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# Labour Force Participation among Older New Zealanders, 1991-2013

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#### Abstract

New Zealand's population is ageing rapidly and alongside this the labour force is also ageing. This paper presents a descriptive analysis of the labour force and employment trends among older New Zealanders (that is, those aged 55 and over). Specifically, the paper focuses on labour force participation by age-group, by cohort and by region, and employment by industry and by occupation. I find that the older labour force is large and growing over time, and the patterns are similar by gender and by region. Employment of older workers is more concentrated in agriculture than other industries or occupations. Cohort analysis reveals that generational differences in labour force participation rates are a significant driver of increases in the older labour force, but that cohort differences do not explain increases in the proportion of full-time employment among older workers to the same extent.

Keywords labour force participation older people, New Zealand

# JEL Classification J21, J26

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#### 1. Introduction

Like other Western countries, New Zealand's population is ageing rapidly. Statistics New Zealand (2006) projected that the 65+ age group would make up over one-quarter of New Zealand's population by the 2030s, up from 12 per cent in 2005. They also projected that the number of people aged over 65 would increase from half a million in 2005 to 1.33 million in 2051. This rapid and unprecedented ageing of the population has a number of implications for New Zealand, including the ability to continue national superannuation at current levels (Wilson and Rodway 2006, Bascand 2012, New Zealand Treasury 2013), retirement planning more generally (Jackson, Cochrane and McMillan 2013), increased healthcare costs (Bascand 2012), potential skills shortages (Robson 2001), and other challenges and opportunities for employers of coping with an ageing workforce (Davey 2008).

This paper presents a descriptive analysis of the labour force and employment trends among older New Zealanders (that is, those aged 55 and over). Specifically, I focus on labour force participation by age-group, by cohort and by region, and employment by industry and by occupation. This analysis suggests that labour force participation is highest among the young old, but is also substantial among the oldest age groups. Full-time employment is substantial among the youngest old, with part-time employment more prevalent among the oldest age groups. The labour force of older people has grown substantially over the 22-year period between 1991 and 2013, and crucially the labour force participation rate among older people has also grown. The time period considered includes a period where the age of eligibility for national superannuation increased from 60 years in 1991 to 65 years in 2001, and this clearly affected the incentives for labour force participation among older people. Part of the increase in the older labour force is due to an increase in the size of successive age cohorts, but generational differences in labour force participation rates are also significant. However, generational differences do not appear to affect the choice between part-time and full-time employment to the same extent.

The paper proceeds as follows. The next section details the data and definitions and methods used in the paper. Then, the labour force characteristics of older New Zealanders in 2013 are explored, followed by an analysis of changes over the period 1991 to 2013, and a cohort analysis of generational changes in labour force participation and part-time/full-time employment status. The final section concludes.

#### 2. Data and Methods

All data in this paper are drawn from the Census of Population and Dwellings (1991, 1996, 2001, 2006 and 2013), using custom tables obtained from Statistics New Zealand. For confidentiality reasons, all data were randomly rounded to base 3 by Statistics New Zealand. The discontinuity in data between 2006 and 2013 (being a seven-year period, as opposed to the five-year periodicity prior to 2006) may present some challenges for interpretation. These are discussed at relevant points in the paper below.

All data are provided in five-year age groups, with the oldest age group being those aged 85 years and over. While this limits the analysis that can be conducted for the oldest New Zealanders, in reality few of those aged 85 and over remain in the labour force (see following sections), so extending the analysis by five-year age groups to 90 or 95 would likely add very little additional insights. In considering the labour force of older New Zealanders, I limit consideration to those aged 55 years and over (and in some cases 65 years and over). This age range was chosen in order to encompass older people who have attained the age of national superannuation (which is universal in New Zealand at age 65 for both men and women), as well as those who are nearing this de facto retirement age.<sup>1</sup> When considering labour force totals, I use the labour force aged 25 years and over. This ensures that young people who are in training or further education are mostly excluded from the analysis.

The analysis covers all 14 regional council areas in New Zealand. Industries are defined using the ANZSIC96 V4.1 classification rather than the current standard ANZSIC06, as all data from 1996 to 2013 could be classified using that classification. Similarly, occupations are defined using NZSCO99 V1.0 rather than the recently adopted ANZSCO13 because all data from 1991 to 2013 could be classified using the earlier classification.

The Census data that are used record a person's work and labour force status for the seven days ending on Census day. Throughout the paper I use standard definitions for labour force status. The labour force is defined as the total number of workers employed (whether part-time or full-time) and those unemployed (without a job but actively seeking employment), and the labour force participation rate is the proportion of the workforce that are in the labour force. Where used below, the unemployment rate is the proportion of the labour force that is unemployed.

#### 3. Labour Force Characteristics of Older New Zealanders in 2013

Figure 1 presents the labour force participation rate by sex and five-year age group from the 2013 Census. Overall the labour force participation rate was 68.5% for those aged 25 years and over, 67.1% for those aged 15 years and over, and lower for women (62.6%) than for men (75.0%).

For women, the labour force participation rate was low for those aged under 25 years (58.9%), then increased to peak participation among those aged 45-49 years (82.6%) with a small decrease in the main childbearing years (30-34 years). Above age 49, labour force participation decreased, with the largest absolute decrease occurring between ages 60-64

<sup>&</sup>lt;sup>1</sup> There is no official 'retirement age' in New Zealand, although many older workers are likely to take the opportunity to retire presented by the commencement of national superannuation at age 65. For simplicity, the remainder of the paper will refer to age 65 as the retirement age, meaning the age at which national superannuation becomes available.

years (63.7%) and 65-69 years (35.2%). Overall, the labour force participation rate for women aged 65 years and over was 16.7%.



Figure 1: Labour Force Participation Rate by Sex and Age, 2013

For men, the labour force participation rate was also low for those aged under 25 years (61.5%), then increased to peak participation among those aged 35-39 years (90.1%) before declining, with the largest absolute decrease also occurring between ages 60-64 years (77.8%) and 65-69 years (51.2%). Overall, the labour force participation rate for men aged 65 years and over was 29.3%.

These results are unsurprising. Given that national superannuation becomes universally available at 65 years of age, it is to be expected that many more New Zealanders choose leisure over work after age 65 than before. However, labour force participation remains substantial even above 65 years, and in 2013 there were a considerable number of people (about 2,800) who were still in the labour force aged 85 years or over.

Figure 2 presents the unemployment rate by sex and five-year age group from the 2013 Census. Overall the unemployment rate was 5.0% for those aged 25 years (and over 7.1% for those aged 15 years and over), and higher for women (5.8%) than for men (4.4%). Unemployment rates were highest among the young (18.4% for those aged under 25 years; 19.9% among young women, and 17.1% among young men) and decreased monotonically

among both men and women until ages 75 and over. Unemployment rates were higher among women than men up until age 59 years, and above that age the unemployment rates were mostly higher among men than women. Overall, the unemployment rate for those aged 65 years and over was 1.7%, and almost identical between women (1.6%) and men (1.8%).

Again, the results are unsurprising. There is a noticeable drop-off in unemployment rates between those aged 60-64 years and those aged 65-69 years. This probably reflects a trend towards leaving the labour force, for those who are unemployed at retirement age. Men may be more likely to continue to try and find work after retirement age, which explains their higher unemployment rates than women at ages 65 and over.



Figure 2: Unemployment Rate by Sex and Age, 2013

Figure 3 disaggregates the employed in 2013 into part-time and full-time employment for those aged 55 years and over by five-year age group. First, it is clear that the size of the labour force declines with age, with a labour force of over 192,000 aged 55 to 59 years, down to fewer than 3,000 aged 85 years and over. Second, the ratio of part-time to full-time employment differs significantly by age. At younger ages up to 64 years, substantially more than half of those employed are full-time. In the 65-69 years age group, the proportion employed full-time drops to just 61.7%, and at ages 70 and over there are more part-time than full-time employed people.

This provides further detail on the characteristics of the older labour force. After retirement age, fewer people are working and those that are working are more frequently doing so part-time. Again this reflects a retirement trend, and the choice of part-time employment probably relates to many people choosing to transition from employment to retirement through an intermediate phase of part-time employment, rather than making an abrupt adjustment from full-time employment directly to retirement. There are differences in this transition by sex (see Appendix Figures 1 and 2). More women are employed part-time than full-time in the 65-69 years age group as well as older age groups, whereas for men the transition to more part-time work is in the 70-74 years age group.



Figure 3: Employment by Part-time/Full-time Status and Age, 2013

Figure 4 shows the labour force participation rate for people aged 65 years and over for each region in New Zealand in 2013. Overall, the labour force participation rate was highest in Gisborne (25.4%), Waikato (24.6%), and Southland (24.3%), and lowest in Nelson (18.3%), Bay of Plenty (21.2%), and Otago (21.5%). For women, the labour force participation rate was highest in Gisborne (20.1%), Northland (18.7%), and Waikato (18.3%), and lowest in Nelson (13.5%), Otago (15.5%), and Canterbury (15.4%). For men, the labour force participation rate was highest in Southland (32.2%), Gisborne (31.9%), and Waikato (31.8%), and lowest in Nelson (24.0%), Bay of Plenty (27.7%), and Taranaki (28.4%). These rankings are substantially different from those for the labour force as a whole, where for those aged 25 years and over the highest labour force participation rates are observed in

Wellington (71.4%), Southland (70.9%), and Canterbury (69.4%), and the lowest rates are observed in Northland (62.1%), Bay of Plenty (65.1%), and Manawatu-Wanganui (65.5%). The difference in ranking between the overall labour force and the older labour force reflects the differences in the motivation of older people to work. In particular, the areas with low labour force participation rates among older people include traditional 'sunbelt' retirement areas such as Nelson and the Western Bay of Plenty.



Figure 4: Labour Force Participation Rate for People Aged 65 Years and Over, by Sex and Region

Figure 5 shows the industry mix of employment in 2013 by five-year age groups for those aged 55 years and over, along with the mix for the labour force aged 25 years and over as a whole. Comparing the older age groups with the labour force aged 25 years and over as a whole, there are four industries where the proportion of employment at every age group 55 years and over is lower than for the labour force aged 25 years and over as a whole: (1) *Construction*; (2) *Wholesale Trade*; (3) *Retail Trade*; and (4) *Accommodation, Cafés and Restaurants.* This is unsurprising, given that these industries are typically characterised by a youthful workforce. The *Agriculture, Forestry and Fishing* industry is the only industry where the proportion of employment at every age group 55 years and over is higher than for the labour force aged 25 years and over is higher than for the labour force aged 25 years and over as a whole.

The change in industry mix across age groups is most interesting. *Agriculture, Forestry and Fishing* makes up a strictly increasing proportion of employment among older age groups, increasing from 7.2 percent of employment among those aged 55-59 years to 35.4 percent of employment among those aged 85 years and over. Many workers in this industry are self-employed farmers, or have made the transition from self-employed to employer, both of which offer flexible work hours to some extent and allow them to continue in work to older ages. The substantial increase in agricultural employment by age reinforces the aged nature of the labour force noted in the previous paragraph, as well as the earlier findings of Jackson (2013) and Cameron, Barrett, Cochrane and McNiell (2010) on the difficulty that farmers are facing in ensuring succession of farm ownership as they age. This difficulty in succession is partially due to an unwillingness of younger people to enter the industry. No other industries show a monotonic increase in proportion of employment over these age groups.

In contrast, both *Education* and *Health and Community Services* show a monotonic decrease in employment proportion by age group. *Education* decreases from 9.9 percent of employment in the 55-59 year age group to 3.8 percent in the 85 years and over age group, while *Health and Community Services* decreases from 13.5 percent of employment in the 55-59 year age group to 4.3 percent of employment in the 85 years and over age group.

The latter decreases are most apparent amongst women (see Appendix Figures 3 and 4), with *Education* decreasing from 14.9 percent of women's employment in the 55-59 year age group to 7.5 percent of women's employment in the 85 years and over age group, and *Health and Community Services* decreasing from 22.9 percent of women's employment in the 55-59 year age group to 10.4 percent of women's employment in the 85 years and over age group.

Women also demonstrate a monotonic decrease in employment proportion by age group in the *Construction* industry, though the numbers are small, while men show monotonic decreases in employment proportion by age group in the *Electricity, Gas and Water Supply, Government Administration and Defence*, and *Health and Community Services* industries, again all with relatively small numbers. Both sexes show monotonic increases in employment proportion by age group only in the *Agriculture, Forestry and Fishing* industry.



Figure 5: Industry Mix of Employment by Age Group, 2013

Figure 6 shows the age mix of employment in each industry in 2013, and demonstrates that some industries have developed a clearly older age profile of workers than others. For instance, 12.5 percent of workers in the *Agriculture, Forestry and Fishing* industry are aged 65 years and over, with a further 18.9 percent aged 55-64 years. Other industries with the oldest age profile of employment include *Transport and Storage* (7.9 percent aged 65 years and over, and 19.9 percent aged 55-64 years), *Health and Community Services* (6.4 percent aged 65 years and over, and 22.4 percent aged 55-64 years), and *Property and Business Services* (6.4 percent aged 65 years and over, and 16.5 percent aged 55-64 years). These industries may face critical shortages of workers as their ageing workforce moves increasingly into retirement.

In contrast, the industries with the youngest age profile of employment include *Finance and Insurance* (3.7 percent aged 65 years and over, and 13.3 percent aged 55-64 years), *Accommodation, Cafés and Restaurants* (3.9 percent aged 65 years and over, and 11.1 percent aged 55-64 years), and *Communication Services* (4.0 percent aged 65 years and over, and 13.7 percent aged 55-64 years). These industries may have lower exposure to the older workforce now, but will inevitably face an ageing workforce in the future and may need to adapt their employment practices to suit a changing age structure of the labour force.



Figure 6: Age Mix of Employment in each Industry, 2013

Figure 7 shows the occupation mix of employment in 2013 by five-year age groups for those aged 55 years and over, along with the mix for the labour force aged 25 years and over as a whole. Comparing the older age groups with the labour force aged 25 years and over as a whole, there are two occupations where the proportion of employment at every age group 55 years and over is lower than for the labour force aged 25 years and over as a whole (*Technicians and Associate Professionals*, and *Trades Workers*), and one occupation where the proportion of employment at every age group 55 years and over as a whole (*Agriculture and Fishery Workers*). The result for *Agriculture and Fishery Workers* is similar to that observed at the industry level, reflecting the single-industry nature of *Agriculture and Fishery Workers*. Unlike the industry mix, there are no occupations that demonstrate a monotonic increase or decrease in proportion of employment by age group.



Figure 7: Occupation Mix of Employment by Age Group, 2013

#### 4. Labour Force Characteristics of Older New Zealanders, 1991-2013

Figure 8 shows how the labour force participation rate has changed over the period 1991-2013, by 5-year age groups. At all age groups, labour force participation has increased substantially over this 22-year period, including during the most recent intercensal period which included the Global Financial Crisis (with the exception of the 85 years and over age group, where the labour force participation rate fell slightly, from 4.2% to 3.9%). For the most part, this follows a national trend at all ages towards higher labour force participation, with the labour force participation rate for all those aged 25 years and over increasing from 60.0% in 1991 to 69.0% in 2006, before falling slightly to 68.5% in 2013. However, a large proportion of this labour force growth has occurred among the oldest age groups.

The largest absolute increase in labour force participation over the period 1991-2013 occurred for those aged 60-64 years. Much of this increase was between 1991 and 2001, and is explained by the rapid increase in the age of eligibility for New Zealand Superannuation, which rose from 60 years in 1991 to 65 years in 2001 (Preston, 2008).

There are slight differences in the trajectory of labour force participation between men and women (see Appendix Figures 5 and 6). For men, labour force participation rates increased across all age groups between 1991 and 2006, but fell slightly amongst those aged 55-59 years and those aged 85 years and over between 2006 and 2013. For women, there were similar increases in labour force participation between 1991 and 2006 as for men, with only the 85 years and over age group experiencing a decrease in participation between 2006 and 2013.



Figure 8: Labour Force Participation Rate by Age, 1991-2013

Figure 9 shows labour force growth among those aged 65 years and over for the period 1991 to 2013. The total number of people aged 65 years and over in the labour force has grown substantially over the period, from 21,972 in 1991 to 131,784 in 2013. This represents an annualised growth rate of 8.5%, compared with 1.9% annualised growth rate in the labour force aged 25 years and over during the same period. Additionally, there has been growth in the labour force within every age group 65 years and over. In relative terms the growth has been greatest in the 85 years and over age group (12.6% per year annualised growth). Growth in the older labour force has been greater among women (10.5% per year annualised growth) than men (7.5% per year annualised growth); see also Appendix Figures 7 and 8.



Figure 9: Labour Force Aged 65 Years and Over, 1991-2013

In the previous section, Figure 3 showed that part-time employment exceeded full-time employment only for those aged 70 years and over. Figure 10 shows how both part-time employment and full-time employment have changed over the period from 1991 to 2013, among those aged 65 years and over. In absolute terms, both part-time employment and full-time employment have increased in every time period. In 1991, full-time employment exceeded part-time employment with full-time employment making up 55.0% of the total. This decreased substantially to 43.6% of the total in 1996, due to a more-than-doubling of the number of older people in part-time employment.

Since 1996, the proportion of full-time employment among older people has gradually increased, to 53.0% by 2013. When separating the data by five-year age group (see Appendix Table 1), it is clear that the move towards more part-time employment between 1991 and 1996 occurred at all age groups, but that since 1996 the return to more full-time employment has occurred mainly in the 65-69 year age group and to a lesser extent the 70-74 year age group. This suggests that it may be a cohort effect – a point we will return to in the following section.

The change in the ratio of full-time to part-time workers may be partially explained by policy changes. In 1991, the Superannuation surcharge (the amount by which New Zealand Superannuation was reduced for each dollar of additional earnings) was increased from 20 percent to 25 percent, and the amount of additional income that could be earned before the

surcharge applied was lowered (Preston, 2008). This reduced the incentive for full-time work among older workers. In 1998 the surcharge was abolished, which removed the negative incentive towards earning additional income including through full-time, rather than part-time, work.



#### Figure 10: Employment by Part-time/Full-time Status for those Aged 65 Years and Over, 1991-2013

#### 5. Cohort Changes in Labour Force Participation of Older New Zealanders

The increase in the size of the labour force within older age groups is comprised of two underlying changes: (1) increases in the size of the age cohorts reaching retirement age; and (2) changes in labour force participation rates by successive cohorts. The former change is well recognised, as the baby boomer generation (born after 1946) is currently reaching age 65 and in greater numbers. This section attempts to uncover the latter of those two changes. This analysis is somewhat limited however, for two reasons. First, because of the change in Census periodicity from five-yearly between 1991 and 2006, to seven years between the last two Censuses, the cohorts in 2013 are not a perfect match to those in earlier Census years. Second, the oldest age group is not a true five-year age cohort, although it is unlikely that there are many people still in the labour force at age 90 years or over. In spite of these limitations, the analysis appears to show some robust trends.

Figure 11 shows the labour force participation rate for successive cohorts, with each cohort identified by the age group it filled in 2013. For instance, the cohort labelled 80-84 years, was aged 80-84 years in 2013, and is matched with the group aged 75-79 years in 2006, the group aged 70-74 years in 2001, the group aged 65-69 years in 1996, and the group aged 60-64 years in 1991. Thus, the figure follows each cohort across time, in terms of their labour force participation rate.





Two things are obvious from Figure 11. First, labour force participation declines with age for every cohort, and for the most part the largest declines in participation occur between ages 60-64 years and 65-69 years. This is consistent with the earlier analysis in the paper. Second, labour force participation is increasing for successive cohorts, which reflects a generational difference in work preferences at older ages. That is, as each cohort reaches age 65, their labour force participation rate is higher than all earlier cohorts at the time they reached that age. The trend between successive cohorts is statistically significant (p = 0.03). However, the increase in labour force participation rate appears to have slowed down for those born after 1951, with that cohort having only a slightly higher labour force participation than the cohort born between 1946 and 1951. However, whether this is a trend or an aberration of the data related to the slow recovery from the Global Financial Crisis will not be known until further data become available.

The analysis looks similar when disaggregated by sex (see Appendix Figures 9 and 10), although the labour force participation rate for men at age 55-59 years declined between 2006 and 2013. Again, it won't be known whether this is a break in the long-run trend of increasing labour force participation until further data become available.

Figure 12 shows the breakdown between part-time and full-time employment for successive cohorts, with each cohort again identified by the age group it filled in 2013. The proportion of older workers in full-time employment (compared with part-time employment) declines fairly consistently with age for every cohort. Unlike the earlier analysis, there does not appear to be a significant break between ages 60-64 years and 65-69 years. The figure also shows a definite trend across cohorts and especially within the oldest age groups, with each successive cohort showing a reduced proportion of full-time employment. This trend over successive cohorts is highly statistically significant (p = 0.008), but the size of the effect is clearly largest at older ages. This suggests that the increases in full-time employment among those aged 65 years and over demonstrated in the previous section are predominantly a result of larger cohorts entering the youngest post-retirement-age groups, where full-time employment is more prevalent. In the future, full-time employment among those aged 65 years and over is likely to initially increase due to the baby boomer cohorts, before decreasing in favour of part-time employment as smaller post-baby-boomer cohorts reach retirement age.



Figure 12: Employment by Part-time/Full-time Status by Cohort

The trends are similar for both men and women (see Appendix Figures 11 and 12), although there appears to have been a slight trend towards more full-time employment among successive female cohorts since those born in 1941-1946. Again, the robustness of this trend will not be known until further data become available, but it may reflect a generational difference in women's work preferences.

#### 6. Conclusions

An understanding of labour force trends among older New Zealanders is crucial, given the overall ageing of the New Zealand population and especially the increasing size of the older population relative to those of prime working age. Census data from 1991 to 2013 demonstrates that labour force participation is highest among the young old, but is also substantial among the oldest age groups. Full-time employment is substantial among the youngest old, with part-time employment more prevalent among the oldest age groups. Over the period 1991 to 2013 the size of the labour force of older people has grown substantially, and the labour force participation rate among older people has also grown, while the proportion of older workers in full-time employment has grown between 1996 and 2013. Part of the increase in the older labour force is due to an increase in the size of successive age cohorts, but generational differences do not appear to affect the choice between part-time and full-time employment to the same extent, with the relative size of successive cohorts explaining much of the change in the proportion of full-time employment among older workers.

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# Appendices



Appendix Figure 1: Employment by Part-time/Full-time Status and Age for Women, 2013

Appendix Figure 2: Employment by Part-time/Full-time Status and Age for Men, 2013





Appendix Figure 3: Female Industry Mix of Employment by Age Group, 2013







Appendix Figure 5: Labour Force Participation Rate by Age for Women, 1991-2013

Appendix Figure 6: Labour Force Participation Rate by Age for Men, 1991-2013





Appendix Figure 7: Female Labour Force Aged 65 Years and Over, 1991-2013

Appendix Figure 8: Male Labour Force Aged 65 Years and Over, 1991-2013





Appendix Figure 9: Women's Labour Force Participation Rate by Cohort

90.0% 80.0% 70.0% 60.0% -----Born 1941-1946 50.0% ----Born 1926-1931 40.0% Born 1921-1926 Born 1916-1921 30.0% Born 1911-1916 ----Born 1906-1911 20.0% Born before 1906 10.0% 0.0% 55-59 Years 60-64 Years 65-69 Years 70-74 Years 75-79 Years 80-84 Years 85 Years And Over

Appendix Figure 10: Men's Labour Force Participation Rate by Cohort



Appendix Figure 11: Employment by Part-time/Full-time Status by Cohort for Women

Appendix Figure 12: Employment by Part-time/Full-time Status by Cohort for Men



	1991		1996		2001		2006		2013	
Age Group (years)	Part- Time	Full- Time								
65-69	6075	7539	10833	9552	12537	14901	20823	27309	30402	48906
	44.6%	55.4%	53.1%	46.9%	45.7%	54.3%	43.3%	56.7%	38.3%	61.7%
70-74	2457	2835	5703	3954	7290	5991	10197	8289	16983	14580
	46.4%	53.6%	59.1%	40.9%	54.9%	45.1%	55.2%	44.8%	53.8%	46.2%
75-79	864	1041	2541	1641	3861	1713	6126	2364	7593	3546
	45.4%	54.6%	60.8%	39.2%	69.3%	30.7%	72.2%	27.8%	68.2%	31.8%
80-84	240	321	1215	699	1818	549	3060	876	3579	1128
	42.8%	57.2%	63.5%	36.5%	76.8%	23.2%	77.7%	22.3%	76.0%	24.0%
	72	123	576	282	1002	273	188/	441	2304	/192
85+	36.9%	63.1%	67.1%	32.9%	78.6%	21.4%	81.0%	19.0%	82.4%	4 <i>92</i> 17.6%

# Appendix Table 1: Employment Part-Time and Full-Time Status by Age Group, 1991-2013