



# Changes in women's earnings

Key changes over the last 30 years and comments on the outlook for the next 10 years

NZIER report to the Ministry of Women's Affairs



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## Preface: Ministry of Women's Affairs

The Ministry of Women's Affairs undertook research in 2011 and early 2012 that sought to identify the economic returns from women's skills both now and into the future.

This research compared a subset of indicators of labour market participation and income data over the past 30 years by ethnicity and gender. This has resulted in a significant body of detailed work.

The attached report, *Changes in Women's Earnings*, prepared by NZIER, summarises and presents the key insights from this work. It also provides some observations on patterns of changes in the labour market, and discusses possible policy options for future work in this area.

This report will also assist with the Ministry's work in developing policy for women in New Zealand, particularly in achieving greater economic independence for women. The Ministry will give careful consideration to the areas of focus outlined in this summary, and will be looking further into how to improve outcomes for low-income women.

### **Disclaimer**

This report cites research that was undertaken by the Ministry of Women's Affairs. The views, opinions and conclusions expressed in the report are intended to inform and stimulate wider debate. They do not represent government policy.

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# Key points

The purpose of this report is to describe the drivers of changes in the economic returns to women's skills over the past 30 years and to consider how these drivers may affect returns to women's skills over the next 10 to 15 years. (This report summarises and comments on the findings of a series of research papers undertaken by the Ministry of Women's Affairs.)

Women in New Zealand are more able, and more likely, to be economically independent today than at any time over the last 30 years. This is particularly the case for younger women, and compared to women in other countries. The cohort effect – replacement of older workers with younger workers with much higher levels of qualifications – and different attitudes to employment and child rearing options for families seems to be a very strong driver of the improvement in women's earning capacity.

The earnings gap between men and women has narrowed as women have gained qualifications that enable them to enter well paid occupations. Women of all ages and ethnicities are now more qualified than men and young women are obtaining qualifications at a higher rate than men.

Occupational segregation has decreased in most highly skilled occupations (managerial and professional), remained similar for some skilled occupations (clerical) and increased for other skilled occupations (trades) and unskilled occupations. Overall, the change in segregation patterns appears to have helped to close the gender earnings gap as segregation has diminished in most highly skilled occupations. However, the increase in segregation for trades and unskilled occupations may expand the earnings gap for women who are not able to enter highly skilled or other skilled (non-trades) occupations.

The remaining earnings gap seems to be due to differences in both length of time women spend in the workforce and the higher propensity of women to work in part-time<sup>1</sup> (usually work fewer than 30 hours per week) rather than full-time roles (usually work 30 or more hours per week). Women's decisions about child-rearing explain only part of the difference between time in the workforce for women and men. Other factors that contribute to this difference include women's higher propensity to work outside of their field of study, work in part-time roles, and other societal attitudes.

Average time in the workforce is converging for women and men. If the trend over the past 10 years continues, the average time in the workforce for men and women will be about the same within the next 10 years. Analysis of the drivers of earnings suggests that convergence of time in the workforce would remove most of the remaining average earnings gap between women and men. However, this hypothesis needs to be tested particularly with respect to influences on women's attachment to the workforce and career progression.

The momentum of these changes seems to have applied more or less evenly to the main ethnic groups. The earning capacity for Māori and Pacific women has not caught up to that of European women, but has improved at about the same rate.

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<sup>1</sup> Statistics New Zealand, the source of most of the data on which the research is based define 'full-time' employed as those who usually work 30 hours or more per week, while 'part-time' employed usually work fewer than 30 hours per week. (See [http://www.stats.govt.nz/surveys\\_and\\_methods/methods/classifications-and-standards/classification-related-stats-standards/hours-worked-in-employment/definition.aspx](http://www.stats.govt.nz/surveys_and_methods/methods/classifications-and-standards/classification-related-stats-standards/hours-worked-in-employment/definition.aspx)).

The changes experienced in New Zealand seem to be broadly consistent with those in other OECD countries.

Despite the positive elements of the above picture, the data also suggests that the number of young women who finish their education without achieving qualifications is growing. This group is at risk of being trapped in low income work or unemployment particularly if they decide to have children.

The picture described above suggests the policy questions facing the Ministry are changing. Demographic changes are steadily narrowing the average earnings gap. The policy question in this area seems to be shifting to whether the average gap could be closed more quickly by assisting women to move from part-time (usually fewer than 30 hours per week) to full-time work (usually 30 or more hours per week). At the same time there are indications an increasing number of young women are at risk of being trapped in low income work or unemployment and may need assistance to upgrade their skills or encouragement to re-enter the workforce.

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# 1. Overview

## 1.1 Introduction

This report combines the key insights from a series of research papers on the changes in women's skills and experience of employment over the last 15 to 30 years to:

- tell a story about how women's earning patterns have changed over the last 30 years and what the main drivers of those changes were
- ask some questions about what might happen to women's earning patterns in the near future based on the dominant drivers of recent changes.

The research papers were intended to apply this information to assessing how the change in women's earning patterns contribute to changes in women's economic independence. However, it was difficult to define economic independence in a way that could be measured by the data analysed as part of the research.

## 1.2 Economic independence

The Ministry of Women's Affairs has suggested the following definition for economic independence:

*'Economic independence is where women have access to the full range of economic opportunities and resources, including employment, services and sufficient disposable income, so they can shape their lives and their futures and meet their own needs and the needs of their dependents. Economic independence complements, rather than excludes, the importance of interdependence within families, communities and society'.*

The research papers that we have reviewed analysed the changes in the distribution of income earning capacity of women relative to men and how this was affected by other factors such as the decision to have children. Therefore, the research papers provide an indication of how women's economic independence has and might change due to changes in their earning power or number of dependents.

## 1.3 Our approach

Our report considers the data-based insights and the observations and thoughts on the drivers of change in the labour market from the research papers. This approach enables the data based research insights to be arranged into an explanation of how women achieved such a rapid improvement in their capacity to earn income and how these drivers might affect women's capacity to earn in the near future. In some instances we have used our own less well-established observations to bridge the gaps between islands of data analysis. We acknowledge that this can create the impression that the observations are evidenced by data. Accordingly, we have attempted to clearly distinguish our observations from the findings drawn from the research papers.

## 1.4 An example of our thinking

A core conclusion from the research is that women in New Zealand are more able, and more likely, to be economically independent today than at any time over the last 30 years. This is particularly the case for younger women, and compared to women in other countries.

The research papers reach this conclusion by comparing a subset of indicators of labour market participation and income data over the past 30 years by ethnicity and gender. Examination of these measures confirms there has been a large and rapid increase in women's earnings in absolute terms and relative to men, both in New Zealand and the OECD. The size and speed of this increase has differed among groups of women (based on characteristics such as age, ethnicity and country). In particular, the research shows that women's rates of attainment of qualifications and workforce participation and also their average time in the workforce are all trending upwards.

The change in economic independence identified by the research has been associated with rapid and large shifts in the nature of work, and social attitudes to women gaining qualifications, working and what they could expect to earn, that have all supported an increase in women's earning capacity. However, the research also suggests that women's average earning capacity is still less than that of men.

So what is likely to happen next...? Our "approach" (observation of the labour market and projection of trends over recent years) suggests some hypothetical answers to these questions based on the conclusions of the research papers and our own observations on the operation of the labour markets. In the case of the sample conclusion described above it appears to us that the research suggests:

- each new age cohort enters the workforce with a new set of skills and expectations of time in the workforce – effectively "re-setting" the characteristics of a segment of the workforce each year. The research suggests that over the past 20 to 30 years each new cohort has been better educated and probably intends to spend longer in the workforce than previous cohorts. Younger cohorts are also usually larger than the older cohorts they "replace", amplifying the change effects of the differences in qualifications between the incoming and outgoing cohorts
- women's higher rate of attainment of qualifications and changes in the employer attitudes in most occupations<sup>2</sup> enables women to enter well-paid occupations, particularly for younger age groups entering the workforce. This driver is expected to become more influential over time as increasingly better qualified younger cohorts replace older cohorts
- women's average time in the workforce is increasing. Extrapolation of trends in average time in the workforce over the last 10 years suggests that women and men will have similar average times in the workforce within the next 10 years. Longer time in the workforce should enable women to leverage their qualifications to earn on average as much as, or more than men
- despite the above factors that have helped to close the gender earnings gap, women's average attachment to work seems to be lower than the average for men. This is partially due to women's higher propensity to stop working to look

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<sup>2</sup> Average segregation measures have fallen for managerial, professional, and sales and service occupations, but increased for trades occupations.

after their children, work outside of their field of study, and work in part-time roles. Other societal attitudes also seem to play a role.

The research analysis suggests the gap between the average pay for women and men is likely to close as women already have achieved higher levels of qualifications than men and are achieving average levels of time in the workforce approaching the average for men. The above points suggest that the strategic policy considerations for the Ministry may need to switch from closing the gap between the average earnings for women and men to considering:

- women's attitudes to if and when they have children and their preferred approach to looking after their children
- drivers of some women's decisions to end their education without achieving qualifications and in some cases to have children.

# 2. Brief

## 2.1 Introduction

Both this report and the series of research papers undertaken by the Ministry are expected to contribute to answering the same “brief”. This section describes this brief.

This paper considers the following questions about the drivers of economic returns to women’s skills:

- Have women’s skills increased over the last generation?
- What skills matter for economic gain?
- Has women’s economic status changed over the last 25-30 years?

## 2.2 Change in women’s skills

Have women’s skills increased over the last generation?

- What have been the changes in terms of capability (e.g. literacy, numeracy), fields of expertise, level of qualifications and other possible indicators of skill acquisition for women over the last 25-30 years?
- What has been the pattern for different groups of women?
- How do these patterns compare to different groups of men, and to women in other jurisdictions?
- What has helped or impeded change?
- What can we forecast for the future?

## 2.3 Skills and economic gain

What skills matter for economic gain?

- To what extent are qualifications a useful proxy for skills, in terms of driving productivity?
- What changes have occurred in the demand for, and economic return on, skills over the last 25-30 years?
- What skills are likely to be most important in terms of future demand for skills and economic gain?

## 2.4 Change in women’s economic status

Has women’s economic status changed over the last 25-30 years?

- What changes have occurred in terms of economic return to skills, sources of income and overall income levels?
- What has been the pattern for different groups of women?
- How do these patterns compare to different groups of men, and to women in other jurisdictions?
- What has helped or impeded change?
- What can we forecast for the next 25-30 years?

## 2.5 Research coverage

The Ministry undertook research on the changes in women's employment, earnings and business management. The research analyses differences between statistical "snapshots" of demographics, income, qualifications and occupations. Comparisons are made on the basis of gender, age and ethnicity for people of working age in New Zealand and also between New Zealand and OECD countries.

This research approach has been effective at identifying and measuring changes in indicators. We make the following comments about the choice of comparisons:

- our main impression from the research papers is that there has been rapid change over the past 20 to 30 years and the drivers of this change are still in play. We note that the time frame used in the papers varies from 10 to 30 years and some analyses end in 2006 rather than 2011 depending on the availability of data. However, we believe that the observations of the research are not undermined by these timing differences and in general do not attempt to adjust the research findings over a consistent period
- entry of new cohorts into the workforce is a key driver of the rate of change in women's earnings due to resulting changes in social attitudes, work expectations and child rearing preferences. The research focuses on changes in average indicators rather than the differences between incoming and outgoing cohorts. This is a valid approach to the brief but may understate the ongoing impact of these changes
- comparison of women's earning across ethnic groups shows some secondary differences which seem to reflect differences detected in other analysis
- comparisons with men are becoming less relevant as a benchmark of what women can achieve as the proportion of women in the workforce increases, as their level of qualification exceeds that of men and their expected time in the workforce increases
- comparison with other OECD countries provides a rough cross-check of whether New Zealand is roughly "in-step" with other countries. The value of this check is limited by the differences between labour markets in OECD countries and the high barriers to transfer of labour between these markets. (The limitations of international comparisons are acknowledged in the research.)

# 3. Changes in skills

## 3.1 Introduction

This section discusses the change in women’s skills over the past 20 to 30 years. New Zealand women’s educational qualifications have increased in absolute terms and relative to men’s over the last generation.

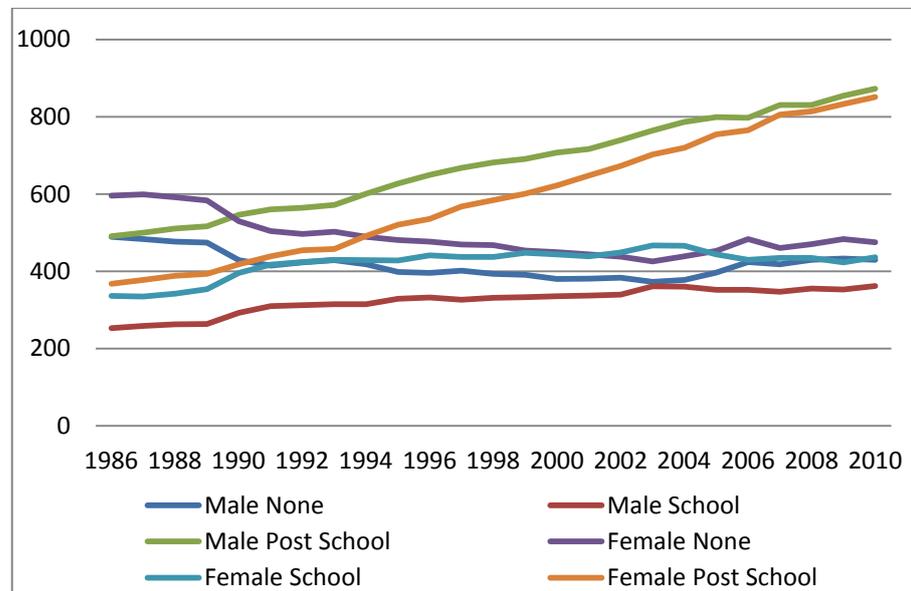
The research does not measure skill levels directly and instead uses a hybrid measure of qualifications and time in the workforce as a proxy for measurement of skill levels. Analysis of those working ‘in’ or ‘out’ of field and the income premium/discount related to these choices are also analysed. (This measure is discussed in more detail in Section 4).

## 3.2 Changes in women’s capability overall

Women’s educational qualifications have increased in absolute terms and relative to men’s over the last 30 years. The numbers of people in New Zealand aged 15 years or over with school or post-school qualifications increased strongly between 1986 and 2010, particularly so for women. Over this period, for example, the number of women with a post-school qualification increased by 131 percent, compared with a 78 percent increase for men.

**Figure 1 Working age population qualification**

Number of working age population by highest qualification and gender.



Note: ‘working age’ are those aged 15 years and above; ‘none’ includes ‘not specified’.

Source: Household Labour Force Survey (HLFS), December 1986 to December 2010.

Women of working age are now more highly qualified than men and this disparity is likely to increase over time as older age groups leave the workforce and better-qualified younger generations enter. In 2006, for example, 75 percent of women and 75 percent of

men had a school or post-school qualification, with women more likely (as a proportion of all women) than men (as a proportion of all men) to have a post-school qualification.

The proportion of men aged 20 to 59 years with no qualifications exceeded the proportion of women of that age with no qualifications by 1996, and the proportion of women with university qualifications was almost the same as the proportion of men by 2001, and exceeded it by 2006.

### **3.2.1 Literacy but no numeracy advantage for girls**

Assessment of girls and boys at age 15 years reveals that the mean reading literacy score of New Zealand girls is between five and nine percent higher than that of New Zealand boys. This difference is statistically significant. The advantage to girls in reading literacy has been persistent over a long period of time, and is pervasive across countries and across different assessment instruments. Gender differences in mathematical and scientific literacy, on the other hand, are small and often not statistically significant. Scores across all three domains in New Zealand have been relatively stable since the year 2000.

### **3.2.2 Girls more likely to stay at school**

From the early 1990s, New Zealand girls became more likely than boys to stay on at school to ages 16 and 17 years, and this has subsequently fed through to women in the workforce slowly overcoming the previous male advantage in qualifications. Between 1986 and 2010, the number of women with a post-school qualification increased by 131 percent compared with a 78 percent increase for men, as shown in Figure 2.

### **3.2.3 Completion of tertiary education**

Almost 25 percent of women aged 20 to 39 years had acquired university qualifications in 2006, while only 20 percent had no qualifications.

With the rapid increase in women's acquisition of tertiary qualifications, women have increased their presence in all fields of study since the mid-1990s, and are now the majority of graduates in most fields including 'medicine', 'accounting', 'business and management', and 'law and legal studies'.

## **3.3 Influence of women's age and ethnicity**

### **3.3.1 Influence of age**

While younger women have obtained higher qualifications at an increasing rate over the last generation, so too has a gender qualifications 'catch-up' for older women occurred. The cohort of women that was aged 30 to 49 years in 1986 has acquired qualifications at a much faster rate than men of the same age over the last 25 or so years. As a consequence, the qualifications of men and women in this cohort have become much more similar. New Zealand is unusual in this regard. Compared to adults in other OECD countries, New Zealanders are more likely to acquire qualifications at an age above the typical age for initial years of tertiary education.

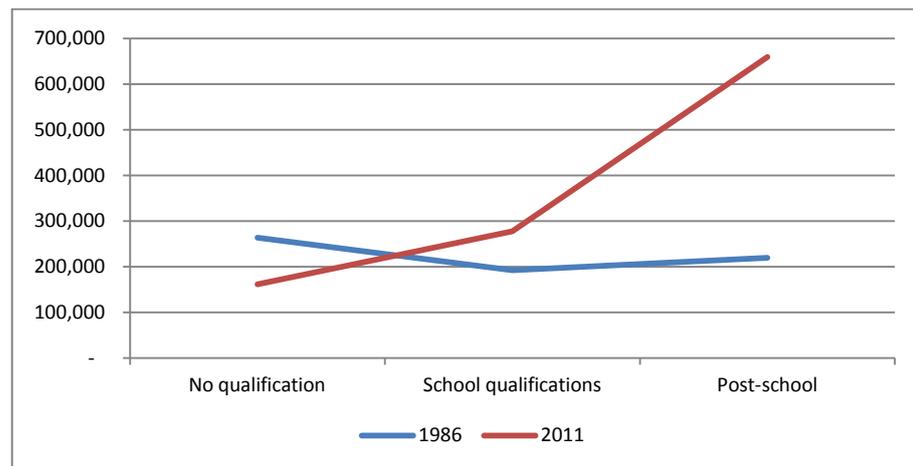
Despite the qualifications 'catch up' of older women that has been evident over the last generation, women aged 40 to 59 years today remain less likely than other women to hold university qualifications and more likely to hold no qualifications.

Even with women’s rapid attainment of higher qualifications over the past generation, a significant group of women with no or few qualifications persists: 24 percent of women aged 15 years and above had no qualifications in 2011, ranging from 12 percent of those aged 25 to 34 years, to 39 percent of those aged 55 years and above. This is a significant improvement from 25 years ago when 45 percent of all adult women had no qualifications. Alongside those with no qualifications, 51 percent of adult women (but only 19 percent of those aged 25 to 34 years) have school qualifications only as their highest qualification.

Fewer young women leave school today without a recognised qualification compared with previous decades, although 16 percent still do so (compared with 20 percent of young men). Efforts to make school more engaging for young students appear to be working. In 2002, 56 percent of Māori school-leavers of both genders had not attained NCEA Level 1 or above. By 2010, this had reduced by more than half, to 26 percent. The statistics for young Pacific school leavers without NCEA Level 1 fell over that period from 41 percent to 17 percent, and for young European school leavers from 28 to 10 percent.

### Figure 2 Qualifications of women in the workforce

Number of women in the workforce by highest qualification achieved.

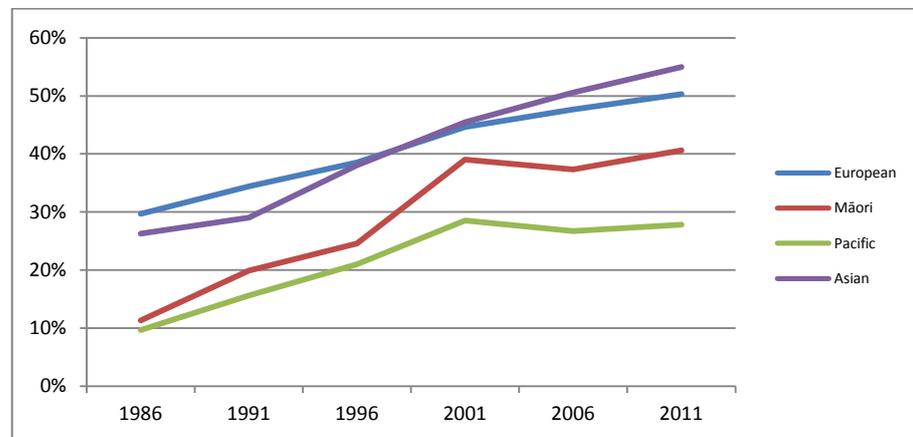


Source: HLFS, June 1986 to June 2011.

Figure 3 shows the proportion of women holding post-school qualifications, by ethnicity, since 1986. Currently, 50 percent of European women aged 15 years and over hold a post-school qualification, increasing by five percentage points from 45 percent ten years ago. By comparison, 41 percent of Māori women hold these qualifications, with an increase of only two percentage points over the last ten years.

### Figure 3 Ethnicity of women with post-school qualifications

Proportion of women aged 15 years and over with a post-school qualification, by ethnicity.



Source: HLFS, June 1986 to June 2011.

#### 3.3.2 Influence of ethnicity

Substantial qualifications differences continue to exist between women from different ethnic groups, despite women from all ethnicities showing advances compared with men from the same ethnicities. Māori and Pacific women are lagging behind other women with regard to proportions with post-school qualifications. For Māori women to catch up with European women, the rate of increase over the last ten years of Māori women with these qualifications will need to increase seven-fold over the next ten years. But the longer term trend is more positive.

Māori and Pacific women, while showing advances compared to men of the same ethnicity, have shown fewer gains than other women.

- Asian and European women are more likely than women of other ethnicities to have university qualifications as their highest qualification. In 2006, 32 percent of Asian women and 21 percent of European women, but only 10 percent of Māori women and seven percent of Pacific women held university qualifications
- Māori and Pacific women are more likely than other women to have no qualifications
- Pacific women are more likely than women of other ethnicities to obtain school qualifications only as their highest qualification.

### 3.4 Comparison with men

#### 3.4.1 Women compared with men

Women of working age are now more highly qualified than men and this disparity is likely to increase over time as older age groups leave the workforce and better-qualified younger generations enter. By 2006, for example, 75 percent of women and 75 percent of men had either a school or post-school qualification, with a higher proportion of women than men with a post-school qualification.

Women of all ethnic groups have, since the late 1990s, been acquiring qualifications at all levels in higher numbers than men, except for the occasional period in which Asian men acquired post-graduate qualifications (only) at a higher rate than Asian women.

Since the early 1990s, New Zealand women have been acquiring bachelor's degrees at an 80 percent higher rate than men, post-graduate degrees and undergraduate diplomas at a 50 percent higher rate, and lower level certificates at a 30 percent higher rate.

The proportion of men aged 20 to 59 years with no qualifications exceeded the proportion of women of that age with no qualifications by 1996. On the other hand, the proportion of women with university qualifications exceeded the proportion of men with those qualifications by 2006. Almost 25 percent of women aged 20 to 39 years had acquired university qualifications in 2006, while only 20 percent had no qualifications.

A higher proportion of young women in each age group and ethnic group are participating in tertiary education today, compared with young men.

### 3.4.2 Influence of ethnicity

Māori and Pacific women are much more likely than Māori and Pacific men to obtain school or post-school qualifications, and the differences in levels of qualifications attained are more pronounced between Māori and Pacific men and women than between men and women from other ethnic groups. Among those aged 20 to 59 years in 2006, for example, Māori, Pacific and European women were respectively, 50 percent, 33 percent and 18 percent more likely than men from the same ethnic groups to hold a bachelor's degree. Asian men and women were equally likely to hold a bachelor's degree.

## 3.5 Comparison with women from other countries

Over the last 30 years, across developed countries, the proportion of the adult population with university and other post-school qualifications has been growing rapidly. At the same time, earnings premiums for qualifications have remained stable indicating that the demand for post-school qualifications has been keeping pace with supply.

Evident across the OECD including New Zealand is the tendency for women to be strongly under-represented in engineering, manufacturing and construction, and strongly over-represented in the health and education fields of study. Nevertheless, New Zealand outperforms the United States, Canada, Australia and the United Kingdom with the proportion of its engineering, manufacturing and construction degrees awarded to women: around 30 percent in 2009. On the other hand, 80 percent of degrees in education and health were awarded to women in New Zealand in 2009. This is similar to Canada and the United States, but higher than in Australia and the United Kingdom.

While New Zealand's tertiary education levels are relatively high, it also has a relatively high proportion (about 27 percent) of young people of both genders aged 15 to 19 years not engaged in education. On this measure New Zealand ranks 5th highest in the OECD for 2009 (with only Turkey, Mexico, Brazil and Israel ranking higher). As with the average across the OECD, young women in New Zealand participate in formal education at roughly a three percentage point higher rate than young men in this age group.

The proportion of women in New Zealand today with tertiary qualifications is high by OECD standards. Out of all OECD countries, only Canada shows a higher proportion than New Zealand of women aged 25 to 64 years with a tertiary level qualification.

Across the OECD, there is a clear trend for women in younger cohorts to have increasingly higher educational attainment relative to men. New Zealand shares this trend, sitting at around the OECD average.

### 3.6 Drivers of change

The structure of developed economies has been changing, with a growth in the contribution of services (both high and low-skilled) to gross domestic product (GDP).

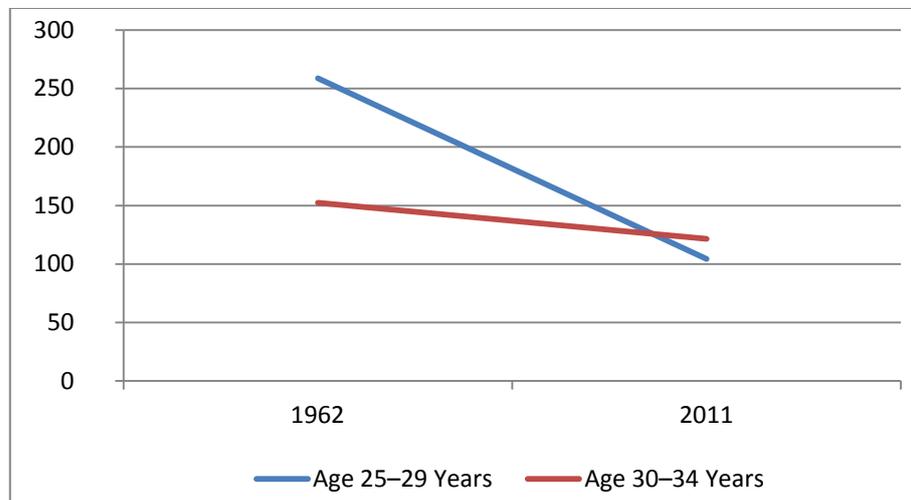
New Zealand's labour market is also operating in an environment of an ageing and shrinking workforce and stiff international competition for skilled labour. It is demanding women's labour. Women have responded to labour market signals with increased labour market participation and attainment of tertiary qualifications.

Changing societal norms and values have supported labour market changes. Government has responded with policy and regulatory settings that encourage and enable women and mothers to study and work, including paid and unpaid parental leave, the option of requesting flexible working arrangements, more accessible and affordable childcare, and financial incentives to work.

Contraception has also helped women plan or delay child bearing (or allowed the choice of not having children), thereby enabling more young women the opportunity to accumulate qualifications and work experience that is more similar to men's, if they wish. The median age at which women have their first child rose from 23 years to 28 years between the early 1960s when records began and 2011. Fertility rates in New Zealand have dropped significantly over that period, as shown in Figure 4.

**Figure 4 Fertility rates by age 1962 and 2011**

Number of live births per 1,000 women in each age group per year.



Source: Statistics New Zealand, Births and Deaths.

### 3.7 Slipping through the net

While the proportion of school-leavers without qualifications has reduced, the NEET rate (the proportion of young people aged 15 to 24 years who are 'not in employment, education or training') has increased over the last five years. For young men, the rate has increased significantly from about eight percent to 11.5 percent. For young women the rate has increased only marginally to reach 14.5 percent. This group encompassed about 38,000.

The New Zealand NEET rate (for both genders) in 2011 of 12.5 percent for 15 to 24 year olds was only slightly above the OECD country average and higher than Australia, but lower than the United Kingdom, United States, and Ireland (at a high 17.6 percent).

Today, young people who leave school without qualifications are highly over-represented in the NEET group. It has become more difficult to gain employment without qualifications.

### 3.8 Influences on the future

The decisions made by women themselves, or in the context of their family situations, and at various points over their life course, have significant impacts on their economic independence and their capacity to earn returns on their investment in education. This is illustrated in the appendix.

Younger cohorts of women are placing more emphasis on those decisions earlier in their life course, and may expect to achieve a higher lifetime income as a result. Their capacity to do so is supported by, and builds on, 30 years of changing social, labour law, and economic conditions in New Zealand.

Women responded to demands with increased labour market participation and attainment of tertiary qualifications. Tertiary qualifications, particularly bachelor's degrees and above, began to be, and continue to be, in demand.

Older women's choices of field of study will have shaped their subsequent work careers to a considerable extent. In today's labour market, however, fields of study do not necessarily translate into 'set-in-stone' career paths except in specific regulated areas (such as medicine, and some of the trades). Tertiary qualifications are expected to instil skills and approaches that are more or less transportable between generic occupations and industries. Training in some fields of study, however, is less likely to reap the returns associated with other fields of study.

The demand for labour with few qualifications has fallen and this trend is projected to continue.

Women with no qualifications are more likely than similarly qualified men to either not work or to work few hours per week and per annum, with lower annual and lifetime incomes as a result.

# 4. Skills and economic gain

## 4.1 Introduction

This section discusses the evidence of links between skill and economic gain. As noted, skills are difficult to measure directly. To overcome this measurement problem, the research used qualifications achieved and time in the workforce as proxy measures for skill levels.

Higher qualifications enable people to earn higher incomes relative to occupations that require lower skill levels and increase the opportunity cost of leisure. Simple economics suggests this premium will encourage people to substitute paid higher skilled employment for low or unpaid work and also reduce leisure time. The research discussed in this section considers the much harder question of how much additional higher paid work people will take-on in return for a higher income.

## 4.2 Link between qualifications and earnings

### 4.2.1 Qualifications and income potential

Bachelor's degrees are associated with a higher income than that earned by people with no school qualifications. These returns have been estimated in New Zealand at between 40 percent for men in 1981 and 67 percent for women in 1996. A study that updates this research using 2001 data shows similar results.

Women completing a bachelor's degree in 2003 earned, after one year, 75 percent more in median earnings than a women completing a level 1-3 certificate in that year. The comparable earnings premia for men was 45 percent. Some of the larger earning premia effect from qualifications for women compared to men is due to higher qualified women working longer hours and accumulating more hours of work compared with women with no qualifications, while men of all levels of qualification are more likely to work similar hours.

Higher levels of qualifications enable access to higher-skilled occupations. Women, particularly younger women, have increased their presence in higher-skilled occupations in the workforce over the past generation and are now on a par with men in employed positions in these occupations, as Table 2 demonstrates. This has been facilitated by the escalating propensity of women to acquire higher qualifications.

### 4.2.2 Qualifications and hours of work

Changes in women's employment rates by highest qualification can be observed between 1986 and 2011. While tertiary qualifications were correlated with participation in the labour force and hours of work in 1986, this interrelationship has become more apparent, as Table 1 shows:

- between 1986 and 2011, women with no qualifications were increasingly likely to be unemployed, work no hours, or to be 'not in the labour force'
- by 2011, women with a bachelor's degree or higher as their highest qualification were less likely to be 'not in the labour force' compared with 1986, and more likely to be employed full-time

- women with school-qualifications as their highest qualification became far less likely to work full-time and more likely to work part-time between 1986 and 2011.

### Table 1 Women’s qualification and employment status

Proportions of women aged 15 to 54 years, by their highest qualification, by employment status.

Highest qualification	Full-time employed		Employed 20-29 hours		Employed 1-19 hours	
	1986	2011	1986	2011	1986	2011
No qualification	36%	29%	8%	5%	11%	9%
School qualifications	44%	33%	7%	9%	14%	17%
Post-school /sub-degree qualifications	65%	49%	9%	12%	16%	12%
Bachelor’s degree or above	56%	60%	8%	8%	11%	12%
<b>Total</b>	44%	44%	8%	9%	12%	13%

Source: HLFS data June 1986 and June 2011.

## 4.3 Changes in return to skills

### 4.3.1 Returns to qualifications

Demand for, and acquisition of, higher qualifications have increased over the past generation across OECD countries including New Zealand. Women and men both receive significant earnings premia from gaining qualifications compared to not gaining qualifications. This premia has remained fairly constant over 25 years, and this indicates that higher levels of qualifications continue to be in demand, despite the enormous increase in the proportion of working age adults with higher qualifications.

### 4.3.2 Desegregation

Although desegregation has been occurring in higher-skilled, higher-paid occupations both in New Zealand and in other developed countries, a different pattern is evident for medium-skilled and lower-skilled occupations. Medium-skilled ‘clerical’ and lower-skilled ‘sales and service’ positions only show a small amount of desegregation since 1981. By comparison, medium-skilled jobs in the ‘trades’ and lower-skilled ‘blue collar’ jobs show increased gender segregation.

The Karmel and Maclachlan Index, used below, can be interpreted as the percentage of women (or men) who would have to move (with replacement – that is, they would have to change places) in order to achieve complete integration. Complete desegregation would be represented as 0.0 and complete segregation as 1.0.

**Table 2 Occupation Gender Segregation Indices**

Adjusted<sup>1</sup> Karmel and Maclachlan Occupation Gender Segregation Indices by Specified Occupational Groups. All Employed.

Occupation	NZSCO68 (306 3-digit Occupational Categories)				NZSCO95/99 (266 4-digit Occupational Unit Groups)		
	1981	1986	1991	1996a	1996b	2001	2006
Managerial	.290	.231	.196	.175	.142	.121	.116
Professional & Para-professional	.286	.270	.263	.264	.228	.213	.214
Clerical	.366	.385	.373	.377	.369	.356	.354
Sales & Services	.287	.264	.229	.204	.253	.238	.229
<b>Trades</b>	<b>.333</b>	<b>.339</b>	<b>.332</b>	<b>.336</b>	<b>.418</b>	<b>.414</b>	<b>.420</b>
Other Blue Collar Skilled & Unskilled	.232	.230	.229	.226	.233	.232	.242

Note 1: 'Adjusted' here means scaling the composition of employment by occupational group and gender in each year to a common base year, using the procedures referred to in Watts (2003).

Source: Census data 1981 to 2006.

This desegregation has been occurring at the same time as other changes. In particular, we have seen: the proportion of employed workers who are women increasing, and the distribution of employment across occupational groups changing (such as more managerial and professional jobs, fewer clerical positions, more service-related employment and so on). This analysis controls for these factors.

The occupations that are showing increasing gender desegregation as younger cohorts of men and women enter the labour market, are also those that are increasing their share of employment overall, particularly 'legislators, administrators and managers', 'professionals', and 'technicians and associate professionals'. Each of these has increased its overall employment share by two to three percentage points over the last 15 years. In comparison, all medium and low-skilled occupations except for 'service and sales' have decreased their share of employment over the same period.

The movement towards occupational gender desegregation in higher-skilled occupations will have improved women's economic position on average, particularly younger women's, relative to men's. For younger women with few or no qualifications, however, unless they are able to up-skill, they are in danger of being excluded from opportunities that enable economic independence and increased returns to employment.

## 4.4 Future demand for skills

### 4.4.1 What skills are likely to be important in future

Identifying skills that are most likely to be in demand and important for economic gain in the future, is a challenging task. To make the task more tractable we define the future as the next 10 years, and assume continuation of recent long run trends such as the relative growth in service occupations and representation of women in tertiary education. The key trends that are expected to continue are as follows:

- women continue to dominate growth in the workforce and achievement of tertiary qualifications. (Although this does not apply to all fields of study, women appear to be achieving higher qualifications in fields of study that will continue to boost an increase in their earning capacity)
- women's time in the workforce is likely to converge toward time spent in the workforce by men. (Women's decisions about child rearing will moderate the extent to which the increase in time spent in the workforce translates to an increase in earning potential)
- some groups of young women are ending their education early without achieving qualifications and are exposed to being trapped in low paid work or unemployment.

### 4.4.2 Tertiary qualifications and field of study

Tertiary qualifications are today expected to instil skills and approaches that are more or less transportable between some occupations and industries, except in specific regulated areas such as 'medicine' and some of the 'trades'. However, training in some fields of study is less likely to reap the returns associated with other fields of study. For example:

- young graduates with degrees in 'electrical engineering' and 'computer science' (dominated by men), for example, have been shown to achieve 44 percent and 36 percent, respectively, higher earnings in their first year in employment compared with a graduate with a degree in 'humanities'
- a degree in 'teaching' (an area dominated by women) has been found to give young graduates 27 percent higher earnings than a degree in humanities, reducing to 16 percent higher earnings by the third year of work.

Women continue to dominate the 'health' and 'education' areas of study. These two fields alone accounted for almost 19 percent of women graduates with degrees in 2006. Although girls and boys have comparable literacy scores in science and maths at age 15 years, and despite an increasing tertiary dominance across all fields of study, the science, technology, engineering and maths (STEM) tertiary subjects remain dominated by men.

### 4.4.3 Time in the workforce

Being employed for a similar number of hours per week as men, and taking less time out of the workforce during prime-aged years, matters. More similar gender work patterns result in opportunities that are more alike with respect to accumulating formal and informal skills, more comparable incomes and economic returns from similar skill sets, and more opportunities for leadership positions.

**Table 3 Average hours of work and income**

Average hours of work and income of working women aged 25-34 and 35-54 years, by highest qualification and by mothering and partnered status.

Work hours and income	Age	June 1997			June 2011		
		Single women	Single mothers	Partnered mothers	Single women	Single mothers	Partnered mothers
<b>No qualifications</b>							
Average hours of work	25-34	36.0	23.6	25.7	32.8	26.6	29.0
	35-54	36.9	23.7	30.2	38.0	26.2	28.2
Median weekly income	25-34	Sup	\$82.50	\$267.00	Sup	\$275.00	\$548.30
	35-54	\$384.00	\$160.00	\$280.00	\$659.20	\$361.40	\$480.00
<b>School qualifications</b>							
Average hours of work	25-34	30.5	23.5	25.8	36.5	33.5	25.9
	35-54	43.3	23.3	26.1	38.0	31.0	28.0
Median weekly income	25-34	\$535.00	\$277.00	\$291.00	\$636.00	\$540.00	\$383.60
	35-54	\$540.50	\$180.00	\$308.50	\$786.30	\$675.00	\$598.00
<b>Post-school / sub-degree qualifications</b>							
Average hours of work	25-34	43.7	26.4	25.8	32.8	24.5	27.8
	35-54	38.3	29.1	29.4	35.0	30.5	29.1
Median weekly income	25-34	\$550.00	\$243.80	\$319.50	\$959.00	\$500.00	\$560.00
	35-54	\$544.00	\$475.00	\$340.00	\$847.00	\$580.00	\$660.00
<b>Bachelor's degree and above</b>							
Average hours of work	25-34	41.8	29.0	32.3	42.4	38.8	29.8
	35-54	41.3	42.6	29.6	41.8	31.3	30.1
Median weekly income	25-34	Sup	Sup	\$383.00	\$880.00	Sup	\$843.90
	35-54	\$767.20	\$700.00	\$615.00	\$1,246.60	\$896.00	\$900.00

- Notes:
- (i) sampling errors are not provided
  - (ii) income relates to wages and salary only
  - (iii) single women refers to women in one-person households only
  - (iv) single mothers refers to women in one-parent households only with the youngest child aged under 15
  - (v) partnered mothers refers to women in two-parent households only with the youngest child aged under 15
  - (vi) women living in 'other households' (with or without children) are not included
  - (vii) average hours of work includes only those employed one or more hours per week
  - (viii) 'Sup' refers to cells with fewer than 1,000 people which have been suppressed by Statistics New Zealand.

Source: HLFS and New Zealand Income Survey data 1997 and 2011.

This conclusion is further supported by longitudinal research that analysed the subsequent earnings of New Zealand women and men who completed similar qualifications in 2003. Women's initial earnings advantage was found not to persist by the fourth year after the completion of their study.

Even after the prime-aged years of 25 to 34 years, women's use of their qualifications and their involvement in acquiring income and knowledge continues to depend on their partnered and mothering status, as shown in Table 3.

#### 4.4.4 Regional differences

Women's capacity to earn income also varies with the region in which they live. The region in which they live seems to interact with their mothering and partnering status and their levels of qualification. Regions with the most obvious clusters of difficulty for low-skilled women, especially those with children, are Northland, the Bay of Plenty and Gisborne/Hawkes Bay. Pockets of Auckland also show similar clusters of disadvantage. A disproportionate number of Māori women in these regions (and Pacific women in Auckland) are single parents, have low qualifications, and have few training options.

#### 4.4.5 At risk group

There are about 650,000 women aged 25 years and over with either no or only school qualifications, and they are less likely than other women to acquire an income. They are in danger of being excluded from opportunities for economic independence and increased returns that are available for women with higher levels of qualifications.

Women with no or few qualifications are more likely than similarly-qualified men to work part-time or not at all. If they are partnered, they are more likely than partnered similarly-qualified men to be out of the labour force altogether. Women with no or few qualifications are more likely than similarly-qualified men to be single parents (nearly 90 percent of the approximately 100,000 single parent beneficiaries are women) and often rely on a benefit for significant periods of time. All of these propensities result in women with no or few qualifications being less likely than similarly-qualified men to:

- have opportunities to up-skill through workforce development
- accumulate work experience and knowledge similar to men
- achieve similar economic returns
- weather life's economic shocks.

# 5. Economic status

## 5.1 Changes in returns to skills and income

As younger cohorts of men and women have become similarly qualified, their hourly rates of pay have become more similar. For much of the last decade, the gap between the median hourly earnings of men and women aged 25 to 29 years has narrowed and, in some years, reversed in women's favour.

Higher qualifications increase the likelihood that women will work, accumulate more work experience (a key component of 'skills'), work in a job that is less gender segregated, potentially attain higher levels of seniority, and receive higher incomes on an hourly and annual basis and over their lifetimes.

Recent analysis across Census data from 1996 to 2006 has found that, on average, women post-school graduates aged 18 to 45 years receive around 41 percent less annual income than men. This estimated gap falls to around 25 percent when only graduates who are full-time employed are considered. It falls further to 19 percent when other differences such as age, industry and occupation and whether someone is working in the field for which they have trained are controlled for.

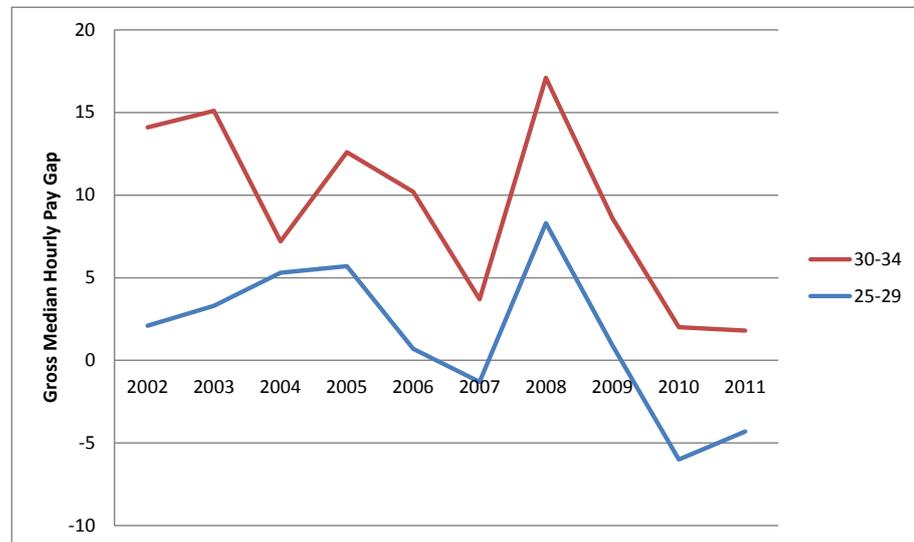
This is consistent with findings from research using New Zealand firms and worker data from 2005 and 2009. That research reports a gender gap in average annual wages of 24 percent, controlling for worker age and tenure, as well as firm and industry characteristics. Firms with longer tenure workers were found to generally pay more.

The gender gap in median annual income of around 19 percent in 2006 (and the gap in average annual wages of 24 percent across the period 2005 to 2009) may be compared with the gender gap in median hourly wages estimated at around 12 percent in 2006 (and 9.6 percent in June 2011). It is evident from this that women working full-time are still working fewer hours per week and fewer weeks per year on average than men who work full-time, otherwise the gender gap in annual income or wages for full-time workers would be more similar to the gap in hourly earnings.

The following chart suggests the gap in median earnings fluctuates widely but has been trending downwards over the last 10 years.

**Figure 5 Gender pay gap for women aged 24 to 35 years**

Median hourly earnings 2002 to 2011.



Source: New Zealand Income Survey.

## 5.2 Influence of women's age and ethnicity

### 5.2.1 Order of importance

In our view research suggests that age, level of qualification and ethnicity in that order are the main drivers of the relative change in women's economic status over the past 25 to 30 years.

### 5.2.2 Age is the main driver of change

The age of women is the main differentiator of the earning power of women. Each age cohort enters the workforce with what appears to be:

- on average higher levels of qualifications and expectation
- greater likelihood of remaining in the workforce for longer than the previous cohorts.

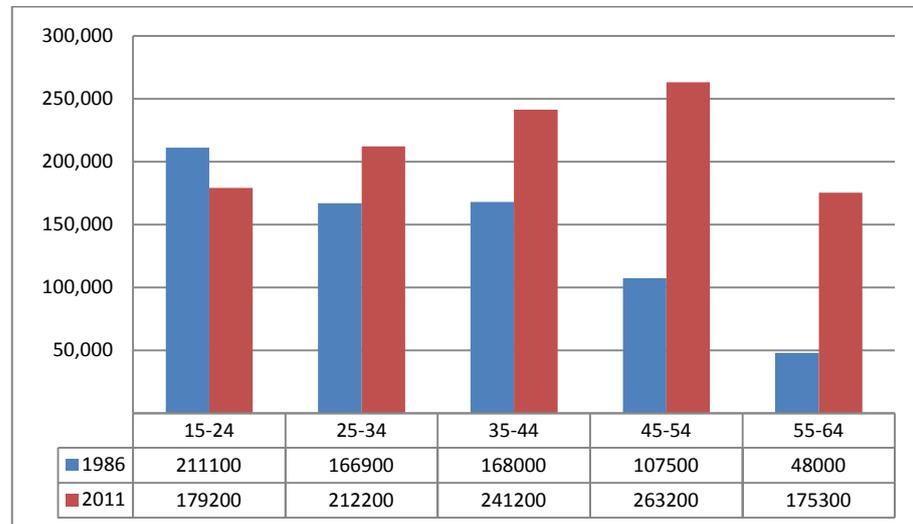
Younger cohorts of women have successively shown increased employment rates, increased average hours of work, and increased levels of qualifications. Women aged 25 to 34 years today make up 47 percent of all workers in this age range, for example. Women in this cohort are far more likely to work today than earlier generations, while men of this age group are slightly less likely to.

However, women have also changed their participation in the workforce as they have aged. This can be illustrated with a rough "back of the envelope" analysis of the following labour participation analysis chart.

According to the chart, the number of women working increased over the past 25 years from 702,000 in 1986 to 1,069,000 in 2011, an increase of 367,000. Just over two-thirds of this increase is likely to be linked to the entry of new cohorts of young workers into the workforce. However, the remaining increase of about 120,000 is likely to be due to changes in the participation of women in the workforce as they age.

**Figure 6 Women’s labour force participation by age cohort**

Comparison of participation (numbers of women in the labour force).



Source: HLFS, December 1986 and December 2011.

Allowing for ageing and assuming that no women who were in the workforce in 1986 left the workforce for any reason other than retirement, the contribution of the 1986 workforce cohort aged 15 to 39 years to the 2011 workforce cohort aged 40 to 64 years would, at most, be about 462,000 women. However, the number of women in the cohort aged 40 to 64 years is 557,000, almost 100,000 larger than the expected maximum from natural ageing of the population. Therefore, this increase suggests a change in the attitude to workforce participation of women aged 15 to 39 not in the workforce in 1986.

### 5.2.3 Lack of qualifications

Women with no or few qualifications are not experiencing the economic advantages that are evident for women with higher levels of qualifications, or even for men with similar low levels of qualifications. Women with no qualifications are more likely than similarly qualified men to either not work or to work few hours per week and per annum, with lower annual and lifetime incomes as a result.

There is a group of unskilled women aged 15 to 24 years of age that is disengaged from any sort of education, training or employment, and this group is larger numerically than the group of disengaged men of the same age. The vast majority (73 percent) of this group are aged 20 to 24 years. Of women aged 20 to 24 years who are NEET, just over half (nearly 17,000) are classified as 'caregiving', compared with just over 1,000 NEET men of this age. Far fewer 15 to 19 year old women than men are NEET (12,000 compared with 16,000).

### 5.2.4 Ethnicity

Women from different ethnic groups also fare differently. Of women with a bachelor's degree or higher, Māori are more likely than other women, at 62 percent, to be working full-time. Conversely, of women with no qualifications, Māori are more likely than other women, at 65 percent, to be either out of the labour force, unemployed, or working no hours.

Occupational differences for women from different ethnic groups reflect differences in both levels of qualifications and fields of study. While women of all ethnicities are either more highly qualified than, or similarly qualified to, men of those same ethnicities, European and Asian women are more likely than other women to have post-school and degree qualifications. They are also more likely than Pacific and Māori women to complete a post-school qualification in subjects more favoured by male students such as 'natural and physical sciences', 'engineering', and 'agriculture and environmental studies'.

European and Asian women are more likely than other women to be employed in higher-skilled, higher-paid positions, while Māori and Pacific women remain more likely than other women to be employed in lower-skilled, lower-paid positions.

The economic rate of return for Māori of acquiring higher qualifications, compared with obtaining no qualification, is higher than the rate of return for Europeans. This is because Māori tend to earn less than other most other ethnicities when they have no qualifications.

Returns for a qualification for Māori (that is, the income received by those with a qualification compared with the income received by those without a qualification) are higher for Māori than for non-Māori, as unskilled Māori incomes are lower than unskilled people of other ethnicities.

Women with few or no qualifications continue, even in the younger aged cohorts, to be more likely to be Māori and Pacific. Young Māori and Pacific women are also more at risk than other women of becoming classified as NEET.

## 5.3 Comparison with men

### 5.3.1 Gender composition of the workforce

Thirty years ago, only 46 percent of women worked. This has changed considerably as more women have obtained qualifications, and labour market demands have shifted. Nevertheless, men continue to be more likely than women to be employed (70 percent compared with 58 percent of women), as well as being more likely to work full-time (88 percent compared with 65 percent of women). These rates differ by ethnicity, too, with 59 percent of European women, 49 percent of Māori women, and only 45 percent of Pacific women employed in mid-2011.

Given their greater propensity to work, men have more opportunities than women, in general, to accumulate work experience (knowledge) and non-cognitive skills, as well as to access formal workforce development.

When comparing the likelihood of men and women to work, those with higher levels of achievement have more similar work patterns. Of men and women with post-school qualifications, 80 percent of men and 71 percent of women are employed. By comparison, of those with no qualifications, 51 percent of men and only 35 percent of women work.

Among post-school graduates working full-time – and after controlling for differences in age, industry and occupation, and whether someone is working in-field, but not controlling for actual hours of work over 30 per week – European, Māori and Pacific men have the highest annual incomes, in that order. This is followed by European women, with Māori and Pacific women and 'Other' men having similar income levels. 'Other' women have the lowest income levels.

### 5.3.2 Convergence in occupation

Significant movement towards occupational convergence has occurred across all ethnic groups of women over the past generation. However, even in higher-skilled occupations, women tend to concentrate in areas that are less likely to lead into senior management roles than those in which men concentrate. Younger women are beginning to show gains in this regard, however, hovering at around 50 percent of managerial positions in areas such as 'finance' and 'supply and distribution', as well as in those areas more traditionally dominated by women such as 'office managers'.

The movement towards occupational gender desegregation in higher-skilled occupations will have improved women's economic position on average, particularly younger women's, relative to men's. For younger women with few or no qualifications, however, unless they are able to up-skill, they are in danger of being excluded from opportunities that enable economic independence and increased returns.

### 5.3.3 Convergence in business ownership

Women also, continue to be under-represented in statistics on business ownership. Small and medium-sized enterprises or SMEs<sup>3</sup> are an important part of New Zealand's labour market. They account for 97 percent of all our businesses; 31 percent of all employees; and 40 percent of the economy's total output on a value-added basis – a contribution to GDP. Women make up only about a third of self-employed people.

Where women are involved in self-employment opportunities in New Zealand, they can be highly successful. A higher proportion of businesses owned by self-employed women in 2009 survived into 2010 compared with those owned by self-employed men, for example, and Māori women have the world's third highest entrepreneurial rate.

### 5.3.4 Child rearing – a major difference

Unlike men, women's involvement in acquiring an income differs not only according to the level of their qualifications, but also according to whether they are a parent or not, and whether they are partnered. This means that the more linear equation that links men's levels of qualifications with employment, the accumulation of knowledge and skills, and specific economic returns does not always apply to women.

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<sup>3</sup> SMEs are defined as businesses with fewer than 20 employees (including no employees): 90 percent employ five or fewer employees; 69 percent have no employees.

### Table 4 Effect of children on women’s employment status

Proportions of women aged 15 to 54 years with and without children by employment status.

Employment status	1986	2011
Childless women working	75%	75%
Women with child(ren) under age 15, working	54%	56%
Childless women working full-time	61%	55%
Women with child(ren) under age 15, working full-time	29%	32%
Childless women working part-time	14%	20%
Women with child(ren) under age 15, working part-time	25%	24%

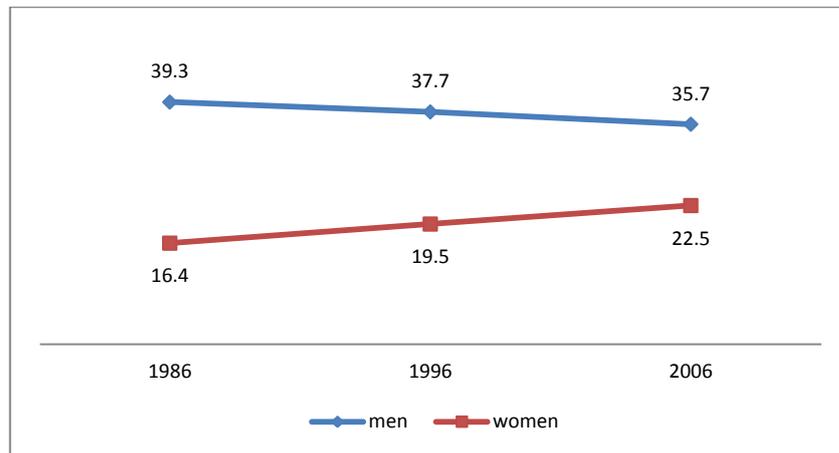
Source: HLFS data 1986 and 2011.

For men and women who do work, the accumulation of work experience over their life course has, on average, increased for women and decreased for men over the last generation. If the trends illustrated in Figure 7 continued men and women would be expected to spend about the same amount of time in the workforce within 20 years.

The convergence is most pronounced for younger age groups. However, the research is unclear on how the gap in years of full-time work changes as men and women age. The data in Table 4 suggests that the effect of having children on women’s employment rates has not altered materially over the last 20 years.

### Figure 7 Accumulated years of full-time work

Accumulated years of full-time work, on average, for men and women at age 55 to 59 years, as at 1986, 1996 and 2006.



Source: Estimates based on Census data.

## 5.4 Comparison with women from other countries

The proportion of women in New Zealand with tertiary qualifications is high by OECD standards. Out of all OECD countries, only Canada shows a higher proportion than New Zealand of women aged 25 to 64 with a tertiary level qualification.

International comparisons show that large gender differences, on average, can be observed in the chosen field of study in tertiary education across countries. The gender gap in the proportion of degrees awarded in mathematics and computer science implies that, in all OECD countries, men account for the majority of degrees awarded in these subjects; women in turn account for the vast majority of graduates in the arts and humanities. While this is true too in New Zealand, it still out-performs Australia, the United States, the United Kingdom, and the OECD average, in this respect.<sup>4</sup>

An increase in women's labour force participation has been observed in all developed countries, mirroring the significant increases in New Zealand. Nevertheless, New Zealand's result is high: ranked 9th out of 38 OECD countries in 2009. Countries with a higher female labour force participation rate were identified as Canada and the Nordic countries.

The overall employment rate of women in New Zealand is also high compared with many other OECD countries: it was 10th out of 38 countries in 2009, for example. Compared with other OECD countries, however, the full-time employment of women in New Zealand is lower than its overall employment rate: New Zealand scores 12th out of 31 countries on this measure.

New Zealand's gender pay gap has been reducing and is now low by OECD standards. New Zealand has the third lowest gender pay gap in the OECD, measured as median annual earnings of full-time employees.

The gender pay gap has become larger among higher-paid men and women than among the lower-paid men and women in New Zealand since the 1980s. This was because there were reductions in men's real earnings for those that were lower-paid during the 1980s and early 1990s (making them similar to women's earnings at this level), while higher-paid male workers experienced sizeable increases. This is true across OECD countries.

## 5.5 Drivers of change

Changes in the labour market – a shift to service based occupations, an ageing workforce and stiff international competition for skilled labour – have increased demand for skilled workers. Women have responded to this demand by increasing their participation in the labour market and increasing their rate of attainment of tertiary qualifications.

Changing societal norms and values and policy and regulatory settings have enabled and encouraged women and mothers to study and work. Contraception has enabled more young women to delay child bearing and take the opportunity to accumulate qualifications and work experience that is more similar to men's, if they wish. A recent US study<sup>5</sup> has found that the Pill accounts for 10 percent of the convergence of the gender wage gap in the US in the 1980s and 30 percent in the 1990s, enabling women to delay their childbearing, have fewer children, and work more hours.

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<sup>4</sup> OECD, 'Report on the Gender Initiative: Gender Equality in Education, Employment and Entrepreneurship', Meeting of the OECD Council at Ministerial Level, Paris, (25-26 May 2011).

<sup>5</sup> 'The Opt-In Revolution? Contraception and the Gender Gap in Wages' Martha J. Bailey, Brad Hershbein, Amalia R. Miller, NBER Working Paper No. 17922, issued in March 2012.

## 5.6 Impediments to change

Despite the changes listed above, the drivers of the persistence of the gap between men and women for both time in the workforce and earnings and the disproportionate representation of women in the NEET group are not well understood. These drivers are not well understood either in terms of their relative strength at a given point, how they are changing for women as a group over time and how they change for a cohort of women as those women age.

## 5.7 Influences on the future

The next generation of women is likely to continue to be more skilled than men. The rate of that movement towards enhanced labour market performance, however, is slowing and has made less impact in some areas than in others. Left alone, the observed movement towards enhanced labour market performance on many fronts is likely to continue, albeit at a slow pace.

Young women who acquire no or few qualifications are likely to experience shrinking access to jobs, low pay, and few employer-funded opportunities for up skilling. This is more likely to be the experience of young Māori and Pacific women than other young women, unless efforts are intensified to lift Māori and Pacific qualification levels before leaving school.

# 6. Suggested research

## 6.1 Introduction

The purpose of this section is to suggest areas of further research to answer questions raised by the work already done and extend insights from the research base of this report so that they can better inform potential policy prescriptions. We suggest the following topics:

- longitudinal analysis of the career progression of cohorts of women
- persistence and sustainability of recent trends in qualifications and time in the workforce
- drivers of choice of occupation and qualifications
- changes in social pressures and expectations about the allocation of income and childcare responsibilities within the household
- intervention points and strategies to encourage women who have left the workforce to re-enter the workforce.

## 6.2 Women's career progression

The trends described in the research are based on the comparison of census based data snapshots to look at changes in qualifications, time in the workforce and earnings over the whole working age population. The insights gained from this approach could be extended by tracking the change in qualifications, workforce hours and earnings of particular age cohorts as they moved through each census. These changes would give an indication of what insights could be gained from a longitudinal study of women in the workforce and how this could provide insights into the application of the framework illustrated in the appendix.

## 6.3 Will recent trends continue?

Key trends presented in the research such as the increase in the level of qualifications achieved by women and convergence of time in the workforce between men and women are based on a small number of data points and reflect the gradual response to major changes in societal attitudes over the last 30 to 40 years. Also, they are the result of 'flows' that are large compared to the population of working age people. These flows produce rapid changes in the stock only as long as the characteristics of the inflows and outflows of working age people are markedly different from each other and from the average level of the 'stock'.

To answer questions about the likelihood of acceleration, deceleration or continuation of the trends identified in the research it would be useful to understand better the relative strength and persistence of drivers for change. A starting point would be to consider the following:

- What are the main changes in societal attitudes that have encouraged more women to seek higher qualifications and spend longer in the workforce with respect to the following:
  - What is their relative significance for the trends found by the research?

- Are these attitudes still changing and if so, how, in what direction and how quickly?
- How different are the qualifications and expectations of workers entering the workforce from either the average of the population or those leaving the workforce?
- How do the work attitudes and expectations of workers entering the workforce change after 5 to 10 years in the workforce?

The importance of answering these questions is underlined by a recent United Kingdom study<sup>6</sup> on income tax credits that suggests the following:

- closure of the United Kingdom pay gap in recent years has been due to a modest rise in women's wages while men's wages have flat lined
- the pay gap between mothers and fathers has closed much faster than the pay gap between men and women. Mothers' wages have risen faster than those of other women while fathers' wages have risen more slowly than those of other men.

## 6.4 Choosing courses and work

The research analyses both the choice of field of study and the 'in-field premium' that is earned by holders of qualifications. This analysis could be extended by considering the following:

- what prompts people to study for a particular qualification
- what is the likelihood that they are employed in the field they have studied after they achieve the qualification
- what is the likelihood that they will work in another field and/or complete another qualification.

This analysis also provides an alternative way of thinking about the problem of skill measurement. The research relies heavily on qualifications as a proxy for skills. However, it may not be necessary to attempt to measure 'skills'. Workers have a stock of capabilities that they apply to performing tasks in exchange for wages – skills do not directly produce output and a worker will not use all their skills all the time to complete work tasks. Therefore, it may be more useful to analyse the correlation between qualifications and occupations and income levels and put the measurement of skills to one side.<sup>7</sup>

## 6.5 Allocating work and childcare

The research indicates that women's decision to have children is a key determinant of their participation in the workforce and whether or not they have a partner has a much weaker influence on their decision to participate in the workforce. Comparing this finding to the convergence between average incomes earned by men and women and the

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<sup>6</sup> The comments in this report are based on the article 'Squeezed Middle, Solving the pay gap the wrong way' by Gavin Kelly, *New Statesman*, 13 August 2012. This article summarises the following report: 'Creditworthy: Assessing the impact of tax credits in the last decade and considering what this means for Universal Credit', by Paul Gregg, Alex Hurrell and Matthew Whittaker, available from <http://www.resolutionfoundation.org/media/media/downloads/Creditworthy.pdf>.

<sup>7</sup> This concept is drawn from an article by Daron Acemoglu and David Autor 'What Does Human Capital Do? A Review of Goldin and Katz's *The Race Between Education and Technology*', *Journal of Economic Literature* 2012, 50:2, 462-463.

evidence that time in the workforce is a key determinant of the ability to increase income suggests several interesting lines of enquiry as follows:

- what factors do mothers consider in choosing how long they will withdraw from the workforce after having children
- for couples to what extent is the decision of which adult will provide childcare at home driven by differences in earning capacity, reliability of employment, etc
- when do adults that provide at-home childcare return to the workforce, on what employment arrangement and how does this compare to their employment arrangements before providing at-home childcare.

## 6.6 Starting or returning to work

The research has identified that the group 'not in education, employment or training' (NEET) is growing and that young women are over-represented in this group often because they have had children at a young age. Other findings in the research implied that the employability of this group declines over time. This suggests the following questions for further research:

- How quickly is the size of this group growing?
- What drives the length of time women remain in this group?
- What extra barriers to gaining employment do women in this group face?
- What other policy interventions (such as Welfare Reform) are influencing the decisions of women in this group to seek work?

## 6.7 Recasting the ethnicity story

The research comments on the link between ethnicity and indicators of earning capacity to assess if and how ethnicity affects earning capacity. However, in our view this approach has the following limitations:

- ethnicity is defined by a loosely defined ethnic group with which Census respondents subjectively identify
- ethnic definitions are not closely linked to a set of characteristics that determine earning capacity.

The ethnicity analysis could be enriched by treating ethnicity as an affiliation and considering ethnicity along-side other questions that are likely to be more directly linked to earning capacity such as:

- length of residence in New Zealand and country of origin
- foreign qualifications (and recognition in New Zealand)
- languages that are read/spoken and in what context e.g. work, home, socially.

## 6.8 Summary

The above suggestions for further research are all designed to improve understanding of women's 'employment' decision-making as outlined in the framework in the appendix. The research completed to date used the framework in the appendix as a way to organise the topics and data that was analysed. However, the research to date compared snapshots of

the population to identify key differences across groups and changes in populations over time. This research can be extended by using the framework to think about:

- how cohorts of younger workers appear to be approaching decisions about gaining qualifications working and providing childcare
- how the approach taken by younger workers appears to be different to the approach taken by older workers
- what momentum these differences in decision-making will create for changes in women's earning capacity in the future.
- what groups of women are in danger of being trapped with low earning capacity and if and when their earning capacity can be boosted by policy intervention
- how ethnicity could be linked to characteristics that are more directly related to earning capacity.

# Appendix: Decision-making flow chart

Figure 8 Decision-Making Points during a Woman's Life Course (and Influenced by Policies and Markets) that Influence their Capacity to Receive Economic Returns from their Skills

