1976 Women in the Workforce: Facts and Figures, Department of Labour, 1980.
1981 Census of Population and Dwellings, Regional Statistics Series Bulletin 11 (National Summary)
1986 Census of Population and Dwellings, Series C Report 4 (Labour Force Part 1)

Over the early period shown in this table, participation in the labour force for twenty or more hours per week increased for those aged 60 to 64, and remained fairly constant for those aged 65 or more. However, over the last twenty years or so the trend has been for decreasing labour force participation amongst the elderly, regardless of age group or sex. A much larger proportion of men than women participated in the labour force for more than twenty hours per week, over the whole period.

Using data from the 1976, 1981, and 1986 Censuses, the Social Monitoring Group (1989) concluded that the proportion of those aged 60 or more who were actively engaged in paid employment fell over the ten year period. An increasing proportion of those who did continue in paid employment after reaching age 60 were self-employed.

Examination of more recent trends is possible using data from the Household Labour Force Survey, carried out quarterly beginning with the December 1985 quarter. Table 5

(below) shows the proportion of the population participating in the labour force for at least one hour per week.

Table 5: Labour Force Participation (1 Hour or More) Rates by Sex and Age Group, Derived from Household Labour Force Survey

Year	Quarter	Male		Female	
		60-64	65+	60-64	65+
1986	March	46.4	14.9	17.0	4.9
1987		44.4	14.8	19.1	4.5
1988		40.9	12.1	17.8	5.0
1986	June	45.6	14.2	21.5	4.2
1987		42.0	14.5	18.4	3.0
1988		37.0	10.6	17.3	4.1
1986	September	47.4	15.1	22.6	4.5
1987		44.6	13.8	18.8	3.6
1988		37.1	11.7	16.0	4.0
1985	December	47.6	15.8	19.0	7.1
1986		41.4	14.6	21.6	4.0
1987		42.1	13.7	17.3	3.7
1988		37.6	10.8	16.3	4.0

Sources: Dec 1985 - June 1987 Household Labour Force Survey revised figures provided by the Department of Statistics.
Sept 1987 - Dec 1988 The New Zealand Labour Force, Table 2.2.

The Household Labour Force Survey includes members of the civilian, non-institutionalised resident New Zealand population only, and defines all individuals working for more than one hour per week, together with those unemployed and seeking work, as participating in the labour force. There are thus differences between data derived from Censuses (as shown in Table 4) and from Household Labour Force Surveys, which mean that participation rates calculated from each source are not comparable.

The table shows the much larger labour force participation of men compared with women in the same age group. Male participation in the labour force for at least one hour per week has declined over the period for both age groups. Female participation for those aged 60-64 shows a less consistent decline, and for those aged 65 or more has fluctuated somewhat without any overall tendency to increase or decline.

Labour Force Attachment

The trends in labour force participation described above do not give any indication of the 'attachment' of older people to the labour force. Jones (1984) states that attachment 'can be loosely defined as the extent to which (an individual's) involvement in the labour force is substantial and permanent'.

It is important to monitor attachment to the labour force, since changes in attachment will result in changes in the contribution made by income generated by labour force participation towards the support of elderly people. In addition, changes in attachment may reflect changes in the status of older people as workers.

Jones (1984) suggests that the number of hours worked per week, and the proportion of the year worked, can be used as measures of attachment.

Measures which would allow an analysis of trends in terms of full year versus part year participation are not readily available. However, Bowie (1983) suggests that intermittent work is a common experience for older workers. Using assumptions derived from American research, he estimated that while 16.8% of the resident population aged 60 or more

were participating in the labour force for at least twenty hours per week at the date of the 1976 Census, only 12.6% had participated at this level for the whole of the preceding year, while 20.9% had participated for at least twenty hours per week at some time in the year preceding the Census.

A similar picture emerges when Household Expenditure and Income Survey data are examined. The Department of Statistics incorporates data from this survey in a tax modelling database called ASSET, which allows the user to manipulate the data in a flexible way so as to produce customised tables. ASSET contains a weight variable, so that the survey data can be weighted up to the total population recorded by the 1986 Census. Although ASSET data are available for the 1982/83 year onwards, the Department of Social Welfare only has computer access to data from the 1985/86 and 1987/88 years, so that longer term trends in labour force attachment can not be examined using this source.

For the 1987/88 year, ASSET data indicate that 7.4% of the total population aged at least 60 were employed for at least thirty hours a week at the time of surveying, while 14.2% reported that they had been employed 'full-time'[5] at some time in the preceding year, and only 3.5% reported being employed 'full-time' for all of the preceding year. These differences were not entirely due to people retiring from the labour force during the year, since only 46.5% of those employed for at least thirty hours a week during the survey

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[5] 'Full-time' was defined by respondents, rather than referring specifically to a certain number of hours worked per week.

reference week reported that they had been employed 'full-time' for the entire 52 weeks of the preceding year.

These figures indicate that measuring the proportion of the population participating in the labour force at a particular date gives an incomplete picture of labour force participation amongst older people. Many people participating at any given date will not have participated for the full year preceding that date, while the proportion who have participated at some time in the year preceding the given date will be considerably larger than the proportion participating at the given date.

Another measure of attachment to the labour force is the number of hours worked per week. The trends in labour force participation described in the previous section were in terms of participation for at least 20 hours per week (Census) and participation for at least 1 hour per week (Household Labour Force Survey). These figures may have masked trends in full-time versus part-time participation.

Because of changes in the Census definitions of the number of hours per week required for participation to be considered full-time rather than part-time, the data required to examine longer term trends in full-time and part-time labour force participation are not readily available. Full-time (at least 30 hours per week) and part-time (from 1 to 29 hours per week) employment rates[6] derived from 1976-1986 Census data are shown in Table 6 (over).

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[6]Employment participation rates have been calculated by taking the number of people gainfully employed and dividing by the resident population in each age and sex group. Prior to 1986, no distinction was made in the Census data between people seeking full-time work and people seeking part-time work, and for this reason persons unemployed and seeking work have been excluded. Although the number of individuals

(Footnote Continued)

Table 6: Full-Time (30+ hours per week) and Part-time (1-29 Hours per Week) Employment Participation Rates by Sex and Age Group, Derived from Census Data

Sex	Age Group	Census Year	Full-Time	Part-time
Female	60-64	1976	11.6	6.4
		1981	9.2	7.3
		1986	8.7	6.7
	65+	1976	2.2	1.8
		1981	1.4	1.8
		1986	1.2	1.5
Male	60-64	1976	56.1	4.2
		1981	43.1	6.4
		1986	34.4	7.0
	65+	1976	14.4	4.8
		1981	8.9	4.9
		1986	6.6	3.8

Sources: 1976 Calculated from unpublished 1976 Census tables provided by the Department of Statistics.
1981 Calculated from Table 11, Regional Statistics Series Bulletin 11 (National Summary), Census of Population and Dwellings, 1981.
1986 Calculated from Table 13, Series C Report 4 (Labour Force Part 1), Census of Population and Dwellings, 1986.

(Footnote Continued)
aged 60 or more recorded as unemployed and seeking work was quite small for all three Censuses, the exclusion of the unemployed will mean that these employment rates will be a little lower than labour force participation rates. 1986 Census figures suggest that a majority of unemployed in this age group were seeking part-time work. For example, according to the 1986 Census, 237 males aged 60-64 were unemployed and seeking full-time work, and 711 males in the same age group were unemployed and seeking part-time work. Exclusion of the unemployed in calculation of the employment rate means that the employment participation rate is always lower than the labour force participation rate. Generally the difference is small: for example, in the above table the employment participation rates were all at least 94% of the corresponding labour force participation rates.

Table 6 indicates that part-time employment of men aged between 60 and 64 was the only rate which showed successive increases between Censuses over the ten year period. Full-time employment rates calculated for all sex/age groups declined between each Census over the ten year period. Part-time rates calculated for women aged 65 or more remained fairly constant over the period, while those for women aged 60-64 fluctuated around 6.8%. Part-time rates for men aged at least 65 remained constant until 1981, and then fell.

Although the trends described above are in employment rates, similar trends could be expected in labour force participation rates, since labour force participation rates for these age groups were not very different from employment rates for the 1986 year, when unemployment would have had maximal impact.

The commissioning of the Household Labour Force Survey in December 1985 provided better data from which more recent trends can be examined. Tables 7 and 8 (over) give full-time (30+ hours per week) and part-time (1-29 hours per week) labour force participation rates[7] by age group for males and females.

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[7]The population base for these rates is the civilian non-institutionalised usually resident New Zealand population.

Table 7: Full-Time (30+ Hours per Week) and Part-time (1-29 Hours per Week) Female Labour Force Participation Rates by Age Group, Derived from Household Labour Force Survey Data

Sex	Age Group	Year	Quarter	Full-Time	Part-time
Female	60-64	1986	March	9.7	7.4
		1987		11.0	8.1
		1988		9.6	8.3
		1986	June	10.7	10.8
		1987		9.1	9.3
		1988		7.6	9.6
		1986	Sept.	12.7	10.0
		1987		10.7	8.2
		1988		7.2	8.9
		1985	Dec.	9.2	9.6
		1986		11.0	10.7
		1987		8.3	8.9
		1988		6.3	9.9
	65+	1986	March	2.7	2.2
		1987		2.2	2.3
		1988		2.5	2.5
		1986	June	1.7	2.5
		1987		1.1	1.9
		1988		1.5	2.7
		1986	Sept.	1.7	2.9
		1987		1.6	2.0
		1988		1.6	2.4
		1985	Dec.	3.2	3.9
		1986		2.1	2.2
		1987		1.8	1.9
		1988		1.5	2.5

Sources: Dec 1985 - June 1987 Calculated from Tables 2.2 and 3.2, Household Labour Force Survey revised figures provided by the Department of Statistics.

Sept 1987 - Dec 1988 Calculated from Tables 2.2 and 3.2, The New Zealand Labour Force.

Table 8: Full-Time (30+ Hours per Week) and Part-time (1-29 Hours per Week) Male Labour Force Participation Rates by Age Group, Derived from Household Labour Force Survey Data

Sex	Age Group	Year	Quarter	Full-Time	Part-time
Male	60-64	1986	March	34.9	11.6
		1987		35.4	9.0
		1988		31.2	9.7
		1986	June	32.5	13.1
		1987		32.6	9.4
		1988		28.3	8.7
		1986	Sept.	35.6	11.9
		1987		30.6	14.1
		1988		29.0	8.1
		1985	Dec.	37.2	10.3
		1986		27.6	13.7
		1987		31.6	10.4
		1988		25.6	12.1
	65+	1986	March	9.0	6.0
		1987		7.3	7.5
		1988		8.1	4.0
		1986	June	8.8	5.3
		1987		6.9	7.6
		1988		6.4	4.3
		1986	Sept.	9.7	5.5
		1987		7.8	6.0
		1988		7.2	4.5
		1985	Dec.	9.8	6.1
		1986		8.2	6.4
		1987		7.5	6.2
		1988		5.6	5.3

Sources: See Table 7

Full-time and part-time labour force participation rates have fluctuated for all sex/age groups. Despite the fluctuation, the 1988 full-time participation rates for those aged 60-64 were lower than rates in the equivalent quarter of 1986 (or 1985 in the case of the December

quarter), indicating a general decline in full-time labour force participation amongst both males and females aged 60-64. Female full-time rates for those aged at least 65 have been fluctuating around a low level, without showing any clear trend over the period. The male 65+ full-time rate showed a moderate decline.

Female part-time participation rates for both age groups have fluctuated, without showing any clear trend. Male part-time rates also showed no clear trend, although rates for those aged at least 65 were lower in 1988 than they had been at any other time.

Incomes of the Elderly

The Social Monitoring Group (1989) applied an equivalence scale (the Modified Jensen Scale) to the 1986 Census incomes of families headed by individuals of different ages. They concluded that the incomes of families headed by an individual aged 60 or more were substantially lower than the incomes of families headed by younger people. Ethnic differences in the income distribution were somewhat reduced with advancing age.

Jones (1984) reported on shortcomings in the use of Census data to investigate incomes of the elderly. In the 1981 Census, 10% of those receiving National Superannuation did not identify themselves as recipients, while 9% of those who did identify themselves as recipients failed to respond to the question on income.

A better source of income data is the Department of Statistics Household Expenditure and Income Survey, which can be accessed using the ASSET model.

Table 9 (over) is derived from ASSET for the 1987/88 year, and gives gross income by sex and age group. The data shown in the table have been weighted up to give total population estimates, using the ASSET weight variable.

Table 9 shows that males had more income, on average, than women in the same age group. Males were two to three times more likely to have private income in excess of National Superannuation payments, and considerably less likely to have either no income or negative income, than women in the same age group. Part of the difference between the two groups stemmed from the higher labour force participation of males, but the table indicates that a considerable disparity remains when income generated by employment is excluded.

The table also indicates that males and females aged 60-64 tended to have more private income than those aged at least 65. A greater proportion of the total population aged 60-64, compared with those aged 65 or more, had income in excess of their National Superannuation payments, while fewer had no income or negative income. When employment income was excluded, these differences were eliminated, suggesting that the greater income in the 60-64 age group was largely due to labour force participation.

Table 9: Annual Gross Private[8] Income by Sex and Age Group, 1987/88 Year

Sex	Age Group	Mean Private Income	Mean Private Income Less Employment Income[9]	% Populatn. with Nil or Less Private Income	% Population with Private Income Greater than Nat.Super.[10]
Male	60-64	$16,961	$4,557	7.3	59.5
	65-69	$ 7,092	$4,326	12.2	33.7
	70-74	$ 5,382	$4,141	13.4	22.1
	75+	$ 6,875	$6,591	11.2	33.0
Female	60-64	$ 4,777	$2,430	19.7	24.9
	65-69	$ 2,562	$2,182	22.9	10.8
	70-74	$ 1,942	$1,821	24.9	8.4
	75+	$ 3,092	$2,982	26.8	13.2

Source: ASSET (Derived from Household Expenditure and Income Survey data, Department of Statistics).

While a large proportion of the population aged 60 or more did have private income, the level of this income was often low, especially when income generated from employment was excluded. Once income from Social Welfare payments and from employment was excluded, 72.2% of males and 85.7% of females

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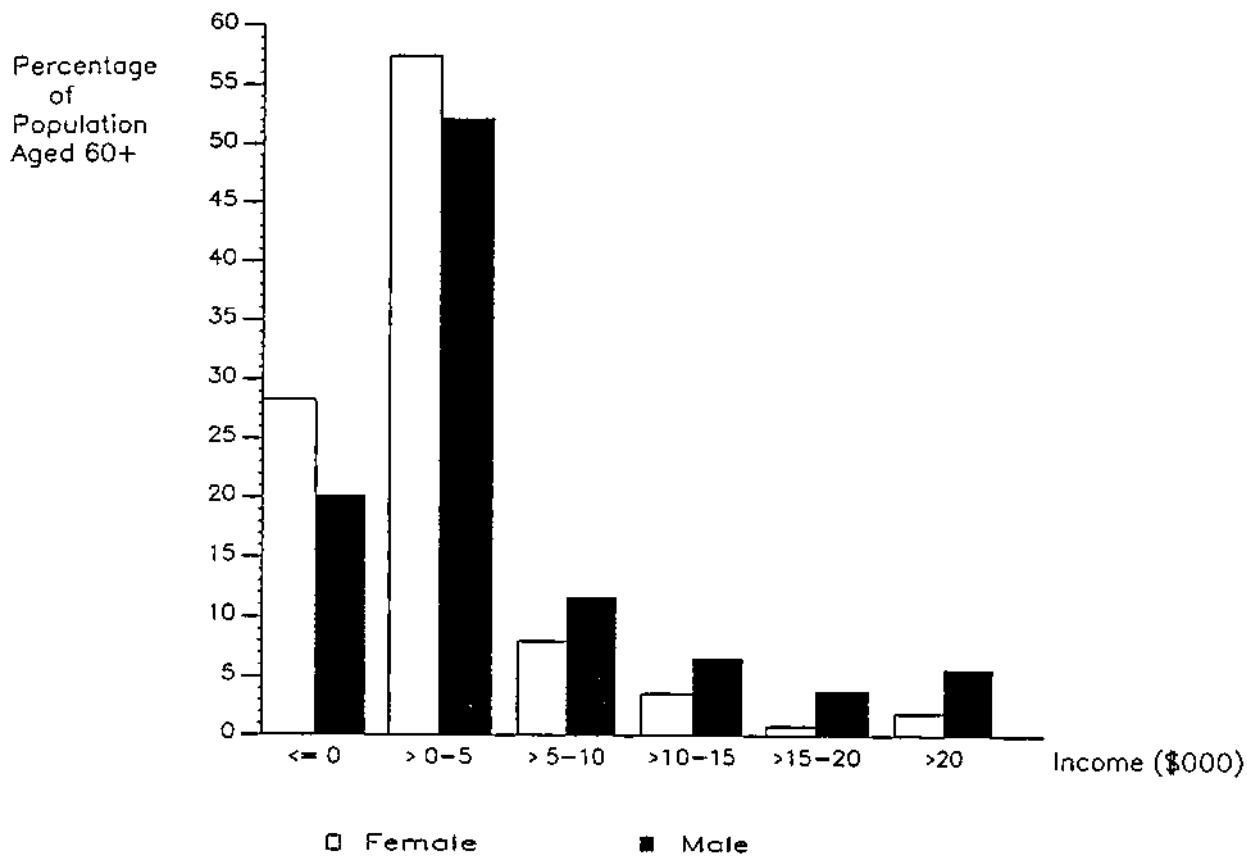
[8] 'Private' income was calculated by taking total income and subtracting National Superannuation and Social Welfare benefit payments.

[9] This figure was calculated by taking National Superannuation payments, Social Welfare benefit payments, wages and salaries, and income from self-employment away from total income.

[10] This proportion was not calculated by taking the proportion with a private income of more than a fixed amount (eg. the average National Superannuation payout), but by taking the proportion with a private income of more than they actually received in National Superannuation payouts.

had no more than $5,000 in annual income[11]. Figure 7 (below) shows the distribution of private income, excluding employment income, by sex.

Figure 7: Distribution of Private Income, Excluding Employment Income, by Sex



The figure is based on a single year, the 1987/88 tax year. How might the incomes of the elderly have changed over time?

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[11]As a benchmark against which these income levels can be assessed, National Superannuation was raised to $7678 gross per annum (married rate) and $9213 (single rate) in October 1987.

The decline in labour force participation rates among the elderly over the past twenty years or so that has already been observed in this paper would obviously have caused a decline in income from employment, but it is possible at the same time that non-work income may have increased, as private superannuation schemes began paying out at an earlier age of retirement, for example. Trends in income by income source for the elderly are difficult to investigate because the Census does not provide a good measure of income for this group, while ASSET only provides this information from the 1983/84 tax year onwards, so that only short-term trends can be assessed.

Living Arrangements

Prior to 1981, tables provided in Census bulletins were based on total population, rather than resident population, and did not report a separate 60-64 or 60+ age group for single person households. For this reason, published data from the 1976 and earlier Censuses are not directly comparable with data from 1981 and beyond, making the examination of longer term trends difficult. Table 10 (over) gives the percentage of the population living in one person households, calculated from 1981 and 1986 Census data.

Table 10 shows that a greater proportion of the elderly live in single person households, compared with the proportion of adults aged 15-59 who do so. The proportion living alone is greatest for those aged 65 or more. Just over a quarter of all individuals aged 65 or more were recorded as living alone at the time of the 1986 Census. About the same proportion of elderly people were living alone in 1986 as in 1981.

Table 10: Percentage of Resident Population Living in Single Person Households by Age Group, 1981-1986

Census Year	Age Group 15-59	60-64	65+
1981	4.4	14.8	27.4
1986	4.2	14.4	28.3

Sources: 1981 Calculated from figures given in Census of Population and Dwellings, Regional Statistics Series Bulletin 11, (National Summary).
1986 Calculated from figures given in Census of Population and Dwellings, Series C, Report 2 (National Summary).

Most of those aged over 60 who were living alone were widowed (71% in 1986), while about one in eight (12.4% in 1986) were never married.

Published Census tables do not give the proportion of the resident population aged 60 or more living in multi-person private dwelling households, or in non-private dwellings. However an unpublished table gives the percentage of the total population in a home for the elderly, or in a hospital on Census day. Table 11 (below) shows these figures.

Table 11: Percentage of Total Elderly Population Living in a Home for the Elderly, or in Hospital, on Census Day, 1986

Age Group	Home for the Elderly	Private or Public Hospital
60-64	0.3	0.9
65+	3.7	3.5

Source: Calculated from unpublished table, Census of Population and Dwellings, 1986

The table shows that a small proportion of the total population aged 60 or more were living in either a home for the elderly or a hospital. A greater percentage of those

aged 65 or more were living in one of these types of institutions, compared with individuals aged between 60 and 64. Although these percentages are of the total elderly population, the figures would not change much if the resident population only was included. For example, if all those living in homes for the elderly or in hospitals were assumed to be residents (with none being visitors to the country), then an estimated 3.8% of the resident population aged at least 65 were living in homes for the elderly, while 3.6% were resident in a hospital on Census day.

The Social Monitoring Group (1989) points out that although there has been a move away from institutional care of the mentally disabled, there was a dramatic increase in the number of elderly people living in long-term institutions between 1981 and 1985, due to an increase in the size of the elderly population over that period. They found that elderly institutional residents were most likely to be non-Maori women, and were likely to be aged at least 75.

While the Social Monitoring Group (1989) used unpublished 1976, 1981, and 1986 Census data to assess trends in the family situation of the elderly, the categories they used are not particularly helpful as measures of living situation. For example, an elderly individual living with a son or daughter (without grandchildren) is counted as a one person family, so that the one person family category is much larger than the number of people living in one person households.

Since only 14% of the resident population aged 60-64 were living alone, and less than 2% were resident in a home for the elderly or in a hospital, it is fairly safe to assume that the majority of individuals of this age lived with other people in a private household at the time of the 1986 Census. This is also likely to be true of the population

aged 65 or more, since 28% lived alone and less than 8% lived in a home for the elderly or a hospital.

The Social Monitoring Group found that the majority of elderly people lived in houses which were owned outright, although the percentages were lower for Pacific Island Polynesian or Maori elderly, who were more likely than Pakeha elderly to be boarding or living in rented accommodation.

Health Status

While it is not at present possible to assign health costs according to age group, the elderly are likely to make considerable demands on health services. The Social Monitoring Group (1989) notes that physical disability increases with age, although only a small proportion of people aged 75 or more are severely handicapped. Its report notes that rates of hospital admission were high for the elderly, particularly for those aged at least 75. Hospital admissions per 10,000 population aged 60 or more increased over the period from 1981 to 1986.

Summary and Discussion

The elderly population has been increasing over the last decade or so, and this trend is expected to continue. The growth in this population is expected to be particularly rapid between the years 2006 and 2026. The elderly population is expected to grow both in absolute numbers, and relative to the size of the working age population.

The increase in the size of the elderly population will mean an increase in demand by the elderly for departmental

services. Later in the next century, from about 2021, the population aged 75 or more is expected to increase at a faster rate than the population aged between 60 and 74, so that there will be increasing demand for services particularly relevent to this group of elderly (such as rest home subsidies, for example).

The increase in the size of the elderly population relative to the size of the labour force, has brought into question the sustainability of the National Superannuation scheme. Beyond 2016, continuation of National Superannuation at current levels would have placed a rapidly increasing burden upon those in the labour force. However, dependency ratios indicate that the period of rapid increase will not begin to occur until about 2011, and that prior to 2016 the increase in the elderly population will be offset by a decrease in the child population. These demographic facts lie behind the Government's recently announced new Guaranteed Retirement Income scheme.

There has been a steady decline in labour force participation by the elderly. Many of the elderly who work do so part-time, or for part of the year only. Labour force income was a major source of income for elderly people in the 87/88 year, particularly for those aged between 60 and 64. If the declining trend in labour force participation continues, the elderly will be increasingly dependent upon superannuation schemes, and upon government income maintenance schemes in particular, as a means of income support.

Women aged 60 or more tended to have less private income than men. Individuals who were aged at least 65 had less private income, on average, than individuals of the same sex who were aged between 60 and 64. From the year 2021, an increasing proportion of the elderly will be aged 65 or

more, so that an increasing proportion of the elderly population could be expected to be dependent on government income maintenance schemes as a primary source of income beyond 2021.

Although most elderly people live in a household with other people, elderly people are more likely than other adults to be living alone, particularly if they are aged 65 or more. Only a small proportion of elderly people live in a rest home or hospital, although the percentage is higher for the population aged at least 65. Elderly people living alone, particularly those who have never married (since they might be less likely to have the support of a family) and those who are very old, would be expected to be heavier users of departmental services (both income maintenance services and social services), than elderly people living with others.

THE CHILD POPULATION

Recent Demographic and Social Trends Affecting the Child (0-14 Years) Population

The Social Monitoring Group of the New Zealand Planning Council recently published From Birth to Death II, an update of their 1985 report on social trends in New Zealand. The report uses a life cycle framework to structure a description of recent demographic and social trends. For the age group 0-14 years, trends identified are as follows:

- Annual numbers of births have increased over recent years, due to an increase in the population of women of childbearing age. The number of births per woman has remained fairly constant at about 2.

- Over the last decade, the average age at which most women gave birth to their first child has increased. This trend was more noticeable for Pakeha women than it was for Maori or Pacific Island Polynesian women.

- While children are still most likely to be living in nuclear families, the proportion doing so declined between 1976 and 1986. Maori children were more likely to be living in one parent families than children of any other ethnic origin, while both Maori and Pacific Island Polynesian children were more likely to be living in extended family households than were Pakeha children.

- Mothers of children aged 0-14 years were more likely to be in paid employment in 1986 than were such mothers in 1976[12]. The Social Monitoring Group applied an equivalence scale (the Modified Jensen Scale) to family income in 1981 and 1986, and concluded that there had been an improvement in income for families with children under the age of 15, relative to all other families over that period[13]. Maori and Pacific Island Polynesian families continued to have incomes lower than their Pakeha counterparts.

- As the age of children increases, families are more likely to live in a house owned by one of the occupants, either with or without a mortgage. From 1976 to 1986 an increasing proportion of Pakeha families with a child aged less than 15 years lived in a house they owned. Maori and Pacific Island Polynesian families with a child were less likely to be living in a house which was owned by one of the occupants, and the proportion owning a house fell from 1976 to 1986.

- Over the last decade the number of children enrolled in pre-school services has increased. An increasing proportion of children beginning primary school are Maori, and an increasing proportion of these children have attended Kohanga Reo.

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[12]Although an increasing proportion of mothers in two parent families were employed for at least 20 hours per week, sole mothers were less likely to be employed in 1986 than they were in 1976 (Rochford et al., 1989).

[13]This relative improvement in total income may not have meant a relative improvement in living standard. For example, high interest rates may have increased housing costs more for younger families than for other families, who could be expected to have greater equity in their homes.

- From 1976 to 1987, infant death rates continued to decline. The health status of children aged between 1 and 14 years of age, as measured by hospital discharges, appears better than for other members of the population. Maori children were more frequently treated in hospitals than non-Maori children, and more likely to die in their first year of life.

Source: Social Monitoring Group (1989)

Projected Child Population, 1988-2051

As noted earlier (see p9), the population aged between 0 and 14 years is projected to decrease in size by 7% from 1988 to 2051. Prior to 2001, the child population is projected to increase, from 780,350 in 1988 to 895,240 in 2001. Decreases in this population are projected between 2001 and 2016, and between 2031 and 2046. Between 2021 and 2031 the population is projected to remain fairly stable.

The child population (aged 0-14 years) is projected to decline over the period 2001-2016 relative to both the size of the working age population (aged 15-59), and to the size of the labour force. Prior to 2001 and beyond 2016, the relative size of this population is projected to be fairly stable.

Table 12 (over) gives the projected size of the child population by year and age group. The population projections shown in Table 12 indicate that there will be fewer young people in 2051 than in 1988, in all age groups.

Table 12: Projected Child Population by Age Group, 1988-2051

Census Year	Population			
	Aged 0-4	Aged 5-9	Aged 10-14	Total
1988	260,220	251,110	269,020	780,350
1991	289,930	252,330	254,730	796,990
1996	308,040	292,580	254,430	855,050
2001	289,920	310,690	294,630	895,240
2006	263,200	292,690	312,750	868,640
2011	248,190	266,020	294,770	808,980
2016	253,520	251,040	268,140	772,700
2021	265,590	256,390	253,200	775,180
2026	266,210	268,440	258,560	793,210
2031	253,890	269,080	270,590	793,560
2036	240,790	256,800	271,240	768,830
2041	236,250	243,740	258,980	738,970
2046	239,120	239,200	245,920	724,240
2051	241,370	242,080	241,370	724,820

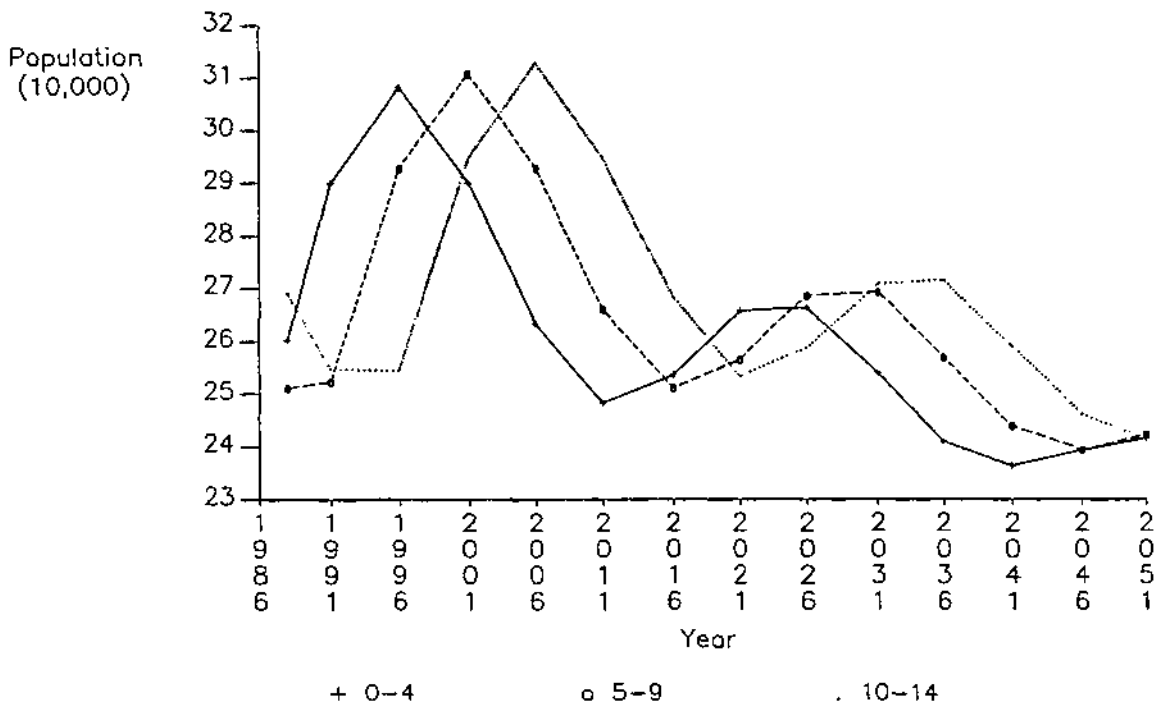
Source: Department of Statistics population projections, 1988 base (medium fertility, medium mortality, 5,000 long-term annual net migration gain).

The population aged 0-4 is projected to increase by 18.4% from 260,220 in 1988 to reach a peak of 308,040 in 1996. From 1996 to 2011, this population is projected to decline, so that by 2011 the population aged 0-4 is expected to be a little smaller than in 1988. After another small increase from 2011 to 2026, this population is again projected to decrease in size, reaching a low of 236,250 in 2041.

The populations aged 5-9 and 10-14 follow this same trend, delayed in time, as the cohort aged 0-4 years grows older. A 'bulge' in the population, peaking for 5-9 year olds in 2001, and for 10-14 year olds in 2006, is apparent, followed by a decline to levels similar to those of 25 years earlier. After a small increase, experienced between 2016 to 2031 for the population aged 5-9 years, these populations decline, so that both reach a low towards the end of the period projected.

The projected size of the populations aged 0-4, 5-9, and 10-14 are shown below in Figure 8.

Figure 8: Projected Size of the Population Aged 0-4, 5-9, and 10-14, 1988-2051



Summary and Discussion

The size of the child population is projected to increase through to the beginning of the next century, and to decline from then until the middle of next century. This will give rise to an increasing demand for services for children in the short term, followed by a longer-term decline in the demand for services for this group. The demand for services

for children aged 0-4 years is projected to peak in 1996, while the demand for services for older children is projected to peak slightly later.

One immediately apparent consequence of this short-term increase in the number of children, projected to occur until the end of this century, will be an increase in the number of family benefits.

The increasing proportion of children living in sole parent families (noted by the Social Monitoring Group) will mean there are further consequences for departmental services. While an increasing proportion of mothers in two parent families were in paid employment, sole mothers were no more likely to be employed in 1986 than in 1981, and less likely to be employed than in 1976. These trends suggest that Domestic Purposes Benefit numbers can be expected to continue to increase in the short term at least. Longer-term trends are more difficult to assess.

THE YOUTH POPULATION

Recent Demographic and Social Trends Affecting the Youth (15-19 Years) Population

The Social Monitoring Group identifies the following trends affecting the population aged between 15 and 19 years of age.

- The proportion of fully independent 15-19 year-olds was small, and declined slightly between 1976 and 1986. In 1986, about 15% of 15-19 year-olds lived away from their parents and had an income at least as high as the single rate of unemployment benefit. In the same year about 55% were fully dependent, in that they lived with their parents and had an income below the single rate of unemployment benefit. The remaining 30% were neither fully dependent nor fully independent. Maori young people were more likely to be living independently than non-Maori young people.

- Between 1976 and 1986 the incomes of young adults decreased relative to those of other adults living independently. This decline was most marked for those of Pakeha origin, although Maori young people had consistently lower incomes than Pakeha or Pacific Island Polynesian young people.

- More 15 year-olds were at school in 1986 than in 1976, while about the same proportion of 16 and 17 year-olds were still at school in 1986, compared with the proportion in 1976. A larger proportion of young people continued their education after leaving school in 1986, compared with 1976.

- In 1986 young people were more likely to leave school with a qualification than they were in 1976. The improvement over this period was stronger for Maori young people than it was for non-Maori, although Maori young people continued to leave with qualifications that were significantly lower than those gained by non-Maori school leavers[14].

- The proportion of young adults in full-time paid employment declined in the decade from 1976 to 1986, while the proportion in part-time employment increased.

- The 1986 Census showed that young women who were employed continued to be concentrated in the caring and personal service professions, while young Maori and Pacific Island Polynesians of both sexes were concentrated in the manufacturing sector. Young Pakeha males were spread over a range of occupations, and were over-represented in the finance and commerce sectors.

Source: Social Monitoring Group, 1989.

Projected Youth Population, 1988-2051

The population aged 15 to 19 years is projected to fluctuate over the period from 1988 to 2051. This population is projected to decrease in size from 1988 to 1996, increase back to the 1988 level by the year 2011, and then decline

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[14]The Education Department estimated that 47% of Maoris leaving school in 1988 left without a formal qualification, while 26% had sixth form certificate or a higher qualification. Only 18% of the non-Maori school leavers left without a qualification, while 57% had at least sixth form certificate (Education Statistics of New Zealand, 1988).

until 2026. After a small increase in size between 2026 and 2036, the population aged between 15 and 19 years is projected to decline once more, to reach a low of 246,770 in 2051.

Table 13: Projected Youth Population by Age Group, 1988-2051

Census Year	Population		
	Aged 15-16	Aged 17-19	Total
1988	124,320	185,890	310,210
1991	109,140	182,260	291,400
1996	102,850	152,550	255,400
2001	104,050	151,090	255,140
2006	124,270	171,030	295,300
2011	124,350	189,030	313,380
2016	115,280	180,180	295,460
2021	104,730	164,170	268,900
2026	101,360	152,660	254,020
2031	105,400	153,970	259,370
2036	109,670	161,740	271,410
2041	107,960	164,080	272,040
2046	102,230	157,590	259,820
2051	97,700	149,070	246,770

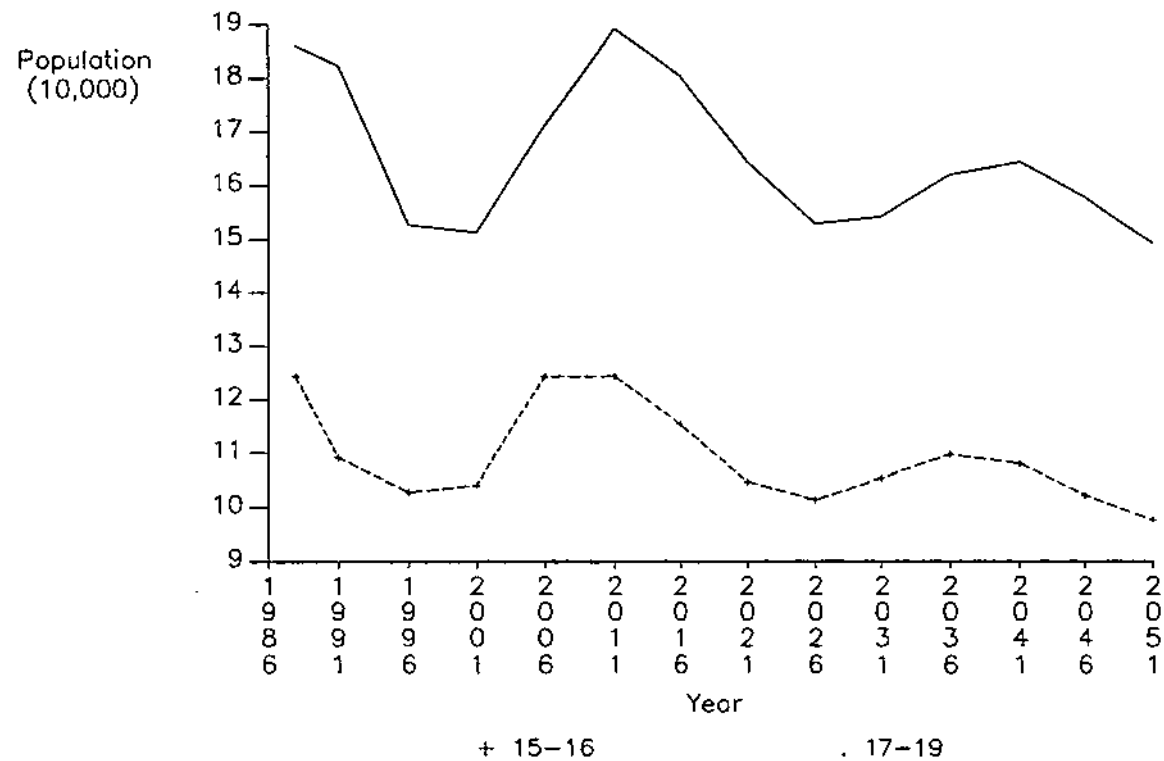
Source: Department of Statistics population projections, 1988 base (medium fertility, medium mortality, 5,000 long-term annual net migration gain).

Table 13 (above) shows that the population aged 15-16 years is projected to decline by 21.4% over the period for which projections have been made. It is projected to decline from 124,320 in 1988 to 102,850 in 1996. However, a rapid increase in this population is projected to occur between 2001 and 2006, so that by 2006 the population size is projected to be similar to that of 1988. From 2011 to 2026 the population aged 15-16 is projected to decline steadily. After a small reversal in this trend between 2026 and 2036, the size of the population is projected to continue declining, so that the population will reach a low of 97,770 by the year 2051.

The population aged 17-19 years is projected to follow a similar trend, delayed a little as the cohort aged 15-16 grows older.

Figure 9 (below) shows the projected size of the youth population, by age group.

Figure 9: Projected Size of the Population Aged 15-16, and 17-19 Years, 1988-2051



Trends in Labour Force Participation

The proportion of the population aged 15-19 employed for more than 20 hours per week, or unemployed and seeking work, is given in Table 14 (over), which is derived from Census data.

Table 14: Labour Force Participation (20 Hours or More) Rates for 15-19 Year-olds by Sex, Derived from Census Data[15]

Sex	Census Year							
	1951	1956	1961	1966	1971	1976	1981	1986
Male	71.3	68.0	65.3	62.7	57.1	56.3	56.6	58.7
Female	64.5	63.7	64.0	61.9	56.9	51.1	49.5	53.2

Sources: 1951-1976 Women in the Workforce: Facts and Figures Department of Labour, 1980.
1981 Census of Population and Dwellings, Regional Statistics Series Bulletin 11 (National Summary)
1986 Census of Population and Dwellings, Series C Report 4 (Labour Force Part 1)

Table 14 shows that more males aged 15-19 were participating in the workforce than females of the same age. Both male and female participation rates for this age group have declined over the period from 1951 to 1976, and have been fairly stable since 1976.

Labour force participation rates include individuals who are unemployed and seeking work, while employment rates exclude this group. Using 1976-1986 Census data, the Social Monitoring Group (1989) found that a declining proportion of 15-19 year-olds were in full-time (30 or more hours per week) paid employment. The stability of labour force participation rates over the period 1976-1986 lends force to the assumption made by the Social Monitoring Group (1989) that the decline in the proportion in full-time paid

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[15] As noted earlier (see p27), prior to 1981, Census tables from which these proportions have been calculated were based on the total population, while from 1981 to 1986 the resident population was used. This change will have tended to inflate participation rates for the 1981 and 1986 years relative to rates for previous years.

employment was partly due to rising unemployment between 1976 and 1986.

More recent trends can be assessed using data from the Household Labour Force Survey. As noted earlier (see p29), participation rates derived from this survey are not comparable with participation rates derived from Census data. Table 15 (over) gives labour force participation rates derived from Household Labour Force Survey data.

While total female labour force participation has remained fairly stable over the period covered by the survey, full-time participation has tended to decline, while part-time participation has increased. Male full-time participation rates also fell, while part-time rates showed no clear trend. The decline in full-time participation rates calculated for those aged between 15 and 19 years may reflect a continuation of the trend towards increasing participation in tertiary education, reported by the Social Monitoring Group for the period 1976-1986.

Two sets of labour force projections produced by the Department of Statistics were described earlier (see p17). These projections are based on the 1988 year, and make assumptions that labour force participation rates will be either high or low. The low series projects that labour force participation (1 or more hours per week) rates will continue to fall for males aged 15-19 and for females aged 15-17, while rates for females aged 18-19 will increase. The high series projects an increase in labour force participation rates for those aged 15-19, regardless of sex. These projections are of total labour force participation, and if current trends continue, any growth in labour force participation is most likely to be in part-time participation rather than in full-time participation.

Table 15: Full-Time (30+ Hours per Week) and Part-Time (1-29 Hours per Week) Labour Force Participation Rates for 15-19 Year-olds by Sex, Derived from Household Labour Force Survey Data

Sex	Year	Quarter	Full-Time	Part-time	Total
Female	1986	March	46.2	16.6	62.9
	1987		43.5	19.8	63.3
	1988		41.5	20.0	61.5
	1986	June	40.2	18.6	58.7
	1987		39.9	23.7	63.6
	1988		36.3	23.1	59.4
	1986	Sept.	37.8	16.7	54.6
	1987		37.7	19.2	56.9
	1988		33.7	23.1	56.8
	1985	Dec.	42.9	23.7	66.7
	1986		38.5	24.2	62.7
	1987		41.9	21.3	63.2
	1988		33.8	22.9	56.7
Male	1986	March	55.0	17.4	72.4
	1987		51.0	17.0	68.1
	1988		45.8	18.3	64.1
	1986	June	50.3	16.2	66.5
	1987		46.6	19.6	66.2
	1988		43.6	17.2	60.7
	1986	Sept.	47.2	15.5	62.7
	1987		43.6	19.6	63.2
	1988		41.2	17.3	58.4
	1985	Dec.	49.7	17.6	67.3
	1986		48.0	20.4	68.4
	1987		46.9	20.6	67.6
	1988		43.1	18.7	61.7

Sources: Dec 1985 - June 1987 Calculated from Tables 2.2 and 3.2, Household Labour Force Survey revised figures provided by the Department of Statistics.

Sept 1987 - Dec 1988 Calculated from Tables 2.2 and 3.2, The New Zealand Labour Force.

Summary and Discussion

Through to the beginning of the next century, the size of the population aged between 15 and 19 is projected to decline. However, in the longer term, the population is expected to fluctuate in size. Departmental services for individuals in this age range will need to be sensitive to the changing size of this population.

Many departmental services for individuals in this age range (such as the various income maintenance provisions for young people) are sensitive to economic and social conditions, so that the level of demand cannot be well assessed from population size alone. The declining trends in full-time labour force participation, and in employment, together with an increase in the proportion unemployed or going on to tertiary education, may lead to an increasing demand for income maintenance services for this group.

Most young people were not living completely independently, with a large proportion either continuing to live with their parents and/or having less income than the unemployment benefit at the single rate.

WOMEN IN THE LABOUR FORCE

In recent years there has been a dramatic increase in the number of women participating in the paid labour force.

This section will examine the labour force activity of women and discuss the implications of this change for the Department of Social Welfare.

Full-Time Labour Force Participation of Women

Women are becoming increasingly involved in the full-time labour force (as measured by Census data) at all stages of the life-cycle, with the exception of those aged 15-19 years and older than 60 years.

Table 16 (over) shows Census data on full-time (20 hours or more) participation rates for women by age group for selected years and Figure 10 (below) graphs this information.

Figure 10: Female Full-time (20 or more Hours) Labour Force Participation Rates by Age, 1951-1986

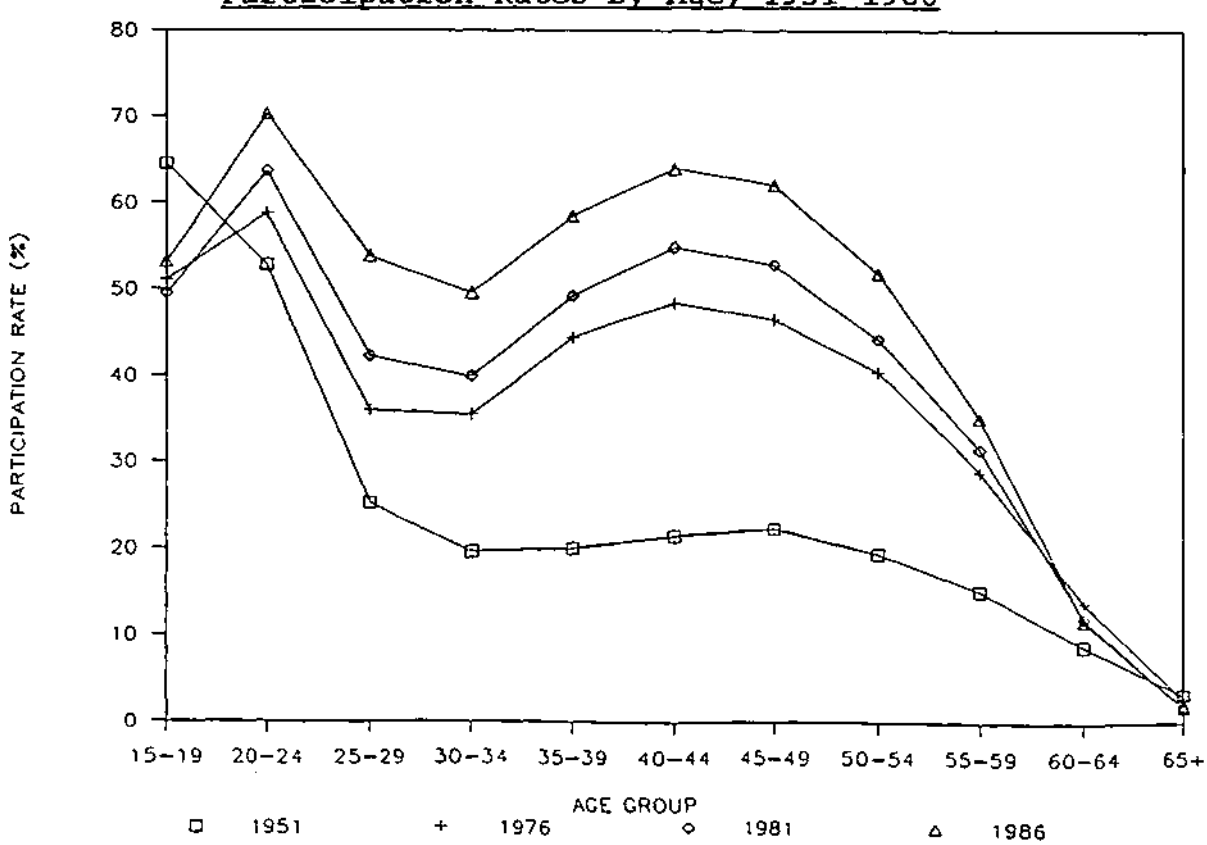


Table 16: Female Full-time (20 hours or more) Labour Force Participation Rates by Age, 1951-1986

AGE GROUP	1951	1956	1961	1966	1971	1976	1981	1986
15-19	64.5	63.7	64.0	61.9	56.9	51.1	49.5	53.2
20-24	52.8	50.6	49.8	52.9	54.9	58.8	63.7	70.3
25-29	25.3	24.1	22.0	25.1	29.6	36.0	42.3	53.9
30-34	19.6	19.8	19.9	22.3	29.4	35.5	39.9	49.6
35-39	20.0	21.5	23.9	27.0	35.8	44.4	49.2	58.5
40-44	21.5	24.2	27.1	32.0	39.1	48.5	54.9	64.0
45-49	22.4	25.7	29.6	33.1	40.0	46.6	53.0	62.2
50-54	19.5	23.9	27.7	31.4	35.2	40.6	44.3	52.0
55-59	15.2	18.9	22.1	25.4	27.5	29.0	31.6	35.2
60-64	8.9	11.0	12.7	14.6	15.5	13.9	12.1	11.8
65+	3.3	3.6	3.3	3.7	3.5	2.8	1.9	1.9
15+	25.0	26.0	27.7	30.9	33.8	36.6	39.1	45.2

Sources: 1951-1986 Women in the Workforce - Facts and Figures Department of Labour, 1980.
1981 Census of Population and Dwellings, Regional Statistics Series Bulletin 11 (National Summary)
1986 Census of Population and Dwellings, Series C Report 4 (Labour Force Part 1)

In 1951 there was a decline over the life-cycle in female labour force participation rates. There was a rapid decrease in participation rates of women from the age of 15 years to 30 years and a fairly constant participation rate for women aged 30-49 with rates declining steadily from age 50 onwards. This suggests that women with children left the paid labour force because of family responsibilities but there was little subsequent return to the workforce as children grew older. Sceats (1988) suggests that inter-generational dependency relationships may have contributed to this. The woman's parents may have reached the age-dependent years before her own last child left home.

In 1986 the participation rates over the life-cycle show distinct differences from those seen in 1951. Figure 10 shows that an 'M' shaped curve emerged, suggesting that

women are returning to the labour force as their children grow older. Women entering the child-bearing years today are less likely to leave the paid workforce for extended lengths than were women in previous generations.

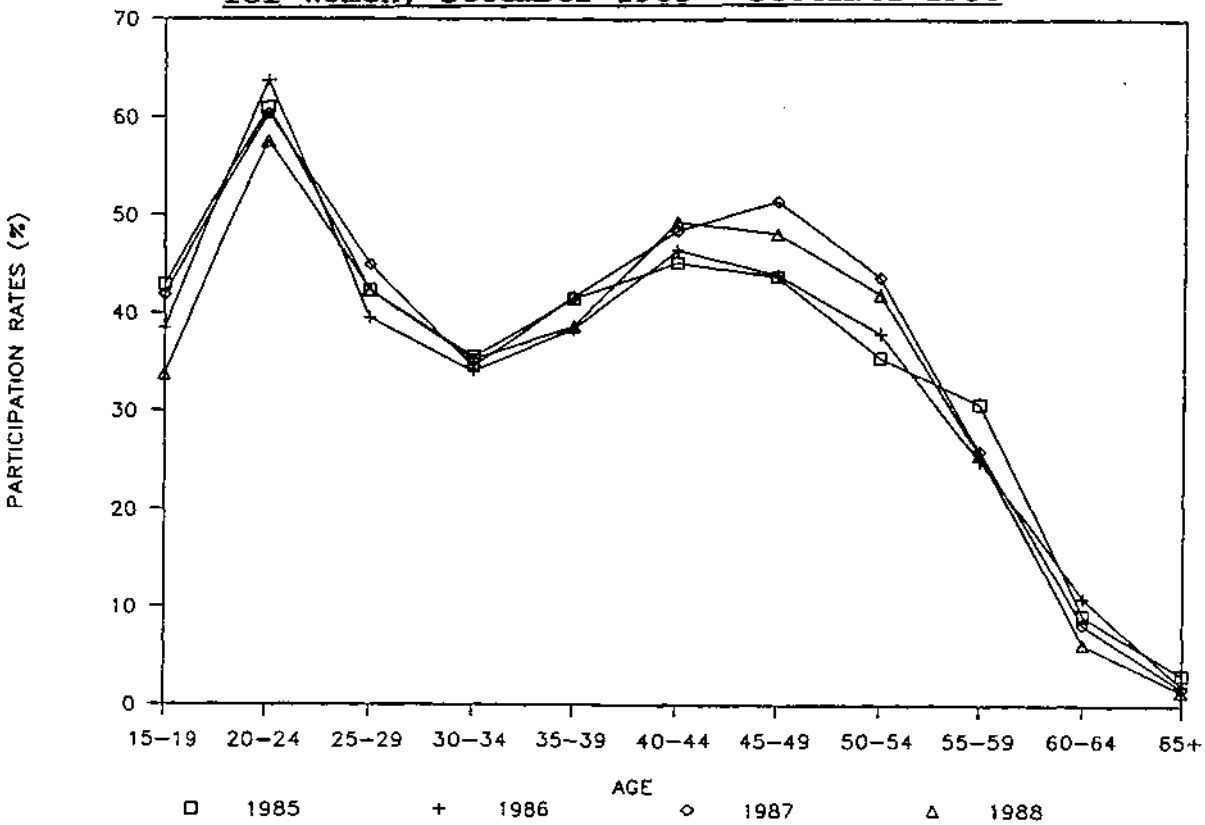
More recent trends may be examined using the Household Labour Force Survey which is carried out quarterly. Table 17 shows the proportion of the civilian non-institutionalised usually resident population participating in the labour force for more than 30 hours per week. Figure 11 (over) graphs this information for the December quarters 1985-1988.

Table 17: Female Full-time (30 hours or more) Participation Rates by Age, December 1985 - December 1988

QTR	AGE 15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	TOTAL
DEC												
1985	42.9	61.0	42.4	35.6	41.5	45.2	43.8	35.5	30.8	9.2	3.2	35.4
1986	38.5	63.8	39.6	34.1	38.4	46.5	44.0	38.0	25.1	11.0	2.1	34.0
1987	41.9	60.4	45.0	34.6	41.7	48.5	51.6	43.7	26.0	8.3	1.8	35.9
1988	33.8	57.6	42.3	35.3	38.7	49.4	48.2	42.0	25.7	6.3	1.5	33.7
MARCH												
1986	46.2	63.1	41.7	34.9	39.5	50.0	44.4	35.8	24.3	9.7	2.7	35.6
1987	43.5	64.3	43.2	35.3	38.8	46.9	46.8	37.8	24.9	11.0	2.2	35.5
1988	41.5	59.0	44.7	33.2	39.9	48.6	45.9	42.8	28.1	9.6	2.5	35.2
JUNE												
1986	40.2	59.4	41.0	35.4	42.1	49.7	45.3	36.6	23.9	10.7	1.7	34.6
1987	39.6	60.6	40.6	35.2	38.6	48.0	44.7	36.7	25.0	9.1	1.1	33.9
1988	36.3	53.9	43.3	34.2	38.8	47.3	49.1	44.6	27.0	7.6	1.5	33.8
SEPT												
1986	37.8	62.4	43.4	34.8	42.5	49.4	48.9	37.9	28.0	12.7	1.7	35.5
1987	37.7	61.6	44.6	36.4	41.2	52.2	47.9	43.2	25.7	10.7	1.6	35.7
1988	33.7	55.2	44.9	35.1	42.9	50.9	49.5	43.4	27.6	7.2	1.6	34.5

Sources: Dec 1985 - June 1987 Household Labour Force Survey revised figures provided by the Department of Statistics.
Sept 1987 - Dec 1988 The New Zealand Labour Force Table 2.2

Figure 11: Full-time (30 hours or more) Participation Rates for Women, December 1985 - December 1988



The full-time participation rates of women in the period December 1985 - December 1988 remained fairly constant. A longer time frame wil be necessary to see if the increase in paid participation of women is slowing.

Jones (1984) states that the increased labour force participation by women in recent years, and the expectation of maintained or increasing levels of paid participation, will have significant effects for the Department of Social Welfare.

First, he expects the greater attachment to the labour force that is evident to affect the size and age structure of the population. There will be adjustments in household formation and fertility patterns. The decrease in the participation of 15-19 year-olds over time is generally attributed to an increase in the numbers of women undertaking further

education. At an individual level, this investment in further education will affect decisions about whether to pursue a career and there may be a resultant increase in the numbers of women who have no children or only one child.

Secondly, Jones surmises that the increase in the earnings of women may lead to pressure to adjust the terms of the income test more regularly or even to change the unit of assessment for benefits from the household to the individual.

Participation Rates of Women with Children

The presence of children will affect a woman's decision to take part in the paid labour-force. The New Zealand Planning Council's From Birth to Death II used Census data from 1976, 1981, and 1986 to show the employment status of mothers by age of youngest dependent child. The employment status of women was found to change with the age of youngest child. The number of women involved in part-time work declined as the youngest child aged, whilst conversely the importance of full-time work increased. In 1976, 88% of women with a child less than one year old were not working, whereas 30% of women with children aged 15-19 were working at least 20 hours per week, 22% were working from 1-19 hours per week and 48% were not in paid employment. By 1986, the number of women with dependent children of all ages who were in paid employment had increased. Of those with a child less than one year old, 79% were not working, whereas of those with children aged 15-19 years, 40% were working 20 or more hours per week, 23% were working part-time and 37% were not working.

Changes in labour force participation rates are dominated by changes in rates amongst married women. In 1986, married

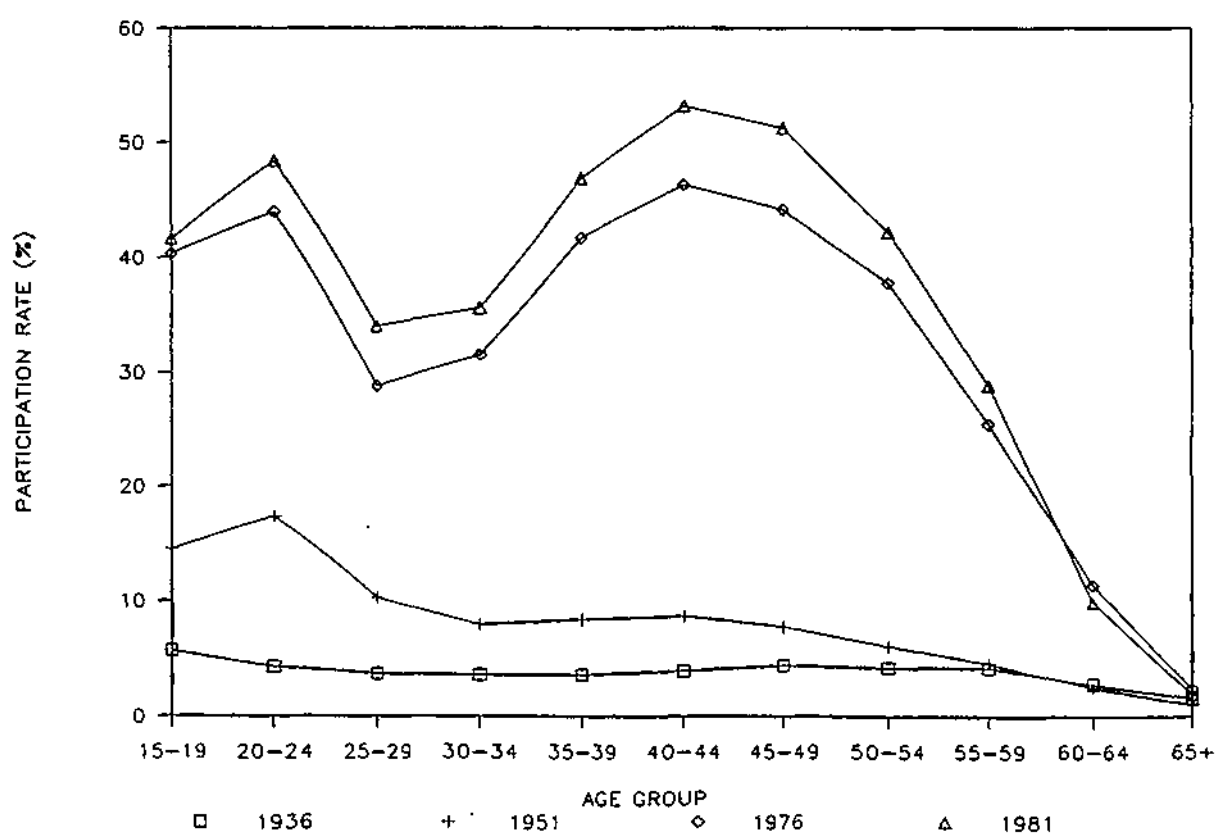
women accounted for 54% of the female population 15 years and above. Table 18 shows the participation rates of married women employed for twenty hours or more per week for selected years from 1936-1981. This information is graphed in Figure 12.

Table 18: Full-time (20 hours or more) Labour Force Participation Rates of Married Women, By Age

AGE GROUP	1936	1945	1951	1956	1961	1966	1971	1976	1981
16-19	5.7	18.2	14.5	18.5	20.0	23.5	30.3	40.3	41.6
20-24	4.3	17.4	17.4	19.4	20.7	26.7	34.3	44.0	48.4
25-29	3.7	10.3	10.3	11.6	11.9	15.8	20.7	28.8	34.0
30-34	3.6	8.0	8.0	11.3	13.3	16.4	24.3	31.5	35.6
35-39	3.6	8.4	8.4	13.9	18.0	21.8	31.8	41.7	46.9
40-44	3.9	8.7	8.7	16.6	21.3	26.9	35.3	46.3	53.2
45-49	4.4	7.8	7.8	17.5	23.1	27.7	35.9	44.2	51.3
50-54	4.2	6.1	6.1	15.5	20.7	25.2	30.7	37.8	42.2
55-59	4.2	4.6	4.6	10.8	14.9	18.5	22.0	25.5	28.9
60-64	2.8	2.5	2.5	5.2	7.5	9.5	11.2	11.4	9.9
65+	1.6	1.0	1.0	1.6	1.7	2.1	2.4	2.4	1.9
16+	3.7	7.7	9.7	12.9	16	19.9	26	32.6	35.8

Sources: 1951-1986 Women in the Workforce - Facts and Figures, Department of Labour, 1980.
1981 Census of Population and Dwellings, Regional Statistics Series Bulletin 11 (National Summary)

Figure 12: Full-time (20 Hours or More) Labour Force Participation Rates of Married Women, By Age



It can be seen from Figure 12 that the pattern of labour force participation over the life-cycle for married women in recent years closely resembles that seen in Figure 10 for the whole female population. The trend amongst married women dominates the overall full-time participation rates.

The pronounced 'M' shaped curve seen in Figure 12 for 1981, in contrast to the constant rates in 1936, indicates that, whilst many married women do withdraw from the paid labour-force to bear children, an increasing number return subsequently. In the 1986 Census, full-time work was defined as 30 hours or more worked per week. Hence data from 1986 are not directly comparable with those from earlier years when full-time work was defined as 20 hours or more of paid work per week. Table 19 shows the participation rates of married women by age group in 1986, while Figure 13 graphs these data.

Table 19: Labour Force Participation Rates Of Married Women By Age, 1986

AGE GROUP	FULL-TIME	PART-TIME
15-19	43.9	39.3
20-24	54.3	8.4
25-29	38.4	9.4
30-34	35.1	10.3
35-39	45.0	9.3
40-44	53.3	8.8
45-49	52.5	7.6
50-54	43.4	7.8
55-59	27.8	8.6
60-64	8.6	7.0
65+	1.7	1.8

Source: Census of Population and Dwellings, Series C Report 4 (Labour Force Part 1)

Figure 13: Labour Force Participation Rates of Married Women By Age, 1986

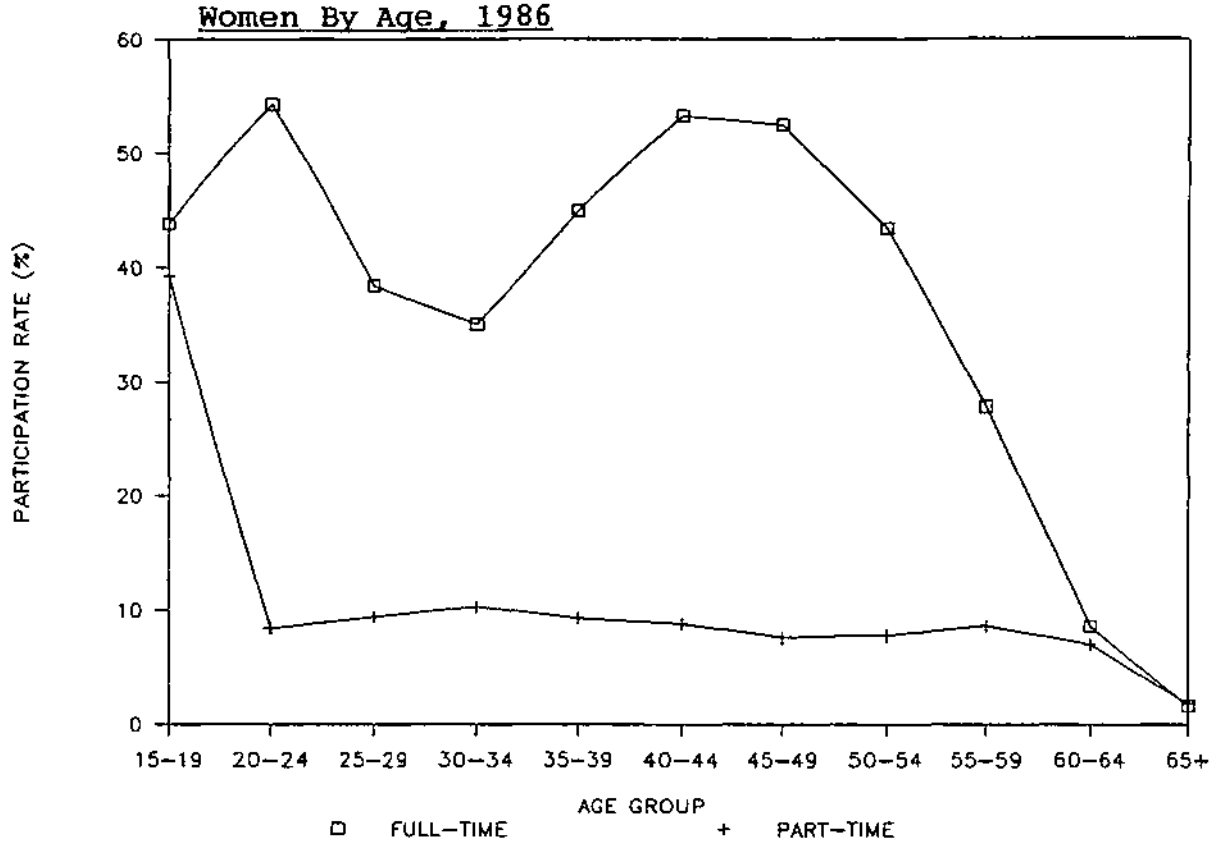


Figure 13 shows clearly (in the steep climb to the second peak), the substantial rate of return to full-time work for women in the 35-44 age range. Full-time participation amongst married women in 1986 peaked in the 20-24 and 40-49 age ranges.

The trend in participation rates of women with children has been found to differ according to household size and composition. Rochford et al. (1989) found that one of the greatest differences between one and two parent families was the rate of employment of the parents. It was found that in 1986, a majority of two parent families had two sources of income, with 92% of fathers and 56% of mothers engaged in the paid work-force. However, only a minority of sole parents had any labour force income, with 37% involved in the workforce full-time or part-time. This pattern of lower participation amongst one parent families is recent, as in

1976 sole mothers had a higher rate of paid labour force participation than married mothers.

Part-time Labour Force Participation of Women

The growth in part-time participation amongst women has been dramatic and it far exceeds the growth seen in the full-time labour force. Department of Labour data[16] for the period 1961-1984 indicate that the number of women employed full-time (at least 30 hours per week) increased 82%, while those employed part-time rose 407%. In 1961, only 12% of the female work force were working part-time, whereas by 1984 the proportion had risen to 28%.

Census data from 1981 and 1986 given in Table 20 (below), and Figure 14 which graphs this information, provide a picture of the increasing importance of part-time work for women.

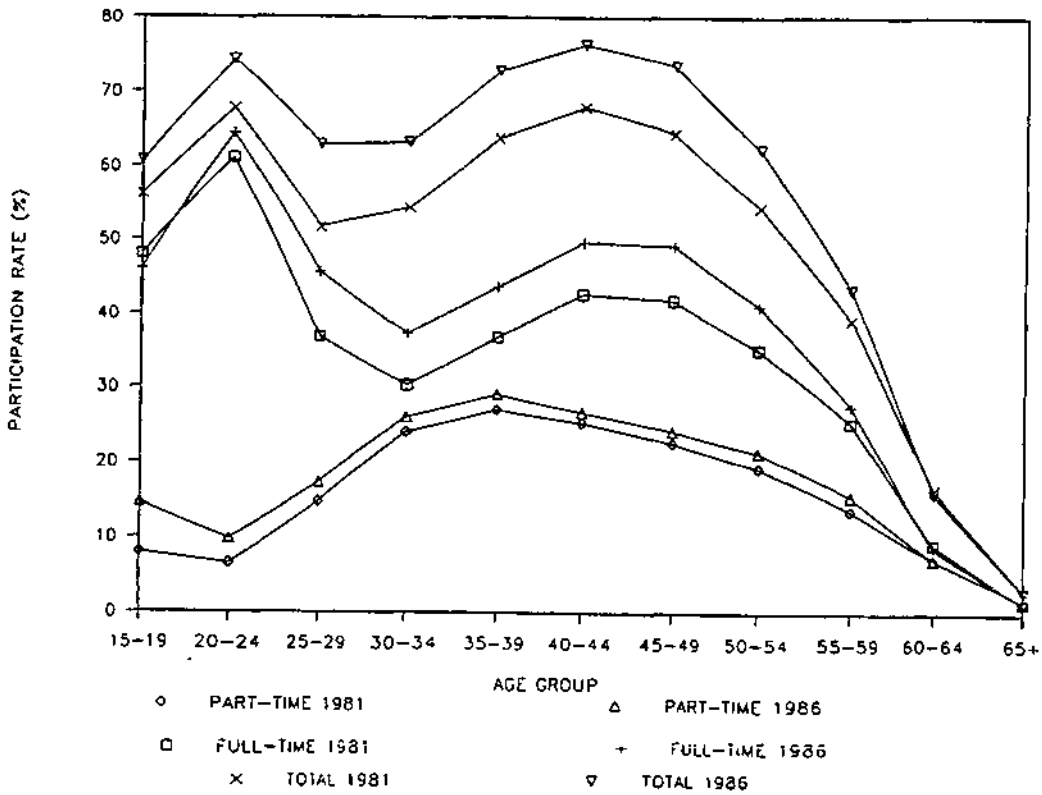
Table 20: Full-time (30+ Hours per Week) and Part-time (1-29 Hours per Week) Participation Rates of Women by Age, 1981-1986

AGE GROUP	FULL-TIME PARTICIPATION RATES 1981	1986	PART-TIME PARTICIPATION RATES 1981	1986	FULL-TIMERS PER PART-TIMERS 1981	1986
15-19	48.0	46.1	8.0	14.6	6.0	3.2
20-24	61.1	64.4	6.6	9.9	9.3	6.5
25-29	36.9	45.6	14.8	17.3	2.5	2.6
30-34	30.3	37.3	24.0	26.0	1.3	1.4
35-39	36.8	43.6	27.0	29.1	1.4	1.5
40-44	42.6	49.6	25.3	26.7	1.7	1.9
45-49	41.8	49.2	22.6	24.2	1.8	2.0
50-54	35.1	41.0	19.3	21.3	1.8	1.9
55-59	25.3	27.5	13.8	15.7	1.8	1.8
60-64	9.3	8.8	7.3	7.3	1.3	1.2
65+	1.4	1.3	1.8	1.6	0.8	0.8
15+	33.2	36.9	14.0	16.4	2.4	2.3

Source: Census of Population and Dwellings, Series C Report 4 (Labour Force Part 1)

[16] Census and Department of Labour data are not comparable because of differences in definitions of full-time and part-time participation.

Figure 14: Full-Time (30+ Hours per Week) and Part-time (1-29 Hours per Week) Participation Rates of Women, 1981-1986



The relative importance of part-time work over the life-cycle is completely different from that for full-time work. While the curve fo full-time participation has the familiar 'M' shape, a distinct pattern can be seen in part-time participation rates amongst women by age. It can be seen from Figure 14 that the rate of part-time participation is lower for those aged 20-24 years than for those age 15-19 years, but then increases threefold for those older than 25 years, reaching a peak in the 35-39 age group and declining steadily thereafter. Many women in the age group 15-19 years will be involved with their education and will pursue part-time work, but will withdraw and enter the full-time labour force as these circumstances change in the 20-24 age group. Part-time work is most common amongst women in those years in which many will be involved in the care of young children. This suggests that, because of role

conflict, women with children may seek out jobs compatible with other commitments.

More recent information obtained from the Labour Force Survey is given in Table 21 (below) and this information can be seen in graphical form in Figure 15 (over).

Table 21: Female Part-time (1-29 Hours) Participation Rates by Age Group, Derived from Household Labour Force Survey

QTR	AGE 15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	TOTAL
DEC												
1985	23.7	14.1	22.3	28.2	33.3	33.7	27.9	22.4	20.2	9.8	3.9	20.9
1986	24.2	12.8	20.2	29.2	34.2	32.7	30.9	22.8	19.6	10.7	2.2	20.7
1987	21.3	13.7	18.3	27.5	30.2	31.9	27.3	22.7	22.0	8.9	1.9	19.5
1988	22.9	12.5	18.9	27.2	30.7	29.4	27.1	25.7	23.3	9.9	2.5	19.8
MARCH												
1986	16.6	11.0	20.0	28.8	30.4	29.8	28.1	22.6	19.9	7.4	2.2	18.6
1987	19.8	11.6	17.4	27.6	31.7	31.2	28.0	25.6	19.1	8.1	2.3	19.1
1988	20.0	13.6	17.8	27.1	30.6	29.8	27.9	24.4	19.5	8.3	2.5	19.0
JUNE												
1986	18.6	11.8	20.7	28.3	31.1	30.2	29.7	23.1	34.0	10.8	2.5	19.5
1987	23.7	12.7	20.0	30.1	33.5	30.1	31.9	26.0	19.0	9.3	1.9	20.6
1988	23.1	12.8	18.9	26.9	32.4	31.2	26.4	24.7	21.4	9.6	2.7	19.9
SEPT												
1986	16.7	9.8	18.2	28.3	31.7	31.3	25.9	23.2	16.2	10.0	2.9	18.4
1987	19.2	11.7	17.9	27.0	31.2	26.6	25.7	22.9	19.0	8.2	2.0	18.3
1988	23.1	12.4	16.7	26.9	29.7	28.0	24.8	23.4	21.6	8.9	2.4	18.9

Sources: Dec 1985 - June 1987 Household Labour Force Survey revised figures provided by the Department of Statistics.
Sept 1987 - Dec 1988 The New Zealand Labour Force Table 2.2

Figure 15: Part-time (1-29 Hours per Week) Participation Rates for Women by Age Group, December Quarters, 1985-1988

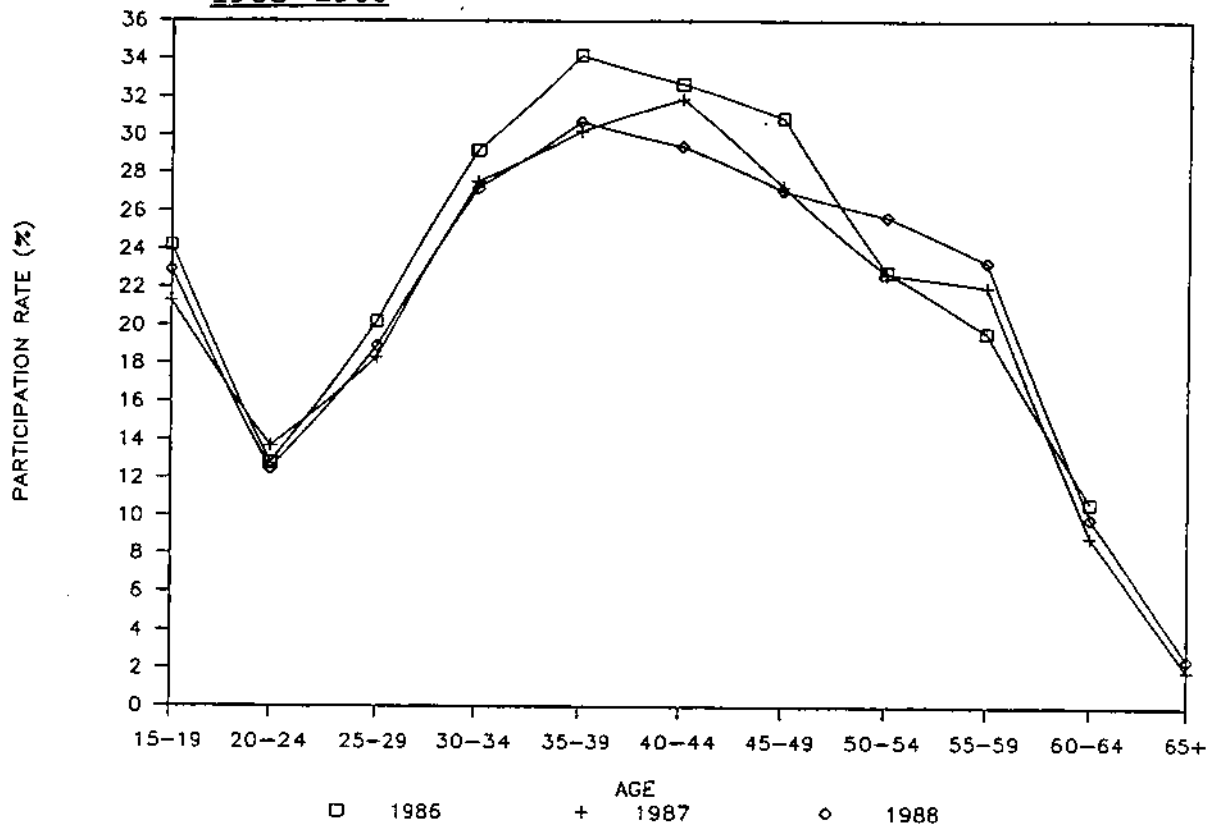
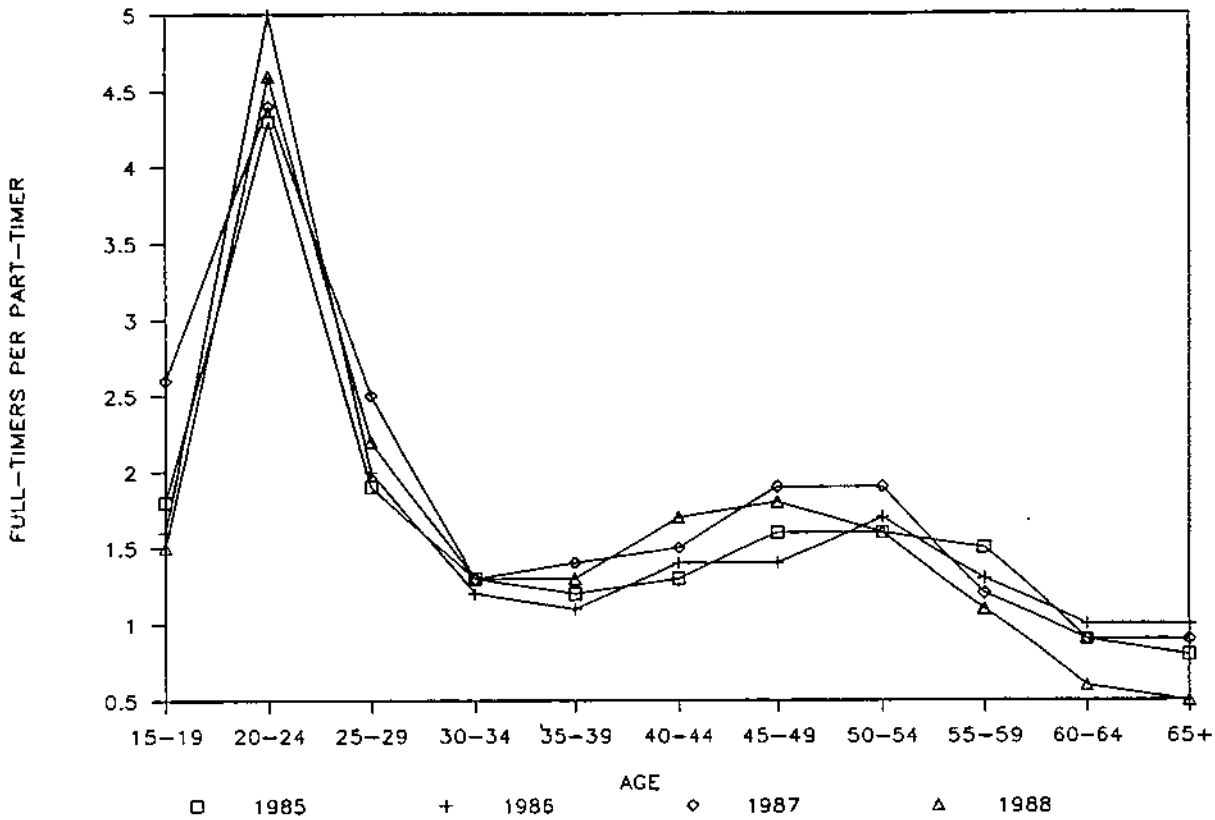


Table 21 shows that part-time participation rates for women changed only slightly over the period December 1985 - December 1988. No clear increasing or decreasing trend over time is apparent from Figure 15 which graphs this information. In the years in which many women care for young children, there was a decline in the numbers of women in the part-time labour force. Conversely, there appears to have been a trend for increased numbers of older women, aged 50-59, to have part-time jobs. Figure 16 (over) shows the ratio of full-timers to part-timers for the December quarters 1986-1988.

Figure 16: Full-timers Per Part-timer, December 1985 - December 1988



In Figure 16 the changing importance of full-time and part-time work over the life-cycle can be seen. As noted previously, there is a distinct pattern by which work status varies with age, with full-time work being of greatest importance in the 20-24 age range, declining thereafter and increasing again from 35 to 54 years (although to a much lower peak than in the early twenties) before again declining.

Whilst there is a distinct overall pattern, it should be noted (Horsfield, 1988) that there is no single 'typical' model of work behaviour amongst women after the birth of a first child.

One and Two Earner Households

Given that there has been a large increase in the number of women in the paid workforce over the period examined, an increasing number of households will have more than one income.

Penhale and Wigbout (1982) used the 1979/80 Household Survey to assess the differences in income between one and two earner households. They found that households with two people working had income 1.5 times as large as that of a one income family. The proportion of households with two incomes varied with the age of the youngest child and the age of the female partner. As the age of youngest child increased, so did the number of hours worked and the income earned. It was found that if the male partner had low earnings, the contribution of the woman was likely to be higher.

Hall (1988) found that there was a statistically significant increase in the proportion of families with two labour force incomes between 1978/79 and 1984/85 using Household Expenditure and Income Survey data. In 1984/85, 50% of families had two labour force incomes and 32% had one labour force income, compared with 46% and 39% respectively in 1978/79.

The proportion of households with two incomes is likely to continue to increase over time, and the difference in income between one and two income families would be expected to increase, given the increase in recent years in the number of hours worked by women in the paid workforce.

The Future - Projected Labour Force Participation by Women

The Department of Statistics has recently produced labour force projections based on the 1988 year. Labour force participation rates are projected to decline over the period 1988-2001 for males, while the projected pattern for women is an increase in labour force participation over the same period.

Participation by Marital Status

An examination of labour force participation rates of women by marital status may give some indication of the potential for participation rates to increase over time.

Table 22 (over) shows the full-time (30 hours or more) participation rates of women by marital status in 1986. Figure 17 graphs this information[17].

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[17]Data from the 1986 Census are not directly comparable with those from previous Censuses because of the changed definitions of full-time and part-time work.

Table 22 : Female Full-time (30+ Hours per Week) Participation Rates by Age and Marital Status, 1986

AGE GROUP	MARITAL STATUS				
	NEVER MARRIED	MARRIED	LEGALLY SEPARATED	WIDOWED	DIVORCED
15-19	47	44	26	40	58
20-24	72	54	38	31	49
25-29	68	38	37	30	46
30-34	66	35	37	28	47
35-39	68	45	46	34	56
40-44	68	53	55	37	62
45-49	70	53	60	40	65
50-54	65	43	51	32	60
55-59	55	28	40	23	47
60-64	17	9	14	8	17
65+	3	2	3	1	3

Source: Census of Population and Dwellings, Series C Report 4 (Labour Force Part 1)

Figure 17: Full-time (30+ Hours per Week) Labour Force Participation Rates by Age Group and Marital Status, 1986

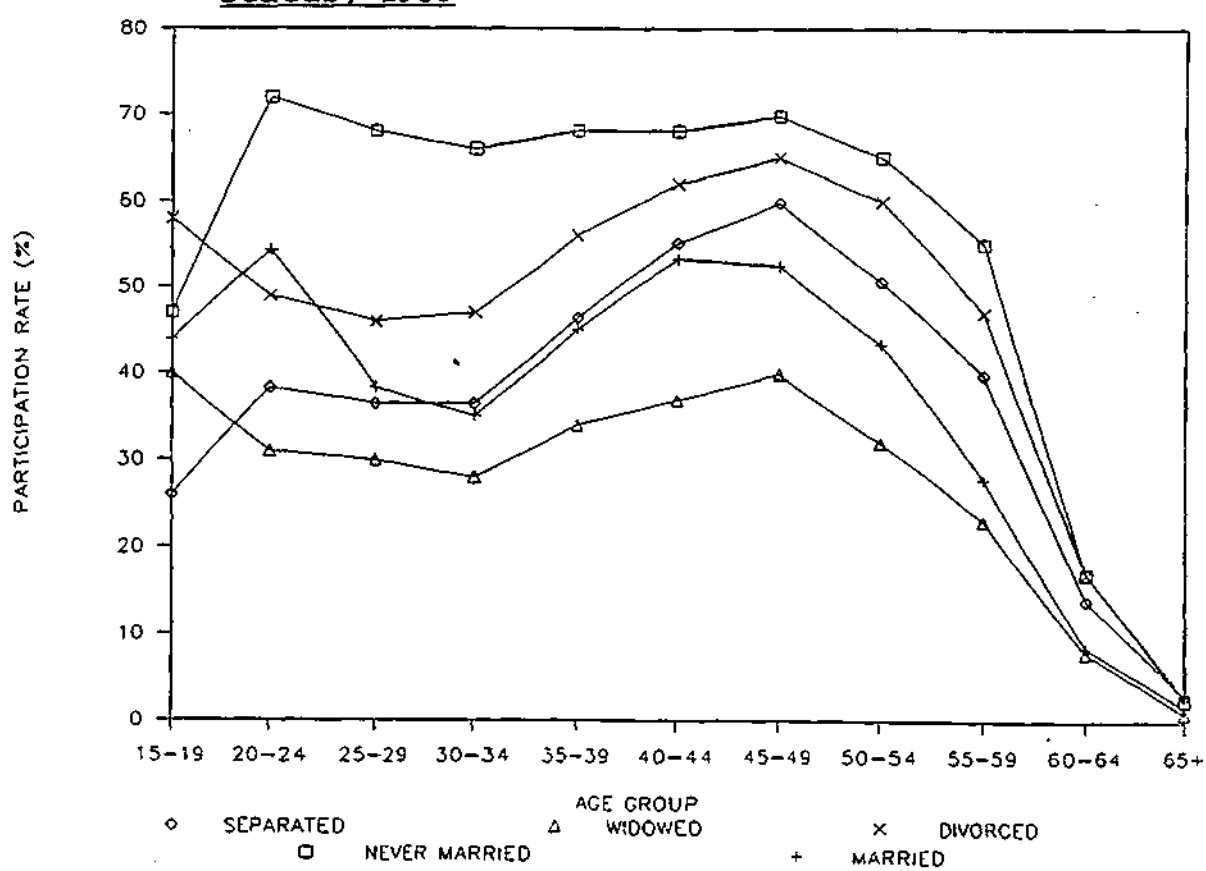

Figure 17 illustrates that married women aged 30 and above were less likely to participate in the full-time paid labour force than all other groups except widows.

Jones (1984) examined the trends in full-time participation rates by marital status from 1951 to 1976 using Census data defining full-time work as 20 hours or more per week. The trend towards increasing participation was most marked amongst married women. The differences in participation rates by marital status narrowed over the period 1951-1976. Jones (1984) found that the composition of the full-time labour force in the post-war period had changed considerably, ".....the proportion of women who are married having more than doubled to in excess of 50%".

It is expected that the participation rates of married women will continue to increase and the difference in participation rates by marital status will continue to decline. Given the large proportion of the female population who are married, any increase in the proportion of married women participating in the paid workforce will show up in the overall rate for women.

Female Attachment to the Labour Force

As Jones (1984) notes, changes in the labour force attachment of women may have implications for the Department of Social Welfare, given that these may bring about changes in the status of women, their earnings potential, the number, timing and spacing of births, household formation and child care needs. Jones defined attachment as the extent to which a woman's involvement in the labour force is substantial and permanent.

A study by Masnick and Bane (1980) in the United States found that changes in the attachment of women to the labour force have been large although not as dramatic as changes in labour force participation. They found increases in attachment across all age and marital status groups.

Attachment may be measured by the number of hours worked in any one week, and by the number of weeks worked in each year. In the earlier section on the elderly, it was noted that it is difficult to measure trends in attachment to the labour force through analysis of trends in full-year versus part-year participation, as no appropriate data are available to assess longer-term trends over time, due to changes in the definitions of full and part-time participation.

Examination of 1987/1988 Household Expenditure and Income data using the ASSET model revealed some interesting findings with respect to the number of weeks worked per year.

Women aged 15-24 years showed a higher attachment to the labour force than those aged 25-59 years. At the time of the survey, 48% of women aged 15-24 years were employed for 30 hours or more per week, whilst 75% reported having been employed 'full-time'[18] at some time in the previous year and 23% reported having been employed 'full-time' all year. Forty percent of women aged 25-59 years reported that they were working 30+ hours per week at the time of the survey, while 65% said they had worked 'full-time' at some stage of the year and 20% reported that they had been working 'full-time' all year.

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[18]As defined by the respondents.

These figures indicate that the number of women working at any one time will be considerably lower than the number who have worked at some time in the preceding year. This movement of women in and out of paid employment will be due in large part to the fact that women have traditionally taken care of their children and will enter and leave the work-force depending on family circumstances.

Occupational Distribution by Sex

It is important to monitor any change in the occupational distribution of women. Occupation may be related to attachment to the labour force and hence to household formation and fertility behaviour. Further if differences in earnings are related to occupational structure, any change in this may affect the earnings potential of women. Table 23 (over) shows the distribution of the full-time labour force across major occupation groups from 1951 to 1986.

It is apparent from Table 23 that there has been a change in the relative importance of the major occupations over time. There has been a significant increase in the proportion of the total full-time labour force in the 'professional, technical and related workers' and 'administrative, executive and managerial' categories and a decline in the 'agricultural and forest workers, fishermen and hunters' category and 'production and related workers, transport equipment operators and labourers' category for both males and females, although for males the decline in the latter category has not been marked.

The increase in the 'professional, technical and related workers' has been greater for males, who show an increase of 154% from 1951-1986 compared to a 31% increase for females in the same time.

Table 23: Distribution of Full-time Labour (20+ hours/week) By Occupation (Major Groups) 1951-1986[19]

OCCUPATIONAL CATEGORIES	MALES					FEMALES				
	1951	1961	1971	1981	1986	1951	1961	1971	1981	1986
Professional, Technical and Related Workers	4.9	7.1	10.4	11.8	12.5	14.5	16.2	17.2	17.7	19.0
Administrative, Executive and Managerial	2.8	7.0	3.5	4.8	7.1	0.3	1.9	0.3	0.8	2.2
Clerical and Related Workers	9.5	7.6	8.9	7.7	7.7	27.1	28.4	33.1	32.4	33.4
Sales Persons, Shop Assistants and Related Workers	7.6	6.6	9.8	8.6	8.9	12.5	13.0	11.6	11.4	11.0
Agricultural and Forest Workers, Fisherman and Hunters	22.7	18.0	14.3	13.2	13.2	5.2	4.1	5.2	6.6	7.3
Production and Related Workers, Transport Equipment Operators and Labourers	47.0	48.7	46.6	44.6	43.6	20.9	20.6	17.4	14.8	13.4
Service and Related Workers Including Armed Forces	5.0	4.8	5.4	5.7	6.0	18.7	15.4	13.9	12.4	12.9
Not Specified	0.4	0.3	1.0	3.6	1.1	0.7	0.3	1.4	4.0	0.7
TOTAL	100	100	100	100	100	100	100	100	100	100

Sources: 1951-1971: Statistical Profile of N.Z. Women, 1975.
1981: New Zealand Census of Population and Dwellings, Regional Statistics Series, Bulletin 11.
1986: New Zealand Census of Population and Dwellings 1986, Labour Force Part 1.

The category with the greatest number of women in 1951, 'clerical and related workers', increased in relative

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[19]The Census definition of 'full-time' participation changed in 1986 from 30+ to 20+ hours per week. In deriving the 20+ hours figure for the 1986 data, the assumption was made that all those who worked between 1 and 29 hours per week, but did not specify how many hours they worked, did in fact work more than 20 hours/week. Given that 0.4% of the population fell into this category, this is unlikely to have significantly affected the results.
1981 and 1986 data is not strictly comparable with that from previous Censuses, due to a change in occupational classification.

importance for women over time whilst it diminished in importance for males.

Table 24 (over) shows occupational distribution by sex for the full-time paid labour force from 1951-1986. It appears that as the numbers of men and women in the total full-time workforce become more even, so does the distribution in specific occupation groups.

This trend is not evident, however, in the category 'clerical and related workers'. In 1951 the split by sex was 54% male and 46% female, but in 1986 it was 28% male and 72% female.

Males continued to dominate the 'professional,technical and related workers','administrative,executive and managerial', 'agricultural and forest workers, fisherman and hunters' 'production and related workers, transport equipment operators and labourers' groups through the period 1951-1986, although this dominance did diminish.

Undoubtedly some changes will be masked by the broad categories used in Table 24, but the overall trends in the occupation distribution pattern in the full-time labour force can be seen. Whilst there has been some movement in the occupational distribution by sex since 1951, many occupations continue to have highly disproportionate numbers of males and females. Of particular concern is the trend for an increasing number of those in the 'clerical and related workers' occupational group to be women.

Table 24: Occupational Distribution by Sex, For Full-time Labour Force (20+ hours/week) 1951, 1981, 1986[20]

OCCUPATION MAJOR GROUP	% of Total Full-time Labour Force					
	1951		1981		1986	
	Male	Female	Male	Female	Males	Female
Professional, Technical and Related Workers	52.8	47.2	56.1	43.9	52.0	48.0
Administrative, Executive and Managerial	97.3	2.7	91.9	8.1	83.9	16.1
Clerical and Related Workers	53.9	46.1	31.3	68.7	27.6	72.4
Sales Persons, Shop Assistants and Related Workers	66.9	33.1	59.3	40.7	57.2	42.8
Agricultural and Forest Workers, Fisherman and Hunters	93.5	6.5	79.4	20.6	75.0	25.0
Production and Related Workers, Transport Equipment Operators and Labourers	88.2	11.8	85.3	14.7	84.3	15.8
Service and Related Workers Including Armed Forces	47.4	52.6	47.2	52.8	43.7	56.3
Not Specified	64.9	35.1	63.8	36.2	69.6	30.4
Total	76.8	23.2	64.8	34.2	59.4	40.6

Sources: 1951: New Zealand Population Census 1951, vol. 4
1981: New Zealand Census of Population and Dwellings 1981, Regional Statistics Series, Bulletin 11, National Summary.
1986: New Zealand Census of Population and Dwellings 1986, Labour Force Part 1.

[20]As for Table 23, those working 1-29 hours per week who did not specify the actual numbers of hours worked were assumed to be working more than 20 hours per week.

Earnings of Women

It was noted earlier that there has been a dramatic increase in the number of women working in the paid labour force from 1951 to 1986. The earnings of women, however, remain well below those of males. Female ordinary time earnings are only 80% of male ordinary time earnings (Horsfield, 1988). The gap is, in effect, even wider when one considers that women are more likely to work a shorter week and receive fewer over time payments than men.

Hyman (1981) puts forward factors which may explain pay differentials. These include discrimination, differences in hours worked, education and training, occupational distribution, and length and continuity of labour force participation. Hyman confirmed overseas data that most of the earnings differential occurs within, rather than between, industries. Hyman and Clark (1987) state that industrial segregation is less important that occupational segregation. They propose that if the earnings differential is to be closed, steps must be taken to increase earnings in female- dominated occupations relative to male-dominated occupations.

Jones (1984) states that an increase in the earnings of women will have implications for the Department of Social Welfare. He notes that it will lead to pressure for more frequent adjustments of the terms of the income test, and pressure to reassess the unit of delivery of social security benefits.

The benefit system needs to be flexible to meet the demands that changes in the population, family life-cycle and labour force participation will bring.

Summary and Discussion

Labour force participation amongst women aged between 20 and 59 has increased over the last decade, with the growth in part-time participation being particularly marked. Although recent Household Labour Force Survey data suggest that growth in participation rates may be slowing, projections of the size of the labour force prepared by the Department of Statistics are based on the assumption that rates will continue to increase through to the end of this century.

Although labour force participation has increased, change in occupational distribution has not been as marked, and women remain lower paid than men.

Jones (1984) states that the increasing number of women in the paid labour force is likely to impact on the benefit system. Eligibility for a benefit can be considered as a two-stage test. The first stage requires satisfaction of some criteria which demonstrate the need for income replacement payments, for example sickness or unemployment. To receive a benefit the second stage must also be passed, which is the income test. With regard to the first stage, increasing participation rates by women mean that a greater number of women will potentially be eligible for unemployment or sickness benefits. But the change in participation rates also means that more households will be trapped by the second stage of the benefit test. Households with more than one income may be ineligible for any benefit on account of the income test. Jones concludes that increased earnings by married women may result in pressure to change the unit of assessment for benefits. Alternatively, there may be pressure to adjust the income test so that provision is made for two income households, or to raise the ceiling income level for receiving benefits.

Women traditionally have looked after children, and paid labour force participation by women depends upon family circumstances. Participation is associated with age of youngest child, age of the woman, family composition, and marital status. Women were more likely to be in the workforce when their children were older. Full-time paid participation was most likely for women aged between 20-24, or 34-54. Part-time paid participation was more common amongst those aged 25-34 years, which are the years in which many women have responsibilities for children. Part-time paid participation was also common for women aged less than 20, or more than 54. Women in two parent families were more likely to participate in the paid labour force than women in sole parent families. Regardless of age, women who had never married were most likely to be in the full-time workforce, while widowed women were least likely to be participating full-time.

The trend towards greater participation by women has implications for childcare. The nature of the work, the hours worked, and the age and number of the children will affect the demand for and choice of childcare services. Childcare may be provided by friends or relatives, a private or commercial organisation or children may be required to look after themselves. Women with children may be influenced in their choice to work by the affordability and quality of childcare services, as well as by their preferences for type of childcare. Horsfield (1988) quotes family studies that found women mostly choose to care for children themselves. Women adjust their work status to cause as little disruption as possible to their family repsonsibilities. Where the child was cared for by others, this was most likely to be a friend or relative. Purchased childcare services were not an economic option for most women. Increasing participation by women in the workforce will no doubt lead to an increasing

demand for childcare services and increasing pressure for financial assistance from childcare agencies.

An increasing proportion of women with children are living in one-parent households. Future demand for the domestic purposes benefit and widows benefit is difficult to predict. Absolute numbers of women living alone with children may not be a good indicator of future demand, given that many factors have been shown to influence the demand for these benefits. Rainwater (1979) found that reliance of female single parents on benefits was a function of their education level and income prior to becoming a sole head of household. Labour force participation rates must also be taken into account in assessing the likely future numbers of these benefits. Sole parents as a group have not recently shown the same pattern of increasing labour force participation as that of women in two parent families. Future trends in labour force participation by single (in particular female) parents thus will be of vital interest to the Department of Social Welfare.

SUMMARY OF TRENDS

Population

- The total population has been growing over the last few decades, although the rate of increase is slowing. 'Medium' projections of population, supplied by the Department of Statistics, indicate that the population will continue to increase in size through the early part of next century, and will begin to decline after about 2040.

- The median age of the population has been increasing since the early 1970's, and is projected to continue to increase.

- Relative to the size of the population aged 15-59, and relative to the projected size of the labour force, the elderly population (aged 60 or more) is projected to increase, and the child population (aged 0-14 years) is projected to decrease through to about 2016. The overall level of dependency indicated by the size of the child plus elderly populations is not expected to change much prior to 2016, but beyond that date the projected rapid increase in the elderly population will bring about a corresponding increase in the level of dependency.

- The total fertility rate declined sharply in the 1960's and 70's. The rate declined more for Maori women than it did for non-Maori women. More recently the annual number of births has increased, due to 'baby-boom' women reaching childbearing age. The number of births per woman has remained fairly static at around two. The average age of women at the birth of first child has been increasing, particularly for Pakeha women.

- The mortality rate continues to decline, although in recent years decreases in mortality have occurred for ages 45 or more, rather than in the infant years.

- Migration has been variable over the last twenty years, and no clear trend is apparent. In recent years, departures of 18-26 year-olds have consistently exceeded arrivals. Movement between Australia and New Zealand has accounted for much of the permanent long term migration.

Elderly Population (Aged at Least 60)

- Over the last decade or so, the number of people aged 60 or more has increased, both in absolute terms and as a percentage of the total population.

- Population projections indicate that this trend will continue, with particularly rapid growth expected early next century. In the second quarter of next century particularly rapid growth is projected in the population aged 75 or more, so that this group will make up an increasing proportion of the elderly population.

- Men aged 60 or more were far more likely to be participating in the labour force full-time than women in the same age group. Part-time participation was more even, although men aged at least 65 were a little more likely to be participating part-time than were women in the same age group.

- Over the last twenty years, there has been a declining trend in labour force participation by the elderly. The decline has been most marked for males, and is evident in full-time rather than part-time participation.

- Many of those who were employed full-time at some time in the previous year had not been employed full-time for the full year, and many of those who were currently employed had not been employed full-time for the full year preceding, suggesting considerable movement in and out of employment.

- While the majority of elderly had income other than Social Welfare payments, it was usually not much, particularly when employment-related income was excluded.

- Excluding income derived from National Superannuation or other Social Welfare benefits, elderly males had more income, on average, than did females. People aged at least 65 tended to have less income than those aged between 60 and 64, largely due to differences in the level of income derived from employment.

- In 1986, most elderly people lived in a private household with other individuals. The number living alone increased with age, and one quarter of those aged at least 65 lived in a single person household. Only about 1% of those aged 60-64, and about 7% of those aged 65 or more, lived in a hospital or home for the elderly.

Child Population (aged 0-14 Years)

- The population aged less than 15 years is projected to increase through to the end of this century, and to decline thereafter until the middle of next century.

- Between 1976 and 1986, a declining proportion of children lived in nuclear family households. Maori children were more likely to live in one parent families compared with children of other ethnic origins, and both Maori and Pacific Island

Polynesian children were more likely to be living in extended family households than Pakeha children.

Youth Population (Aged 15-19 Years)

- The population aged 15-19 years is projected to fluctuate over the next 60 years without showing any clear overall trend.

- The number of fully independent 15-19 year olds was small, and declined a little over the period from 1976 to 1986. In 1986, over half (55%) lived with their parents and had an income below the single rate of unemployment benefit.

- An increasing proportion of young people are staying on in school beyond the minimum leaving age. In 1986, a larger proportion went on to further education or training after leaving school, compared with 1976.

- There was a corresponding decline in full-time labour force participation, as more young people were attending educational or training institutions. Employment also fell over the period from 1976 to 1986, partly due to rising unemployment, and partly due to increasing participation in education.

Women in the Workforce

- The participation of women in the paid workforce has increased dramatically since 1951. The increase has been particularly marked in the part-time labour force.

- Projections of labour force participation rates from the Department of Statistics indicate that the trend of

increasing rates of participation is expected to continue through to the end of this century.

- The rates of paid labour force participation of women change over the life-cycle. A distinct 'M' shape is evident for full-time paid participation, with peaks at 20-24 years and at 40-44 years, and a low at 30-34 years. Part-time participation follows the opposite pattern, increasing as women withdraw from the full-time paid labour force and decreasing as they re-enter, until after the second peak in full-time participation when both full-time and part-time participation decrease with age.

- Participation in the paid workforce and attachment to the labour force vary according to marital status and the presence of children. The pattern of paid participation over the life-cycle is most constant for women who have never married, and shows the most marked 'M' pattern for married women. The participation rates of women who have children are influenced by the age of the youngest child.

- Whilst there has been some change in the occupational distribution by sex over time, there remain clear differences and these may influence the potential earnings of women.

- The earnings of women remain well below those of men.

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