Young, skilled workers and their importance to the economy in the context of ageing populations

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Introduction

Population ageing is a key policy issue of the 21st century, however, most of the focus of research on population ageing has been upon the health costs of older people and upon their income needs and the ways in which these costs can be met. As the key issue is the relative age of the population rather than the number of older people, policy has also addressed ways in which the labor supply can be increased so that the ratio of dependent older people to the working population can be kept as low as possible. In the longer term, this can be achieved though increases in fertility but in the shorter term, the two means available are increases in immigration and labor force participation rates. McDonald and Kippen (2001) have shown that there is considerable scope in many countries to increase labor force participation. However, the main opportunities lie in increasing the participation rates of middle-aged women and older men. Family-friendly workplace policies and reversal of the trend towards early retirement can achieve these ends. Some countries, such as Australia, are now aggressively pursuing policies that will increase participation.

The efficacy of the approach of increasing participation is contingent upon the scope for increase, that is, upon how low participation rates are at present. However, it is also contingent upon the assumption that an older worker induced not to retire early is a substitute for a younger worker. Because the relative fall in labor supply stems from falls in fertility, falls in labor supply in the future are very heavily concentrated at the young end of the labor market (under 40 years). McDonald and Kippen (2001) have estimated that, over the next 50 years, Japan's labour supply would fall by 20 million and Italy and Germany's by 11 million if their demography and labour force participation rates of the late 1990s were to continue unchanged. Almost all of the projected fall in labor supply is among younger workers. If younger workers and older workers are not substitutes for each other, then a labor supply problem may remain even though participation rates at older ages increase. At the very least, there will be

an adjustment problem. Because fertility has been higher in the past, especially during the baby-boom period, the size and organization of most advanced economies have become contingent upon a growing supply of young workers. If there is a sudden fall in the availability of young workers, as will be the case in many countries in the immediate future in the absence of large-scale immigration, the economic adjustment required could be considerable. Replacement of younger workers by older workers implies that employers are able to overcome their preferences for younger workers in many jobs. It also implies that older workers induced not to retire are or can be skilled to the level of the missing younger workers. Lifelong learning is promoted as a means of achieving this end but can it provide a substitute for young skilled workers?

Some argue that aging is not a problem because labour shortages will provide a stimulus to technological development and to higher productivity resulting from increases in capital per worker (Kosai et al. 1998; Dowrick 2002). However, this argument implies that there are sufficient adequately skilled workers to develop and implement the new technologies. If this is not the case, because technology is readily transportable, capital may flow to economies that have an ample supply of skilled workers. Emerging economies today have an abundant supply of highly skilled young workers available at lower wages than apply in the older advanced countries. The key to economic competitiveness in the future, as many writers have argued, will rest upon a country's capacity to produce and maintain highly skilled workers. Carlsson (2003) has made the observation that 80 per cent of technology becomes obsolete within ten years while 80 per cent of the work force gained its qualifications more than 10 years ago. Young, recently-trained workers have been the conventional way that economies have met this labor demand. If lifelong learning cannot bring older workers to the technological standard of recent young graduates, economies must look to ways to increase the numbers of young skilled workers. This can be done by increased investment in the education of young people or by increasing the population through immigration in the short term or fertility in the long term.

We argue in this paper that a sharp fall in the supply of young skilled workers puts a country's international competitiveness at considerable risk. Hatton and Williamson (1998) attributed successful economic growth in the New World countries in the 19th century to the dynamism and youthfulness of their labor forces. The Japanese

economy has been described as having a 'demographic malaise' because of the projected fall in the supply of young workers. We argue that as economies have become more heavily dependent upon new technology, the association between dynamism and the age of the labor force has increased. The argument can be made that, in each wave of technology, it is young workers who assimilate new technology playing a role that is complementary to older workers.

Age and productivity

There is evidence for the significance of young skilled workers in the cognitive psychology literature (Hunt 1995, Douchemane and Fontaine 2003). This literature identifies two types of intelligence:

> Fluid intelligence: the ability to develop new techniques for the solution of problems that are complex and unusual.

> Crystallized intelligence: the ability to bring previously acquired problem-solving methods to bear on a current problem.

Testing has shown that fluid intelligence is highly associated with age with decline setting in rapidly from age 40 onwards. Complexity is said to be the underlying characteristic that determines the relationship with age. It is no accident that Nobel Prize winners in Physics, Chemistry, Medicine and Economics were almost all under the age of 40 when they did the work for which they received their prize (Jones 2005). Many were graduate students. On the other hand, crystallized intelligence falls only slowly with age.

In the economic-demographic literature, Skirbekk (2003) has recently shown a strong association of productivity with age. Rejecting the wage rate as a reliable measure of productivity, he uses supervisors' ratings, work-sample tests, analyses of employer-employee datasets and other approaches to estimate how individual productivity varies by age. He emphasizes cognitive ability in his approach. He concludes:

> Productivity reductions at older ages are particularly strong for work tasks where problem solving, learning and speed are needed, while in jobs where

experience and verbal abilities are important, older individuals maintain a relatively high productivity level (Skirbekk 2003: 2).

These findings correspond neatly with the findings of the cognitive psychology literature. Based on this literature, we postulate that productivity will be at its highest through the combination of young workers applying fluid intelligence with older workers applying crystallized intelligence. Both are important but one is much less efficient without the other. In today's demography, the deficit group is likely to be the former, that is, young people with high fluid intelligence

The arguments that we make in this paper have been made by others in other forms. For example, Robert Reich (1992) identified the future dependency of economies on large numbers of 'symbolic analysts', who, in the main, are highly-trained young people. The same argument has been popularized by Richard Florida (2002, 2005a, 2005b). Florida refers to the 'creative class' and the importance of their rise to prominence. The creative class makes up about 30 per cent of the US labor force and consists of two groups: the super-creative core (computer and mathematical occupations, architecture and engineering occupations, life, physical and social science occupations, education, training and library occupations, arts, design, entertainment, sports and media occupations) and creative professionals (management occupations, business and financial operations, legal occupations, healthcare practitioners and technical occupations and high-end sales and sale management). Florida's creative class bears a strong resemblance to Reich's symbolic analysts.

Complex problem solvers
In this paper, we focus attention upon skilled workers who are at the forefront of complex problem solving. Our emphasis deviates from that of Florida who is concerned with deriving indexes that can be applied to places. He attempts to identify dynamic cities and regions. This justifies the inclusion in his classification of high-paid, service workers (medical and legal workers) and those employed in entertainment and the arts. Working at the national level, we are more concerned with those who directly contribute to substantial increases in a nation's economic productivity, the complex problem-solvers. The group that we have identified represented about 10 per cent of the Australian labor force in 2001. We do not wish to

refer to this group as a 'class' because it is their integration into the rest of the labor force that is important, not their separateness. Also, although many may be relatively highly paid for their age, the continued association of age with experience means that they will not necessarily be the highest paid workers in the labor force (Skirbekk 2003). However, we can postulate that they will be working with the highest paid workers in the economy, that is, in the same firms and industries. Thus, we refer to them simply as complex problem solvers (CPS). We define them using a demand variable, the detailed occupation classification of employed workers. However, we examine their supply through the variables of age, sex and type of qualification.

Data and Method

As our definition of Complex Problem Solvers (CPS) is very detailed, fine level occupation and educational data are required with sufficient sample size to disaggregate by age, sex and immigration status. The only available Australian data with such detailed information is the 2001 full count Australian census, collected by the Australian Bureau of Statistics (ABS). The detailed occupation and education categories used are shown in Appendix 1.

In addition to the 2001 Census, Estimated Resident Population (ERP) data along with ABS collections of deaths and births are used to estimate the age sex profiles of fertility and mortality in 2001.

Informed by our conceptual model and working with the 2001 Census, we define the following:

EQR_{ijk} the employed with recent (<10 years) appropriate skills, of sex i, age j and qualification k;

a_{ijk} the population with recent appropriate qualifications, employed;

b_{ijk} the population with recent appropriate qualifications;

c_{ijk} the population with appropriate qualifications;

P_{ij}^{C} the population estimate from the census.

P_{ij}^{E} the population estimate from the Estimated Resident Population data.

For the full labour force population, the total population of those employed with recent qualifications is given by:

$$\sum_{i=1}^{2} \sum_{j=20-24}^{70-75} \sum_{k=1}^{9} EQR_{ijk} \qquad [1]$$

Decomposing the terms we can write, for each i, j and k:

$$EQR_{ijk} = \left[\lambda_{ij} \left(\alpha_{ijk} . \beta_{ijk} . \gamma_{ijk} \right) \right] \times P_{ij}^{E} \qquad [2]$$

given:

$$\alpha_{ijk} = \frac{a_{ijk}}{b_{ijk}}$$

$$\beta_{ijk} = \frac{b_{ijk}}{c_{ijk}}$$

$$\gamma_{ijk} = \frac{c_{ijk}}{P_{ijk}^{C}}$$

λ_{ij}, an ancillary parameter used to adjust for census undercount.

Equation [2] presents the supply of the qualified population, which is modeled as a function of α, β and γ. The supply of the qualified population is distributed into those employed in CPS occupations by:

$$\left[\lambda_{ij} \left(\alpha_{ijk} . \beta_{ijk} . \gamma_{ijk} \right) \right] \times P_{ij}^{E} \left| K \right| \qquad [3]$$

Where K is a column vector of probabilities that measure the distribution of the employed and qualified population into seven occupation categories. A summary measure of K, δ is included in the discussion section. This summary measure is the ratio of CPS to EQR for each age, sex and qualification category.

At this point, the projection that treats alpha, beta and gamma as exogenous is straight forward, as defined by Equation [4]

$$\left[\lambda_{ij} \left(\alpha_{ijk} . \beta_{ijk} . \gamma_{ijk} \right) \right] \times P_{i,j+1} \times K \qquad \qquad [4]$$

Given:

$$P(i,j+1,y+1) = [P(i,j,y)][s(i,j,y)][1+m(i,j,y)], j \geq 0,$$

$$P(i,0,y+1)$$
$$= \frac{SR(i)}{2} \left\{ \sum_{j=15}^{49} [b(j,y)P(f,j,y)] + \sum_{j=15}^{49} [b(j,y+1)A(f,j,y+1)] \right\} [s(i,birth,y)][m(i,birth,y)]$$

where:

$A(i,j,y)$ is the population of sex i aged j in year y,

$A(f,j,y)$ is the female population aged j in year y,

$b(j,y)$ is the fertility rate at age j in year y,

$m(i,j,y)$ is the migration ratio for sex i; that is, the factor by which a cohort changes through migration in its transition from age j in year y to age j+1 in year y+1,

$s(i,j,y)$ is the mortality survival ratio for sex g; that is, the probability that a person aged j in year y will survive to age j+1 in year y+1, and

$SR(i)$ is the proportion of births that are of sex i.

At this stage, the underlying demography b(j, y), m(i, j, y) and s(i, j, y) and other supply side variables, α, β and γ can be altered to simulate changes to those qualified and employed in each occupation. For the purposed of the current exercise, α, β and γ are held constant and the projected number of EQR and CPS are estimated given variations in births and migration. Given the very low level of labour force participation in advanced old age (>75), we consider one mortality assumption.

Four models are estimated to simulate the effect of the underlying demography on the numbers in CPS and EQR categories (Table 7). Model 1, the low fertility scenario,

linearly reduces fertility from 1.8 in 2001 to 1.36 in 2021 and remaining at this level till 2051. Model 2, the zero migration scenario, holds fertility constant while reducing Annual Net Migration (ANM) to zero throughout the projection period. Model 3, the continuation scenario, holds fertility and ANM constant throughout the projection period. Finally, Model 4, the high migration scenario, increases ANM from 110,000 to 190,000 between 2001 and 2051. Although Models 1 and 3 represent very unlikely scenarios, they are included simply to simulate changes of the underlying demography on the population of highly skilled individuals.

TABLE 7 – Demographic Assumptions Underlying Each Model.

	TFR	ANM	e0m	e0f
Model 1	1.8 falling to 1.36	0	77.01 rising to 86.5	82.39 rising to 91.52
Model 2	Constant 1.8	0	77.01 rising to 86.5	82.39 rising to 91.52
Model 3	Constant 1.8	Constant 110,000	77.01 rising to 86.5	82.39 rising to 91.52
Model 4	Constant 1.8	110,000 rising to 190,000	77.01 rising to 86.5	82.39 rising to 91.52

Complex problem solvers in Australia in 2001; the base population

We begin the analysis with a description of the stages of the model that lead to the employment of complex problem solvers in Australia in 2001. The base data were obtained from detailed tabulations from the 2001 Census of Population and Housing. Table 1 shows the proportions holding various qualifications by sex and age (gamma in the model). The table shows a substantial increase in the proportion holding any qualification as we shift from the oldest (55-74) to the middle-aged cohort (40-54). For males, for example, 29.2 per cent hold qualifications in the 55-74 year-old group compared to 83.4 per cent in the 40-54 group. To some extent, this reflects 'credentialism', that is, an increase in the need to obtain a qualification as well as the skill. However, it is mainly due to the increased emphasis on post-school education in Australia from the 1960s onwards that has indeed produced a much more highly

skilled labour force. The proportion with qualifications falls for the youngest age group but this reflects the fact that many at the youngest end of this age group are still in post-school training. Despite this, the proportion of males with information technology qualifications is twice as high for those aged 20-39 as it is for those aged 40-54. Finally, there is a clear division in type of qualification by sex indicating a gendered orientation of qualifications in Australia. Women are very lowly represented in the Engineering and building qualifications that include most of the skilled trades qualifications. On the other hand, they are much more highly represented in the health, management and commerce, society and culture and other qualifications.

Because a very high proportion of Australians have a post-school qualification, there is not much scope to increase the number of complex problem solvers by increasing the total population who have qualifications. However, there would be scope to shift the distribution of qualifications more towards those qualifications that are more heavily related to the employment of complex problem solvers.

Table 2 shows the proportion with qualifications that have recent qualifications (beta), that is, qualifications that were obtained in the ten-year period prior to the census. Not unexpectedly, this parameter is highly associated with age with the 20-39 year-olds being much more likely to have recent qualifications. However, there are some interesting variations. For information technology, relatively high proportions with these qualifications in the older age groups have recent qualifications. This indicates the demand for persons with this skills and the potential for retraining. Retraining is indicated by the percentage of those aged 40-74 who have recent qualifications. Few people retrain as scientists or as skilled trades people (engineering and building). A very interesting result was that women aged 40-74 with qualifications were much more likely to have recent qualifications than men in the same age range. Ironically, this may be an advantage of being out of the labour force with children – the incentive or opportunity to retrain upon re-entry or while children are young seems to be high.

Because the proportions of those aged 40 years and over that have recent qualifications are low, there is considerable scope for re-training in the labour force. Even if this does not sharply increase the proportion with fluid intelligence (because of the association with age), it would increase the quality of crystallised intelligence.

If we define a policy strategy that increase the number of workers who are complex problem solvers, this will be all the more effective if we simultaneously increase the proportions who are able to work effectively with the most creative workers. It seems that Australia has been much more effective in retraining women than in retraining men. This again indicates that there is considerable scope to increase the levels of recent qualifications if we are able to devise schemes that are suitable for men while at the same time extending the approaches that have worked for women. A year out of the labour force to undertake retraining may lead to a net gain of several years of subsequent employment.

Table 3 shows the proportion of those with recent qualifications who were employed at the time of the census (alpha). These are much as we would expect, generally high in the peak ages but lower at the older ages. Once we have restricted to those with recent qualifications, the levels of employment are not very different for men and women. The main scope for improvement here is in the oldest age group, although 5-10 percentage point increases in employment of those aged less that 55 years also seem possible. Reversal of early retirement and welfare to work policies are being pursued at present by the Australian Government and these would seem to be the appropriate approaches.

Finally, Table 4 shows the proportion of employed persons with recent qualifications who were employed in complex problem solving occupations (the parameter, delta). This reflects the demand in the Australian economy for persons with high-level skills. In general, the employment rates do not vary much by age, although the rates fall off as age increases. For example, among employed males with recent information technology qualifications, the percentages employed as complex problem solvers were 49% for 20-39 year olds, 45% for 40-55 year olds and 36% for 55-74 year olds. This means that the high concentration of complex problem solvers in the youngest age group (see Tables 5 and 6) is not related to a preference on the part of employers to employ younger workers when skills are equally recent for older workers. Some values of delta are much higher for women than for men indicating that women are trained in the 'cutting-edge' end of the broad skill classifications that we have used. However, this is not the case with information technology and management and

commerce skills; in these qualifications, men are more likely to be employed as CPS than women.

Tables 5 and 6 show the age and occupation distribution of employed complex problems solvers by sex in Australia in 2001. The tables also show the distribution by age of employed persons with recent qualifications who are not employed as complex problem solvers. CPS workers are overwhelming concentrated in the young ages as we had postulated in the discussion above, but this also largely true of any employed worker with recent qualifications. There are very few complex problem solvers in the oldest age group indicating that reversal of early retirement will not contribute in any way to an increase in this sector of the labour force. Among female CPS workers, the relatively high proportions of middle-aged women in some occupations indicates that re-training provides some scope to increase the numbers of CPS. In a later version of this paper, we shall examine scenarios in which the parameters, alpha, beta and gamma, are altered. In the current version, our emphasis is upon changing population structure. In particular, we indicate the importance of the age structure of the population to the production of complex problem solvers.

Model projections from 2001 to 2051

At this stage of the paper, we examine projections of the numbers of complex problem solvers in Australia in which the values of the existing parameters are maintained but the population inputs are varied through different assumptions about fertility and migration. Four scenarios are used for future population. In all of these scenarios, we assume that the parameters relating to the additional population due to net migration are the same as those for the 2001 Australian population, that is, net migrants have the same characteristics as the rest of the population. The description of the four models is given in Table 7.

Figures 1-6 show the projected numbers of employed persons with recent qualifications by age and sex – the effects of application of the parameters, alpha, beta and gamma, to the projected population models.

Under the zero migration models, the number of young people in this category is roughly constant until 2021 but begins to fall beyond that time with the fall being

much sharper for the low fertility scenario (Model 1). Thus, the impact of maintaining fertility at around 1.8 births per woman becomes very significant from 2026 onwards. The other two models show the additional impact of net migration (with the higher fertility assumption). Migration has a substantial immediate impact on the production of employed workers with recent skills. Because the migration levels in Models 3 and 4 do not differ very much in the first 20 years, they have similar outcomes. The higher migration trajectory begins to have additional impact after 2021.

For age group 40-54, the number of employed person with skills increases initially especially for women even in the zero migration models. Beyond 2021, however, the numbers begin to fall in Models 1 and 2 and more sharply for women. Note, in the models, we maintain cross-sectional alpha, beta and gamma. If the parameters are subject to cohort effects, the observed falls may not eventuate. In Models 3 and 4, migration produces a similar proportional impact as it does at the younger ages. Reflecting the ageing of the baby-boom generation, the numbers of employed persons with recent skills increase sharply at the older ages over the first 20 years of the projection under all four models. Migration has little impact in these years because of the concentration of migrants at younger ages. For obvious reasons, Models 1 and 2 show no differences across the 50 years of the projection. Beyond 2020, however, Models 3 and 4 show much higher relative increase even at these ages than Models 1 and 2 – as the migrant population ages.

Figures 7-12 show the equivalent results for the projected numbers of employed complex problem solvers. Because of the concentration of these workers in the young age groups, it is the young age groups that are important. If anything, as shown by Figures 7 and 8, the relative differences between the models are greater for CPS than they were in Figures 1 and 2. These charts indicate the significance in the longer term of maintaining fertility at its present level and the significance across the whole period of net migration. In contrast, for the two older age groups, the relative impacts of the varying population scenarios seem to have a more muted impact on CPS than upon EQR.

Figure 13 summarises the results of the projections by indicating the total numbers of employed complex problem solvers (all ages and both sexes) across the four models.

This shows that, *ceteris paribus*, with zero migration, irrespective of the level of fertility (at least between 1.3 and 1.8), the numbers of employed complex problem solvers in Australia would fall from 2001 onwards. With very low fertility, the numbers would fall even more sharply beyond 2021. When migration is included, the numbers of employed complex problem solvers rises throughout the projection period at a relatively smooth rate with, of course, the increase being higher the higher is the level of migration.

When fertility is below replacement level, there will be a trade-off between achieving a more favourable age structure (a younger age structure) and the total population size. A younger population will mean a larger population. The total population resulting from the four population models is shown in Figures 15 and 16.

Concluding remarks

In the paper, we argue that the group we describe as complex problem solvers will play a fundamental role in the competitiveness of economies in the future. Accordingly, countries that allow the numbers of these workers to fall are putting themselves at risk. We have demonstrated the very strong association of employed complex problem solvers to the age distribution of the population, specifically its concentration in ages less than 40 years. In the absence of changes in the input parameters, alpha, beta, gamma and delta, only the age distribution of the future population affects the number of complex problem solvers, We demonstrate that countries can improve their situation in the longer term (25+ years) by maintaining the fertility rate at a moderate level (only a little below replacement) and in the short term through positive net migration.

This is work in progress. In a subsequent version of the paper, we shall examine the effects of:

1. shifting the qualification distribution of immigrants more towards complex problem solvers,
2. shifting the skill distribution in the population (the distribution of alpha across the set of qualifications),
3. retraining (increasing beta for those aged 40 and over),

4. employing higher proportions of recently trained skilled people (increasing gamma), and

5. increasing the extent to which employed recently trained skilled workers are working in CPS jobs (the vector K as summarised in the delta parameter).

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Table 1 – Underlying Gamma, by Sex, Age and Qualification, 2001.

	Males			Females		
	20-39	40-54	55-74	20-39	40-54	55-74
Natural and Physical Sciences	0.0220	0.0303	0.0105	0.0211	0.0239	0.0073
Information Technology	0.0336	0.0171	0.0021	0.0129	0.0104	0.0019
Engineering and Related	0.2560	0.3493	0.1139	0.0142	0.0211	0.0589
Architecture and Building	0.0847	0.1081	0.0360	0.0057	0.0068	0.0182
Agriculture, Environment and Related	0.0281	0.0268	0.0095	0.0098	0.0066	0.0055
Health	0.0243	0.0420	0.0189	0.0845	0.1909	0.0355
Management and Commerce	0.0934	0.1210	0.0439	0.1559	0.1695	0.0415
Society and Culture	0.0430	0.0655	0.0248	0.0803	0.1086	0.0272
Other	0.0793	0.1037	0.0321	0.1434	0.2596	0.0479

SOURCE: 2001 Full Count Census.

Table 2 – Underlying Beta, by Sex, Age and Qualification, 2001.

	Males			Females		
	20-39	40-54	55-74	20-39	40-54	55-74
Natural and Physical Sciences	0.6341	0.0899	0.0545	0.6868	0.0980	0.0871
Information Technology	0.7786	0.3663	0.4032	0.7529	0.4307	0.5845
Engineering and Related	0.4062	0.0597	0.0436	0.5795	0.1225	0.1369
Architecture and Building	0.4253	0.0575	0.0380	0.6785	0.1471	0.1475
Agriculture, Environment and Related	0.5381	0.1735	0.1176	0.7319	0.3382	0.3250
Health	0.6085	0.1704	0.0859	0.5561	0.1374	0.0971
Management and Commerce	0.6814	0.2444	0.1360	0.6298	0.1954	0.1517
Society and Culture	0.6844	0.1983	0.1691	0.7333	0.2992	0.3400
Other	0.5395	0.1236	0.1044	0.5780	0.1287	0.1305

SOURCE: 2001 Full Count Census.

Table 3 – Underlying Alpha, by Sex, Age and Qualification, 2001.

	Males			Females		
	20-39	40-54	55-74	20-39	40-54	55-74
Natural and Physical Sciences	0.7707	0.8666	0.6295	0.7447	0.8208	0.5988
Information Technology	0.7627	0.8090	0.5747	0.7031	0.7781	0.5042
Engineering and Related	0.8650	0.8560	0.6181	0.7242	0.7695	0.3989
Architecture and Building	0.8619	0.8375	0.6432	0.7641	0.8057	0.5188
Agriculture, Environment and Related	0.8296	0.8428	0.7126	0.7360	0.7652	0.5497
Health	0.8888	0.9104	0.7547	0.8373	0.8953	0.6940
Management and Commerce	0.8542	0.9129	0.7432	0.7857	0.8363	0.6318
Society and Culture	0.8226	0.8362	0.6098	0.7577	0.8085	0.5398
Other	0.8096	0.8563	0.6296	0.7583	0.8435	0.5810

SOURCE: 2001 Full Count Census.

Table 4 – Underlying Delta, by Sex, Age and Qualification, 2001.

	Males			Females		
	20-39	40-54	55-74	20-39	40-54	55-74
Natural and Physical Sciences	0.412	0.379	0.314	0.409	0.399	0.276
Information Technology	0.489	0.454	0.355	0.364	0.299	0.106
Engineering and Related	0.141	0.141	0.133	0.273	0.370	0.047
Architecture and Building	0.096	0.113	0.117	0.376	0.564	0.209
Agriculture, Environment and Related	0.097	0.114	0.107	0.189	0.171	0.061
Health	0.034	0.031	0.024	0.023	0.027	0.017
Management and Commerce	0.125	0.115	0.109	0.067	0.054	0.025
Society and Culture	0.090	0.069	0.059	0.046	0.050	0.023
Other	0.028	0.030	0.028	0.017	0.023	0.010

SOURCE: 2001 Full Count Census.

TABLE 5- Distribution of CPS by Age and Occupation, Males 2001.

	20-39	40-54	55-74	Total
Scientists	80.77%	17.23%	2.00%	100.00%
Engineers – Construction	83.21%	14.84%	1.95%	100.00%
Engineers – Non Construction	85.88%	12.75%	1.37%	100.00%
Information Technology and BIT	85.43%	13.80%	0.77%	100.00%
Marketing and Business	75.68%	21.33%	2.98%	100.00%
Medical Scientists	81.87%	16.72%	1.42%	100.00%
Non Complex Problem Solvers	79.31%	18.23%	2.45%	100.00%

SOURCE: 2001 Full Count Census

TABLE 6- Distribution of CPS by Age and Occupation, Females 2001.

	20-39	40-54	55-74	Total
Scientists	82.34%	16.77%	0.89%	100.00%
Engineers – Construction	65.79%	33.52%	0.69%	100.00%
Engineers – Non Construction	59.69%	40.05%	0.27%	100.00%
Information Technology and BIT	77.42%	21.84%	0.74%	100.00%
Marketing and Business	80.94%	17.98%	1.08%	100.00%
Medical Scientists	83.41%	15.43%	1.16%	100.00%
Non Complex Problem Solvers	72.61%	24.59%	2.80%	100.00%

SOURCE: 2001 Full Count Census

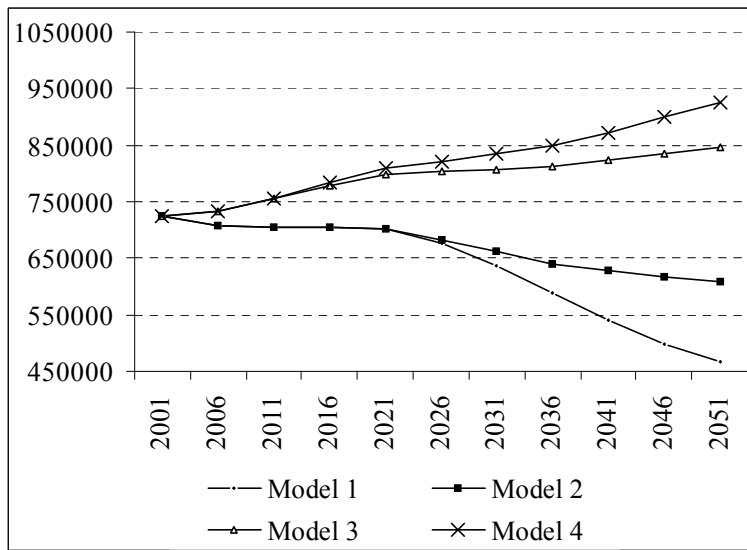FIGURE 1 – Projected EQR, Males 20-39 (2001-2051)

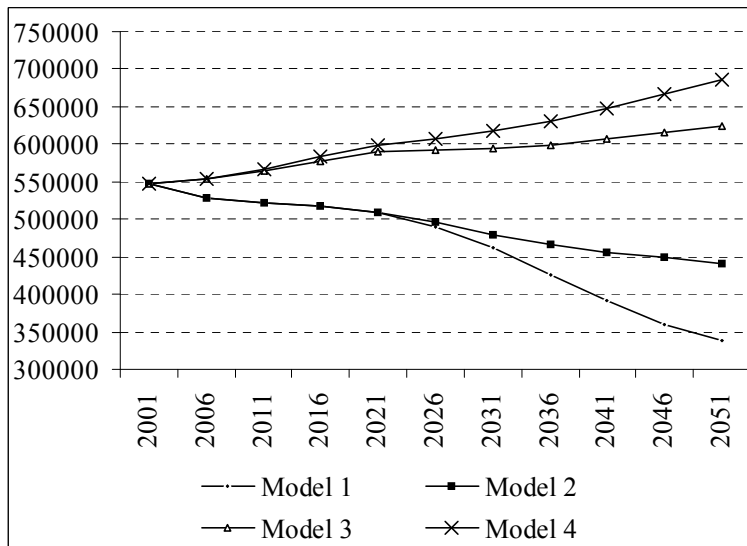FIGURE 2 – Projected EQR, Females 20-39 (2001-2051)

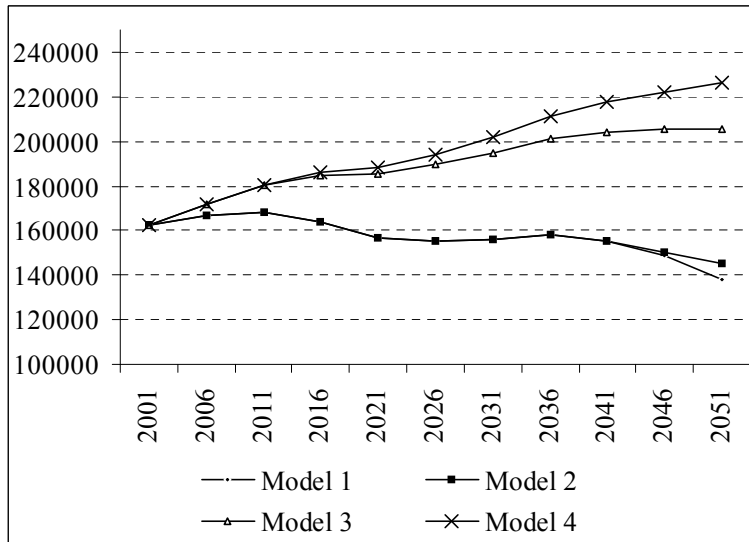FIGURE 3 – Projected EQR, Males 40-54 (2001-2051)

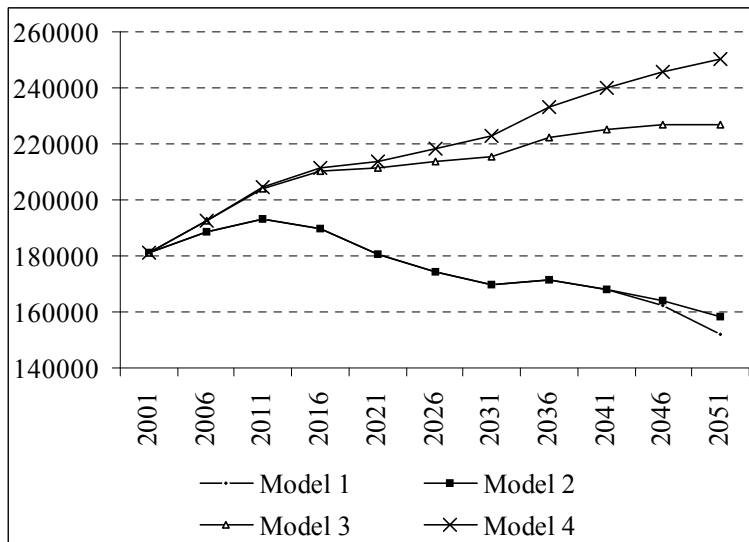
FIGURE 4 – Projected EQR, Females 40-54 (2001-2051)

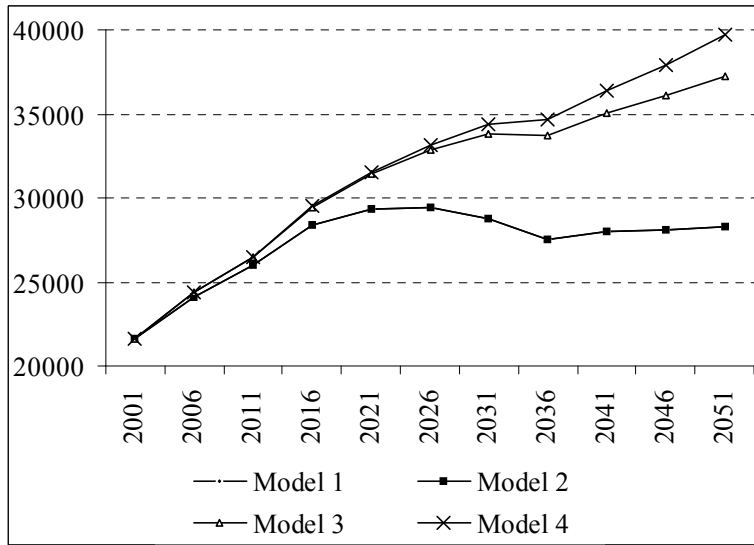FIGURE 5 – Projected EQR, Males 55-64 (2001-2051)
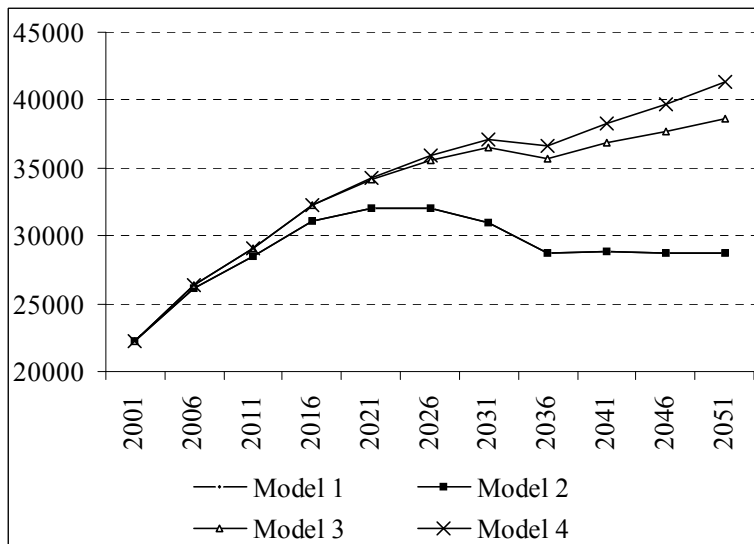

FIGURE 6 – Projected EQR, Females 55-64 (2001-2051)

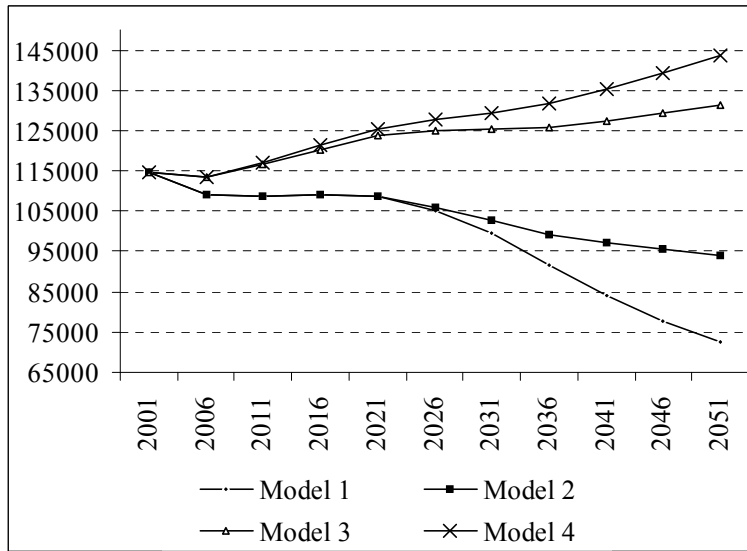FIGURE 7 – Projected CPS with EQR, Males 20-39 (2001-2051)

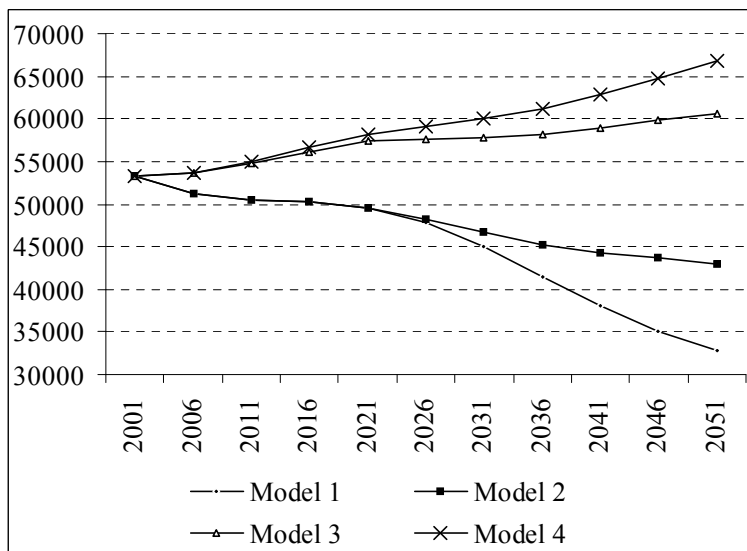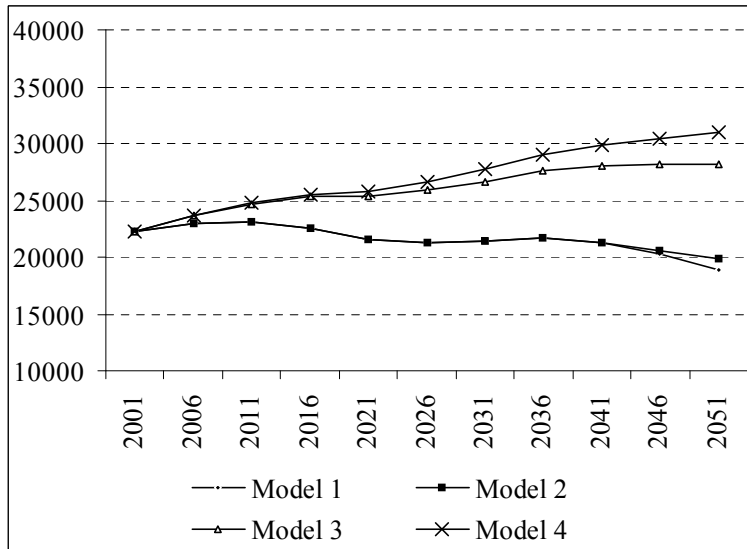FIGURE 8 – Projected CPS with EQR, Females 20-39 (2001-2051)

FIGURE 9 – Projected CPS with EQR, Males 40-54 (2001-2051)

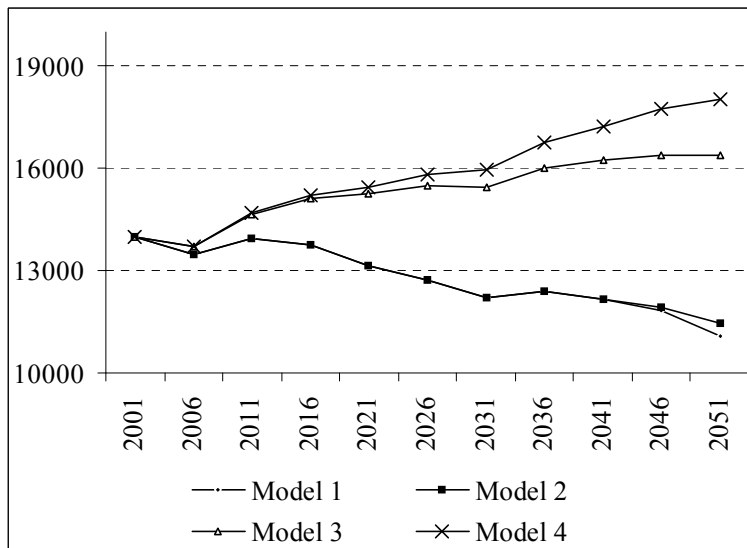FIGURE 10 – Projected CPS with EQR, Females 40-54 (2001-2051)

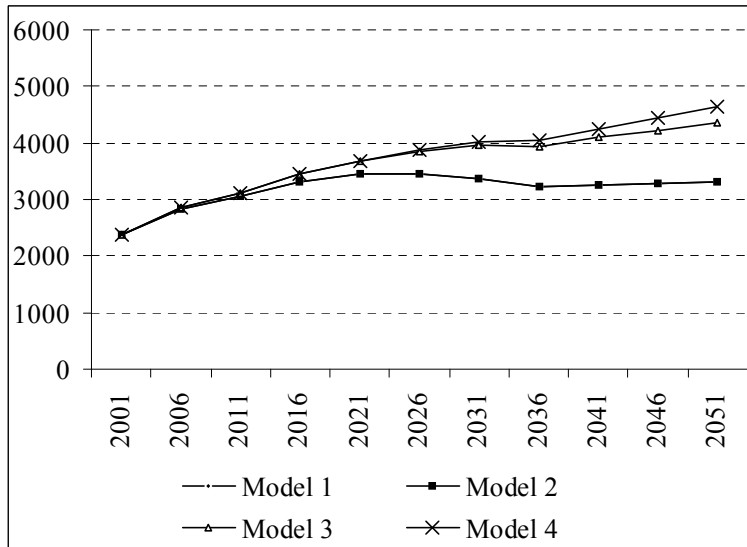FIGURE 11 – Projected CPS with EQR, Males 55-74 (2001-2051)

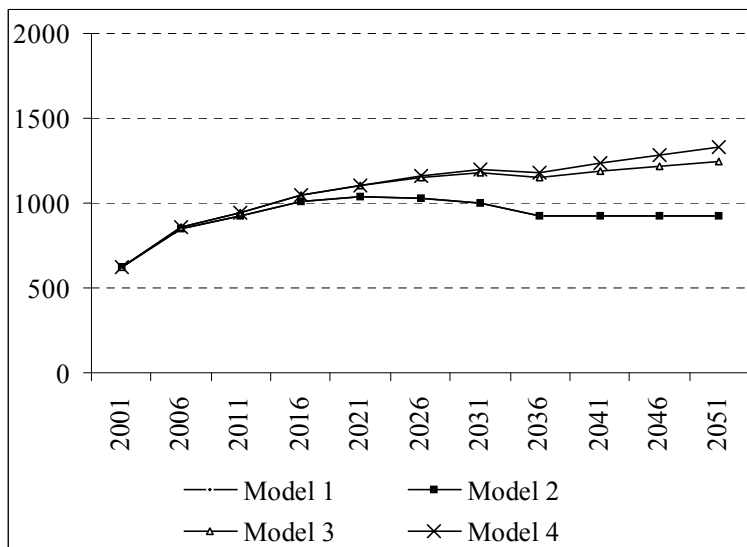FIGURE 12 – Projected CPS with EQR, Females 55-74 (2001-2051)

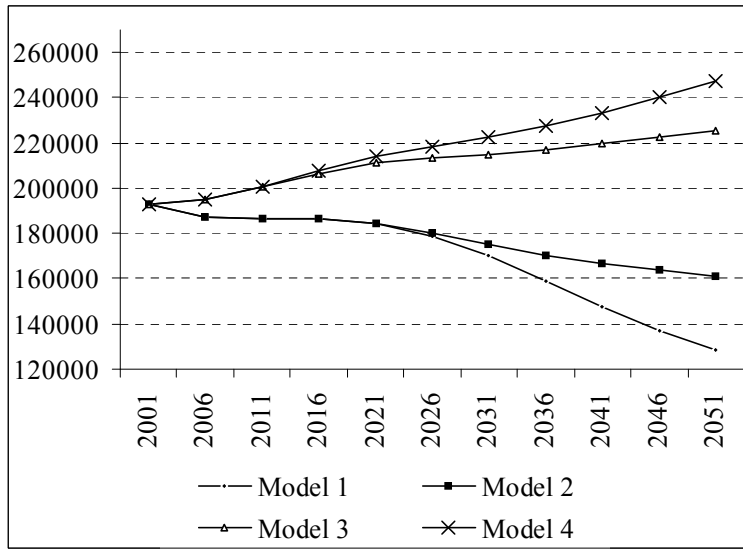FIGURE 13 – Projected CPS with EQR, Total Population (2001-2051)
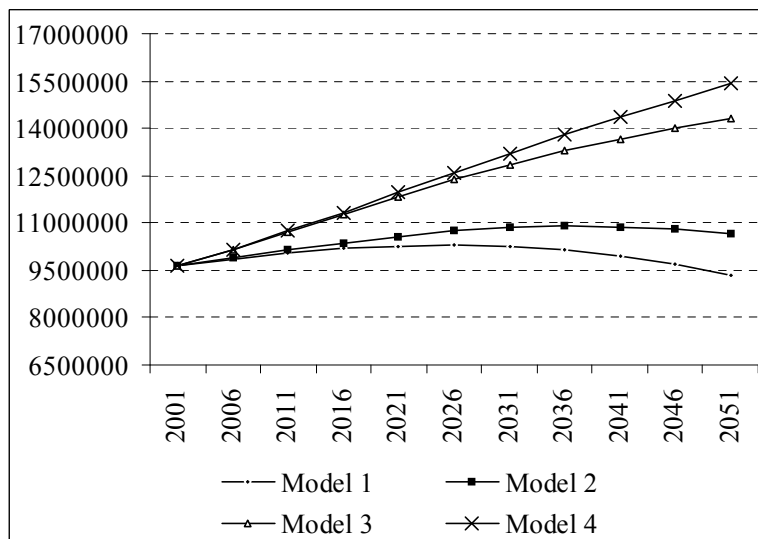
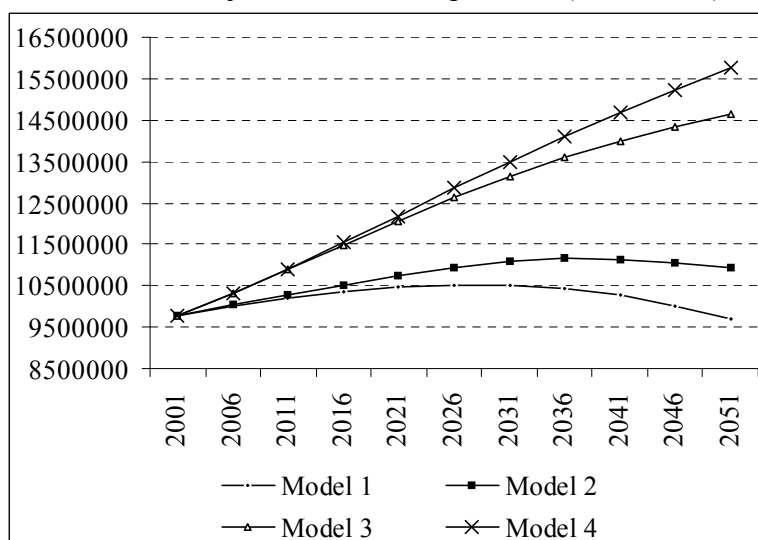FIGURE 14 – Projected Male Population (2001-2051)

FIGURE 15 – Projected Female Population (2001-2051)

APPENDIX 1 – DEFINITION OF CPS CATEGORIES

Scientists

129911 Research and Development Manager
129913 Laboratory Manager
210000 Science, Building and Engineering Professionals, nfd
211000 Natural and Physical Science Professionals, nfd
211111 Chemist
211200 Geologists and Geophysicists, nfd
211211 Geologist
211213 Geophysicist
211300 Life Scientists, nfd
211311 Anatomist or Physiologist

211313 Botanist
211315 Zoologist
211317 Biochemist
211319 Marine Biologist
211379 Life Scientists, nec
211400 Environmental and Agricultural Science Professionals, nfd
211411 Environmental Research Scientist
211900 Other Natural and Physical Science Professionals, nfd
211911 Physicist
211913 Meteorologist
211915 Extractive Metallurgist
211917 Physical Metallurgist
211919 Materials Scientist
211979 Natural and Physical Science Professionals, nec
211417 Soil Scientist
211419 Agricultural Scientist
211421 Agricultural Adviser
211479 Environmental and Agricultural Science Professionals, nec
229311 Mathematician
229313 Statistician
311200 Science Technical Officers, nfd
311211 Chemistry Technical Officer
311213 Earth Science Technical Officer
311215 Life Science Technical Officer
311217 Agricultural Technical Officer
311279 Science Technical Officers, nec
312913 Metallurgical and Materials Technician

Engineers - Construction
212000 Building and Engineering Professionals, nfd
212100 Architects and Landscape Architects, nfd
212111 Architect
212113 Landscape Architect
212211 Quantity Surveyor
212300 Cartographers and Surveyors, nfd
212311 Cartographer
212313 Surveyor
212411 Civil Engineer
312000 Building and Engineering Associate Professionals, nfd
312100 Building, Architectural and Surveying Associate Professionals, nfd
312111 Building Associate
312113 Architectural Associate
312115 Surveying and Cartographic Associate
312117 Building Inspector
312119 Plumbing Inspector
312121 Plumbing Engineering Associate
312200 Civil Engineering Associate Professionals, nfd
312211 Civil Engineering Associate
312213 Civil Engineering Technician

312900 Other Building and Engineering Associate Professionals, nfd
312979 Building and Engineering Associate Professionals, nec

Engineers – Non Construction
212500 Electrical and Electronics Engineers, nfd
212511 Electrical Engineer
212513 Electronics Engineer
212600 Mechanical, Production and Plant Engineers, nfd
212611 Mechanical Engineer
212613 Production or Plant Engineer
212700 Mining and Materials Engineers, nfd
212711 Mining Engineer (excluding Petroleum)
212713 Petroleum Engineer
212715 Materials Engineer
212800 Engineering Technologists, nfd
212811 Civil Engineering Technologist
212813 Mechanical Engineering Technologist
212815 Electrical or Electronics Engineering Technologists
212879 Engineering Technologists, nec
212900 Other Building and Engineering Professionals, nfd
212911 Aeronautical Engineer
212913 Agricultural Engineer
212915 Biomedical Engineer
212917 Chemical Engineer
212919 Industrial Engineer
212921 Naval Architect
212979 Building and Engineering Professionals, nfd
312300 Electrical Engineering Associate Professionals, nfd
312311 Electrical Engineering Associate
312313 Electrical Engineering Technician
312400 Electronic Engineering Associate Professionals, nfd
312411 Electronic Engineering Associate
312413 Electronic Engineering Technician
312500 Mechanical Engineering Associate Professionals, nfd
312511 Mechanical Engineering Associate
312513 Mechanical Engineering Technician
312915 Mine Deputy

Information Technology and BIT
223100 Computing Professionals, nfd
223111 Systems Manager
223113 Systems Designer
223115 Software Designer
223117 Applications and Analyst Programmer
223119 Systems Programmer
223121 Computer Systems Auditor
223179 Computing Professionals, nec

Marketing and Business

120000 Specialist Managers, nfd
121000 Resource Managers, nfd
220000 Business and Information Professionals, nfd
222113 Marketing Specialist
222115 Market Research Analyst
222117 Advertising Specialist
229400 Business and Organisation Analysts, nfd
229411 Management Consultant
229413 Organisation and Methods Analyst
229415 Quality Assurance Manager
229979 Business and Information Professionals, nec
320000 Business and Administration Associate Professionals, nfd
321000 Finance Associate Professionals, nfd
321200 Financial Dealers and Brokers, nfd
321211 Stockbroking Dealer
321213 Futures Trader
321215 Financial Market Dealer
321217 Commodities Trader
321279 Financial Dealers and Brokers, nec
321311 Financial Investment Adviser
252211 Economist
252311 Urban and Regional Planner

Medical Scientists

211511 Medical Scientist
310000 Science, Engineering and Related Associate Professionals, nfd
311000 Medical and Science Technical Officers, nfd
311100 Medical Technical Officers, nfd
311111 Medical Laboratory Technical Officer
311179 Medical Technical Officers, nec
312911 Biomedical Engineering Associate

Other – Non CPS Categories

100000 Managers and Administrators, nfd
110000 Generalist Managers, nfd
111000 General Managers and Administrators, nfd
111100 Legislators and Government Appointed Officials, nfd
111111 Parliamentarian or Councillor
111113 Judge
111115 Magistrate
111117 Tribunal Member
111179 Legislators and Government Appointed Officials nec
111211 General Manager
119000 Miscellaneous Generalist Managers, nfd
119100 Building and Construction Managers, nfd
119111 Construction Project Manager
119113 Project Builder
119200 Importers, Exporters and Wholesalers, nfd

119211 Importer or Exporter
119213 Wholesaler
119311 Manufacturer
121111 Finance Manager
121211 Company Secretary
121311 Human Resource Manager
122000 Engineering, Distribution and Process Managers, nfd
122111 Engineering Manager
122200 Production Managers, nfd
122211 Production Manager (Manufacturing)
122213 Production Manager (Mining)
122311 Supply and Distribution Manager
122411 Information Technology Manager
123111 Sales and Marketing Manager
129000 Miscellaneous Specialist Managers, nfd
129111 Policy and Planning Manager
129200 Health Services Managers, nfd
129211 Director of Nursing
129213 Medical Administrator
129300 Education Managers, nfd
129311 School Principal
129313 Faculty Head
129315 Regional Education Manager
129379 Education Managers, nec
129400 Commissioned Officers (Management), nfd
129411 Commissioned Defence Force Officer
129413 Commissioned Fire Officer
129415 Commissioned Police Officer
129481 Trainee Commissioned Defence Force Officer
129511 Child Care Co-ordinator
129600 Media Producers and Artist Directors, nfd
129611 Media Producer
129613 Artistic Director
129900 Other Specialist Managers, nfd
129915 Welfare Centre Manager
129917 Environment, Parks and Land Care Manager
129919 Sports Administrator
129979 Specialist Managers, nec
131000 Farmers and Farm Managers, nfd
131111 Mixed Crop and Livestock Farmer
131200 Livestock Farmers, nfd
131211 Mixed Livestock Farmer
131213 Beef Cattle Farmer
131215 Dairy Farmer
131217 Sheep Farmer
131219 Pig Farmer
131221 Poultry Farmer
131223 Horse Breeder
131225 Apiarist

131279 Livestock Farmers, nec
131300 Crop Farmers, nfd
131311 Grain, Oilseed and Pasture Grower
131313 Sugar Cane Grower
131315 Tobacco Grower
131317 Fruit and Nut Grower
131319 Vegetable Grower
131321 Flower Grower
131379 Crop Farmers nec
131411 Aquaculture Farmer
200000 Professionals, nfd
211413 Forester
211415 Park Ranger
221000 Accountants, Auditors and Corporate Treasurers, nfd
221111 Accountant
221200 Auditors, nfd
221211 External Auditor
221213 Internal Auditor
221311 Corporate Treasurer
222000 Sales, Marketing and Advertising Professionals, nfd
222100 Marketing and Advertising Professionals, nfd
222111 Public Relations Officer
222200 Technical Sales Representatives, nfd
222211 Sales Representative (Industrial Products)
222213 Sales Representative (Information and Communication Products)
222215 Sales Representative (Medical and Pharmaceutical Products)
222279 Technical Sales Representatives, nec
229000 Miscellaneous Business and Information Professionals, nfd
229100 Human Resource Professionals, nfd
229111 Personnel Officer
229113 Personnel Consultant
229115 Industrial Relations Officer
229117 Training Officer
229211 Librarian
229300 Mathematicians, Statisticians and Actuaries, nfd
229315 Actuary
229500 Property Professionals, nfd
229511 Valuer
229513 Land Economist
229900 Other Business and Information Professionals, nfd
229911 Health Information Manager
229913 Records Manager
229915 Archivist
229917 Policy Analyst
229919 Intelligence Officer
230000 Health Professionals, nfd
231000 Medical Practitioners, nfd
231100 Generalist Medical Practitioners, nfd
231111 General Medical Practitioner

231181 Medical Practitioner in Training
231200 Specialist Medical Practitioners, nfd
231211 Anaesthetist
231213 Dermatologist
231215 Emergency Medicine Specialist
231217 Obstetrician and Gynaecologist
231219 Opthamologist
231221 Paediatrician
231223 Pathologist
231225 Specialist Physician
231227 Psychiatrist
231229 Radiologist
231231 Surgeon
231279 Specialist Medical Practitioners, nec
232000 Nursing Professionals, nfd
232111 Nurse Manager
232200 Nurse Educators and Researchers, nfd
232211 Nurse Educator
232213 Nurse Researcher
232311 Registered Nurse
232411 Registered Midwife
232511 Registered Mental Health Nurse
232611 Registered Developmental Disability Nurse
238000 Miscellaneous Health Professionals, nfd
238100 Dental Practitioners, nfd
238111 Dentist
238113 Dental Specialist
238200 Pharmacists, nfd
238211 Hospital Pharmacist
238213 Industrial Pharmacist
238215 Retail Pharmacist
238311 Occupational Therapist
238411 Optometrist
238511 Physiotherapist
238611 Speech Pathologist
238700 Chiropractors and Osteopaths, nfd
238711 Chiropractor
238713 Osteopath
238811 Podiatrist
239100 Medical Imaging Professionals, nfd
239111 Medical Diagnostic Radiographer
239113 Radiation Therapist
239115 Nuclear Medicine Technologist
239117 Sonographer
239211 Veterinarian
239311 Dietitian
239400 Natural Therapy Professionals, nfd
239411 Naturopath
239413 Acupuncturist

239479 Natural Therapy Professionals, nec
239900 Other Health Professionals, nfd
239911 Audiologist
239913 Orthoptist
239915 Orthotist
239979 Health Professionals, nec
240000 Education Professionals, nfd
241000 School Teachers, nfd
241111 Pre-Primary School Teacher
241211 Primary School Teacher
241311 Secondary School Teacher
241400 Special Education Teachers, nfd
241411 Special Needs Teacher
241413 Teacher of the Hearing Impaired
241415 Teacher of the Sight Impaired
241479 Special Education Teachers, nec
242000 University and Vocational Education Teachers, nfd
242100 University Lecturers and Tutors, nfd
242111 University Lecturer
242113 University Tutor
242211 Vocational Education Teacher
249000 Miscellaneous Education Professionals, nfd
249100 Extra-Systemic Teachers, nfd
249111 Art Teacher (Private)
249113 Music Teacher (Private)
249115 Dance Teacher (Private)
249117 Drama Teacher (Private)
249179 Extra-Systemic Teachers, nec
249211 English as a Second Language Teacher
249311 Education Officer
250000 Social, Arts and Miscellaneous Professionals, nfd
251000 Social Welfare Professionals, nfd
251111 Social Worker
251200 Welfare and Community Workers, nfd
251211 Welfare Worker
251213 Community Worker
251300 Counsellors, nfd
251311 Rehabilitation Counsellor
251313 Drug and Alcohol Counsellor
251315 Family Counsellor
251317 Careers Counsellor
251319 Student Counsellor
251379 Counsellors, nec
251400 Psychologists, nfd
251411 Clinical Psychologist
251413 Educational Psychologist
251415 Organisational Psychologist
251479 Psychologists, nec
251511 Minister of Religion

252000 Miscellaneous Social Professionals, nfd
252100 Legal Professionals, nfd
252111 Barrister
252113 Solicitor
252179 Legal Professionals, nec
252900 Other Social Professionals, nfd
252911 Historian
252913 Interpreter
252915 Translator
252979 Social Professionals, nec
253000 Artists and Related Professionals, nfd
253100 Visual Arts and Crafts Professionals, nfd
253111 Painter (Visual Arts)
253113 Sculptor
253115 Potter or Ceramic Artist
253179 Visual Arts and Crafts Professionals, nec
253211 Photographer
253300 Designers and Illustrators, nfd
253311 Fashion Designer
253313 Graphic Designer
253315 Industrial Designer
253317 Interior Designer
253319 Illustrator
253400 Journalists and Related Professionals, nfd
253411 Editor
253413 Print Journalist
253415 Television Journalist
253417 Radio Journalist
253419 Copywriter
253421 Technical Writer
253479 Journalists and Related Professionals, nec
253500 Authors and Related Professionals, nfd
253511 Author
253513 Book Editor
253515 Script Editor
253600 Film, Television, Radio and Stage Directors, nfd
253611 Art Director (Film, Television or Stage)
253613 Director (Film, Television, Radio or Stage)
253615 Director of Photography
253617 Film and Video Editor
253619 Stage Manager
253621 Program Director (Radio or Television)
253623 Technical Director
253679 Film, Television, Radio and Stage Directors, nec
253700 Musicians and Related Professionals, nfd
253711 Music Director
253713 Singer
253715 Instrumental Musician
253717 Composer

253779 Musicians and Related Professionals, nec
253800 Actors, Dancers and Related Professionals, nfd
253811 Actor
253813 Dancer or Choreographer
253879 Actors, Dancers and Related Professionals, nec
253900 Media Presenters, nfd
253911 Radio Presenter
253913 Television Presenter
254000 Miscellaneous Professionals, nfd
254100 Air Transport Professionals, nfd
254111 Aircraft Pilot
254113 Air Traffic Controller
254115 Flight Service Officer
254117 Flight Engineer
254119 Flying Instructor
254179 Air Transport Professionals, nec
254200 Sea Transport Professionals, nfd
254211 Ship's Master
254213 Master Fisher
254215 Ship's Engineer
254217 Ship's Surveyor
254219 Ship's Officer
254279 Sea Transport Professionals, nec
254300 Occupational and Environmental Health Professionals, nfd
254311 Occupational Health and Safety Officer
254313 Environmental Health Officer
254900 Other Professionals, nfd
254911 Conservator
254913 Electorate Officer
254915 Patents Examiner
254917 Oenologist
254919 Recreation Officer
254921 Museum or Gallery Curator
254979 Professionals, nec
300000 Associate Professionals, nfd
321100 Branch Accountants and Managers (Financial Institution), nfd
321111 Branch Accountant (Financial Institution)
321113 Financial Institution Branch Manager
321219 Insurance Broker
321221 Bookmaker
329000 Miscellaneous Business and Administration Associate Professionals, nfd
329111 Office Manager
329211 Project and Program Administrator
329300 Real Estate Associate Professionals, nfd
329311 Real Estate Agency Manager
329313 Property Manager
329315 Real Estate Salesperson
329411 Computing Support Technician
330000 Managing Supervisors (Sales and Service), nfd

331111 Shop Manager
332000 Hospitality and Accommodation Managers, nfd
332111 Restaurant and Catering Manager
332200 Chefs, nfd
332201 Head Chef
332211 Chef
332311 Hotel or Motel Manager
332411 Club Manager (Licensed Premises)
332511 Caravan Park and Camping Ground Manager
332911 Other Hospitality and Accommodation Manager
339000 Miscellaneous Managing Supervisors (Sales and Service), nfd
339100 Sport and Recreation Managers, nfd
339111 Fitness Centre Manager
339113 Other Sports Centre Manager
339115 Amusement Centre Manager
339179 Sport and Recreation Managers, nec
339211 Customer Service Manager
339311 Transport Company Manager
339900 Other Managing Supervisors (Sales and Service), nfd
339911 Post Office Manager
339913 Railway Station Manager
339915 Betting Agency Branch Manager
339917 Hair and Beauty Salon Manager
339919 Car Rental Agency Manager
339921 Fleet Manager
339923 Stock and Station Agent
339925 Travel Agency Manager
339927 Theatre or Cinema Manager
339929 Funeral Director
339979 Managing Supervisors (Sales and Service), nec
340000 Health and Welfare Associate Professionals, nfd
341111 Enrolled Nurse
342100 Welfare Associate Professionals, nfd
342111 Parole or Probation Officer
342113 Youth Worker
342115 Residential Care Officer
342117 Disabilities Services Officer
342119 Family Support Worker
349000 Miscellaneous Health and Welfare Associate Professionals, nfd
349100 Ambulance Officers and Paramedics, nfd
349111 Ambulance Officer
349113 Intensive Care Ambulance Paramedic
349200 Dental Associate Professionals, nfd
349211 Dental Therapist
349213 Dental Hygienist
349215 Dental Technician
349311 Aboriginal and Torres Strait Islander Health Workers
349411 Massage Therapist
390000 Other Associate Professionals, nfd

391100 Police Officers, nfd
391101 Supervisor, Police Officer
391111 Police Officer
399000 Miscellaneous Associate Professionals, nfd
399111 Primary Products Inspector
399211 Safety Inspector
399300 Sportspersons, Coaches and Related Support Workers, nfd
399311 Jockey
399313 Golfer
399315 Footballer
399317 Other Sportsperson
399319 Gymnastics Coach
399321 Tennis Coach
399323 Swimming Coach
399325 Horseriding Coach
399327 Other Sports Coach
399329 Sports Development Officer
399331 Sports Umpire
399333 Horse or Dog Racing Official
399335 Other Sports Official
399411 Senior Non-Commissioned Defence Force Officer
399511 Senior Fire Fighter
399611 Retail Buyer
399711 Library Technician
399900 Other Miscellaneous Associate Professionals, nfd
399911 Interior Decorator
399913 Museum or Art Gallery Technician
399915 Radio Operator
399917 Private Investigator
399919 Security Adviser
399979 Associate Professionals, nec
400000 Tradespersons and Related Workers, nfd
410000 Mechanical and Fabrication Engineering Tradespersons, nfd
411000 Mechanical Engineering Tradespersons, nfd
411100 General Mechanical Engineering Tradespersons, nfd
411101 Supervisor General Mechanical Engineering Tradespersons
411111 General Mechanical Engineering Tradespersons
411181 Apprentice General Mechanical Engineering Tradespersons
411200 Metal Fitters and Machinists, nfd
411201 Supervisor, Metal Fitters and Machinists
411211 Fitter
411213 Metal Machinist (First Class)
411215 Textile Clothing or Footwear Mechanic
411281 Apprentice Fitter
411283 Apprentice Metal Machinist
411285 Apprentice Textile Clothing or Footwear Mechanic
411300 Toolmakers, nfd
411301 Supervisors, Toolmakers
411311 Toolmaker

411381 Apprentice Toolmaker
411400 Aircraft Maintenance Engineers, nfd
411401 Supervisor Aircraft Maintenance Engineers
411411 Aircraft Maintenance Engineer (Mechanical)
411413 Aircraft Maintenance Engineer (Structures)
411415 Aircraft Maintenance Engineer (Avionics)
411481 Apprentice Aircraft Maintenance Engineers (Mechanical)
411483 Apprentice Aircraft Maintenance Engineers (Structures)
411485 Apprentice Aircraft Maintenance Engineers (Avionics)
411500 Precision Metal Tradespersons, nfd
411501 Supervisor, Precision Metal Tradespersons
411511 Precision Instrument Maker and Repairer
411513 Watch and Clock Maker and Repairer
411515 Locksmith
411517 Saw Maker and Repairer
411519 Gunsmith
411521 Engraver
411581 Apprentice Precision Metal Tradesperson
412000 Fabrication Engineering Tradespersons, nfd
412100 General Fabrication Engineering Tradespersons, nfd
412101 Supervisor, General Fabrication Engineering Tradespersons
412111 General Fabrication Engineering Tradesperson
412181 Apprentice General Fabrication Engineering Tradesperson
412200 Structural Steel and Welding Tradespersons, nfd
412201 Supervisor, Structural Steel and Welding Tradespersons
412211 Metal Fabricator
412213 Pressure Welder
412215 Welder (First Class)
412281 Apprentice Metal Fabricator
412283 Apprentice Welder
412300 Forging Tradespersons, nfd
412301 Supervisor, Forging Tradespersons
412311 Blacksmith
412313 Farrier
412381 Apprentice Blacksmith
412383 Apprentice Farrier
412400 Sheetmetal Tradespersons, nfd
412401 Supervisor, Sheetmetal Tradespersons
412411 Sheetmetal Worker (First Class)
412481 Apprentice Sheetmetal Worker
412500 Metal Casting Tradespersons, nfd
412501 Supervisor, Metal Casting Tradespersons
412511 Metal Casting Tradesperson
412581 Apprentice Metal Casting Tradesperson
412600 Metal Finishing Tradespersons, nfd
412601 Supervisor, Metal Finishing Tradespersons
412611 Metal Polisher
412613 Electroplater (First Class)
412681 Apprentice Metal Polisher

412683 Apprentice Electroplater
421000 Automotive Tradespersons, nfd
421100 Motor Mechanics, nfd
421101 Supervisor, Motor Mechanics
421111 Motor Mechanic
421181 Apprentice Motor Mechanic
421200 Automotive Electricians, nfd
421201 Supervisor, Automotive Electricians
421211 Automotive Electrician
421281 Apprentice Automotive Electrician
421300 Panel Beaters, nfd
421301 Supervisor, Panel Beaters
421311 Panel Beater
421381 Apprentice Panel Beater
421400 Vehicle Painters, nfd
421401 Supervisor, Vehicle Painters
421411 Vehicle Painter
421481 Apprentice Vehicle Painter
421500 Vehicle Body Makers, nfd
421501 Supervisor, Vehicle Body Makers
421511 Vehicle Body Maker
421581 Apprentice Vehicle Body Maker
421600 Vehicle Trimmers, nfd
421601 Supervisor, Vehicle Trimmers
421611 Vehicle Trimmer
421681 Apprentice Vehicle Trimmer
431000 Electrical and Electronics Tradespersons, nfd
431100 Electricians, nfd
431101 Supervisor, Electricians
431111 General Electrician
431113 Electrician (Special Class)
431115 Lift Mechanic
431181 Apprentice Electrician
431183 Apprentice Lift Mechanic
431200 Refrigeration and Airconditioning Mechanics, nfd
431201 Supervisor, Refrigeration and Airconditioning Mechanics
431211 Refrigeration and Airconditioning Mechanic
431281 Apprentice Refrigeration and Airconditioning Mechanic
431300 Electrical Distribution Tradespersons, nfd
431301 Supervisor, Electrical Distribution Tradespersons
431311 Electrical Powerline Tradespersons
431313 Cable Jointer
431381 Apprentice Electrical Powerline Tradesperson
431383 Apprentice Cable Jointer
431400 Electronic Instrument Tradespersons, nfd
431401 Supervisor, Electronic Instrument Tradespersons
431411 General Electronic Instrument Tradesperson
431413 Electronic Instrument Tradesperson (Special Class)
431481 Apprentice Electronic Instrument Tradesperson

431500 Electronic and Office Equipment Tradespersons, nfd
431501 Supervisor, Electronic and Office Equipment Tradespersons
431511 Electronic Equipment Tradesperson
431513 Business Machine Mechanic
431581 Apprentice Electronic Equipment Tradesperson
431583 Apprentice Business Machine Mechanic
431600 Communications Tradespersons, nfd
431601 Supervisor, Communications Tradespersons
431611 General Communications Tradesperson
431613 Communications Linesperson
431681 Apprentice General Communication Tradesperson
431683 Apprentice Communication Linesperson
440000 Construction Tradespersons, nfd
441000 Structural Construction Tradespersons, nfd
441100 Carpentry and Joinery Tradespersons, nfd
441101 Supervisor, Carpentry and Joinery Tradespersons
441111 Carpenter and Joiner
441113 Carpenter
441115 Joiner
441181 Apprentice Carpenter and Joiner
441183 Apprentice Carpenter
441185 Apprentice Joiner
441200 Fibrous Plasterers, nfd
441201 Supervisor, Fibrous Plasterers
441211 Fibrous Plasterer
441281 Apprentice Fibrous Plasterer
441300 Roof Slaters and Tilers, nfd
441301 Supervisor, Roof Slaters and Tilers
441311 Roof Slater and Tiler
441381 Apprentice Roof Slater and Tiler
441400 Bricklayers, nfd
441401 Supervisor, Bricklayers
441411 Bricklayer
441481 Apprentice Bricklayer
441500 Solid Plasterers, nfd
441501 Supervisors, Solid Plasterers
441511 Solid Plasterer
441581 Apprentice Solid Plasterer
441600 Wall and Floor Tilers and Stonemasons, nfd
441601 Supervisor, Wall and Floor Tilers and Stonemasons
441611 Wall and Floor Tiler
441613 Stonemason
441681 Apprentice Wall and Floor Tiler
441683 Apprentice Stonemason
442000 Final Finish Construction Tradespersons, nfd
442100 Painters and Decorators, nfd
442101 Supervisor, Painters and Decorators
442111 Painter and Decorator
442181 Apprentice Painter and Decorator

442200 Signwriters, nfd
442201 Supervisor, Signwriters
442211 Signwriter
442281 Apprentice Signwriter
442300 Floor Finishers, nfd
442301 Supervisor, Floor Finishers
442311 Floor Finisher
442381 Apprentice Floor Finisher
443100 Plumbers, nfd
443101 Supervisor, Plumbers
443111 General Plumber
443113 Gasfitter
443115 Drainer
443117 Roof Plumber
443119 Mechanical Services and Airconditioning Plumber
443181 Apprentice General Plumber
443183 Apprentice Gasfitter
443185 Apprentice Drainer
443187 Apprentice Roof Plumber
443189 Apprentice Mechanical Services and Airconditioning Plumber
451000 Food Tradespersons, nfd
451100 Meat Tradespersons, nfd
451101 Supervisor, Meat Tradespersons
451111 Butcher
451113 Smallgoods Maker
451115 Slaughterperson
451181 Apprentice Butcher
451183 Apprentice Smallgoods Maker
451185 Apprentice Slaughterperson
451200 Bakers and Pastrycooks, nfd
451201 Supervisor, Bakers and Pastrycooks
451211 Baker
451213 Pastrycook
451281 Apprentice Baker
451283 Apprentice Pastrycook
451300 Cooks, nfd
451311 Cook
451381 Apprentice Cook or Chef
451900 Other Food Tradespersons, nfd
451911 Miller
451913 Buttermaker or Cheesemaker
451915 Confectioner
451981 Apprentice Miller
451983 Apprentice Buttermaker or Cheesemaker
451985 Apprentice Confectioner
460000 Skilled Agricultural and Horticultural Workers, nfd
461000 Skilled Agricultural Workers, nfd
461111 Farm Overseer
461211 Shearer

461300 Wool, Hide and Skin Classers, nfd
461311 Wool Classer
461313 Hide and Skin Classer
461400 Animal Trainers, nfd
461411 Horse Trainer
461479 Animal Trainers, nec
462000 Horticultural Tradespersons, nfd
462100 Nurserypersons, nfd
462111 Nurseryperson
462181 Apprentice Nurseryperson
462200 Greenkeepers, nfd
462211 Greenkeeper
462281 Apprentice Greenkeeper
462300 Gardeners, nfd
462301 Head Gardener
462311 General Gardener
462313 Landscape Gardener
462315 Tree Surgeon
462381 Apprentice General Gardener
462383 Apprentice Landscape Gardener
462385 Apprentice Tree Surgeon
490000 Other Tradespersons and Related Workers, nfd
491000 Printing Tradespersons, nfd
491100 Graphic Pre-Press Tradespersons, nfd
491111 Graphic Pre-Press Tradesperson
491181 Apprentice Graphic Pre-Press Tradesperson
491200 Print Machinists and Small Offset Printers, nfd
491211 Printing Machinist
491213 Small Offset Printer
491281 Apprentice Printing Machinist
491283 Apprentice Small Offset Printer
491300 Binders and Finishers, nfd
491311 Binder and Finisher
491381 Apprentice Binder and Finisher
491400 Screen Printers, nfd
491411 Screen Printer
491481 Apprentice Screen Printer
492000 Wood Tradespersons, nfd
492100 Wood Machinists and Turners, nfd
492111 Wood Machinist (A-Grade)
492113 Wood Turner
492181 Apprentice Wood Machinist
492183 Apprentice Wood Turner
492200 Cabinetmakers, nfd
492201 Supervisor, Cabinetmakers
492211 Cabinetmaker
492281 Apprentice Cabinetmaker
492900 Other Wood Tradespersons, nfd
492911 Picture Framer

492913 Furniture Finisher
492979 Wood Tradespersons, nec
492981 Apprentice Picture Framer
492983 Apprentice Furniture Finisher
492999 Apprentice Wood Tradespersons, nec
493100 Hairdressers, nfd
493101 Supervisor, Hairdressers
493111 Hairdresser
493181 Apprentice Hairdresser
494000 Textile Clothing and Related Tradespersons, nfd
494100 Clothing Tradespersons, nfd
494111 General Clothing Tradesperson
494113 Tailor
494115 Dressmaker
494117 Apparel Cutter
494119 Patternmaker-Grader (Clothing)
494179 Clothing Tradespersons, nec
494181 Apprentice Clothing Tradesperson
494200 Upholsterers and Bedding Tradespersons, nfd
494211 Furniture Upholsterer
494279 Upholsterers and Bedding Tradespersons, nec
494281 Apprentice Upholsterer or Bedding Tradespersons
494300 Footwear Tradespersons, nfd
494311 Shoemaker
494313 Medical Grade Shoemaker
494381 Apprentice Shoemaker
494400 Leather Goods, Canvas Goods and Sail Makers, nfd
494411 Leather Goods Maker
494413 Canvas Goods Maker
494415 Sail Maker
494481 Apprentice Leather Goods, Canvas Goods or Sailmaker
498000 Miscellaneous Tradespersons and Related Workers, nfd
498100 Marine Construction Tradespersons, nfd
498111 Shipwright
498113 Boat Builder and Repairer
498181 Apprentice Shipwright
498183 Apprentice Boat Builder and Repairer
498200 Glass Tradespersons, nfd
498211 Flat Glass Tradesperson
498213 Glass Blower
498281 Apprentice Flat Glass Tradesperson
498283 Apprentice Glass Blower
498300 Jewellers and Related Tradespersons, nfd
498311 Jeweller
498313 Gem Cutter and Polisher
498381 Apprentice Jeweller
498383 Apprentice Gem Cutter and Polisher
498411 Florist
498511 Fire Fighter

498600 Drillers, nfd
498601 Supervisor, Drillers
498611 Driller
498700 Chemical, Petroleum and Gas Plant Operators, nfd
498701 Supervisor, Chemical, Petroleum and Gas Plant Operators
498711 Chemical Plant Operator
498713 Petroleum and Gas Plant Operator
498800 Power Generation Plant Operators, nfd
498801 Supervisor, Power Generation Plant Operators
498811 Power Generation Plant Operator
499111 Defence Force Member Not Elsewhere Included
499181 Trainee Defence Force Member Not Elsewhere Included
499200 Performing Arts Support Workers, nfd
499211 Sound Technician
499213 Camera Operator (Film, Television or Video)
499215 Television Equipment Operator
499217 Broadcast Transmitter Operator
499219 Motion Picture Projectionist
499221 Light Technician
499223 Production Assistant (Film, Television or Radio)
499225 Production Assistant (Theatre)
499227 Make Up Artist
499279 Performing Arts Support Workers, nec
499900 Other Miscellaneous Tradespersons and Related Workers, nfd
499911 Optical Mechanic
499913 Diver
499915 Aircraft Safety Equipment Worker
499917 Piano Tuner
499979 Tradespersons and Related Workers, nec
500000 Advanced Clerical and Service Workers, nfd
511100 Secretaries and Personal Assistants, nfd
511111 Secretary
511113 Personal Assistant
590000 Other Advanced Clerical and Service Workers, nfd
591000 Advanced Numerical Clerks, nfd
591111 Bookkeeper
591211 Credit and Loans Officer
599000 Miscellaneous Advanced Clerical and Service Workers, nfd
599100 Advanced Legal and Related Clerks, nfd
599111 Clerk of Court
599113 Law Clerk
599115 Trust Officer
599211 Court or Hansard Reporter
599311 Insurance Agent
599400 Insurance Risk Surveyors, Investigators and Loss Adjusters, nfd
599411 Insurance Risk Surveyor
599413 Insurance Investigator
599415 Insurance Loss Adjuster
599511 Desktop Publishing Operator

599600 Travel Attendants, nfd
599611 Flight Service Director
599613 Flight Attendant
599679 Travel Attendants, nec
599900 Other Miscellaneous Advanced Clerical and Service Workers, nfd
599911 Radio Despatcher
599913 Auctioneer
599915 Visual Merchandiser
599917 Photographer's Assistant
600000 Intermediate Clerical, Sales and Service Workers, nfd
610000 Intermediate Clerical Workers, nfd
611111 General Clerk
612100 Keyboard Operators, nfd
612111 Typist and Word Processing Operator
612113 Data Entry Operator
613111 Receptionist
614000 Intermediate Numerical Clerks, nfd
614100 Accounting Clerks, nfd
614101 Supervisor, Accounting Clerks
614111 Accounts Clerk
614113 Credit Clerk
614115 Cost Clerk
614211 Payroll Clerk
614300 Bank Workers, nfd
614301 Supervisor, Bank Workers
614311 Bank Worker
614400 Insurance Clerks, nfd
614401 Supervisor, Insurance Clerks
614411 Insurance Clerk
614500 Money Market and Statistical Clerks, nfd
614501 Supervisor, Money Market and Statistical Clerks
614511 Money Market Clerk
614513 Statistical Clerk
615000 Material Recording and Despatch Clerks, nfd
615111 Production Recording Clerk
615200 Transport and Despatching Clerks, nfd
615201 Supervisor, Transport and Despatching Clerks
615211 Receiving and Despatching Clerk
615213 Import-Export Clerk
615300 Stock and Purchasing Clerks, nfd
615301 Supervisor, Stock and Purchasing Clerks
615311 Stock Clerk
615313 Purchasing Officer
615315 Order Clerk
615317 Sales Clerk
619000 Miscellaneous Intermediate Clerical Workers, nfd
619100 Inquiry and Admissions Clerks, nfd
619111 Inquiry Clerk
619113 Admissions Clerk

619211 Library Assistant
619300 Personnel Clerks, nfd
619311 Personnel Records Clerk
619313 Employment Office Clerk
619400 Intermediate Inspectors and Examiners, nfd
619411 Customs Inspector
619413 Taxation Inspector
619415 Social Security Inspector
619417 Motor Vehicle Licence Examiner
619419 Transport Operations Inspector
619421 Train Examiner
619423 Water Inspector
619479 Intermediate Inspectors and Examiners, nec
619900 Other Intermediate Clerical Workers, nfd
619911 Proof Reader
619913 Debt Collector
619915 Mail Supervisor
619917 Court Orderly
619919 Bailiff or Sheriff
619921 Coding Clerk
619979 Intermediate Clerical Workers, nec
621000 Intermediate Sales and Related Workers, nfd
621100 Sales Representatives, nfd
621111 Sales Representative (Personal and Household Goods)
621113 Sales Representative (Business Services)
621115 Sales Representative (Builder's and Plumber's Supplies)
621117 Sales Representative (Motor Vehicle Parts and Accessories)
621179 Sales Representatives, nec
621200 Motor Vehicle and Related Products Salespersons, nfd
621211 Motor Vehicle and Caravan Salesperson
621213 Motor Vehicle Parts Interpreter
621300 Retail and Checkout Supervisors, nfd
621311 Retail Supervisor
621313 Checkout Supervisor
630000 Intermediate Service Workers, nfd
631000 Carers and Aides, nfd
631100 Education Aides, nfd
631111 Pre-School Aide
631113 Integration Aide
631115 Teacher's Aide
631117 Aboriginal and Torres Strait Islander Education Worker
631200 Children's Care Workers, nfd
631211 Child Care Worker
631213 Family Day Care Worker
631215 Nanny
631300 Special Care Workers, nfd
631311 Hostel Parent
631313 Child or Youth Residential Care Assistant
631315 Refuge Worker

631317 Aged or Disabled Person Carer
631319 Therapy Aide
631400 Personal Care and Nursing Assistants, nfd
631411 Personal Care Assistant
631413 Nursing Assistant
632000 Hospitality Workers, nfd
632111 Hotel Service Supervisor
632200 Bar Attendants, nfd
632201 Supervisor, Bar Attendants
632211 Bar Attendant
632300 Waiters, nfd
632301 Supervisor, Waiters
632311 General Waiter
632313 Drink Waiter
632411 Hospitality Trainee
639000 Miscellaneous Intermediate Service Workers, nfd
639111 Dental Assistant
639211 Veterinary Nurse
639311 Prison Officer
639400 Gaming Workers, nfd
639411 Gaming Pit Boss
639413 Gaming Table Supervisor
639415 Gaming Dealer
639500 Personal Care Consultants, nfd
639511 Beauty Therapist
639513 Natural Remedy Consultant
639515 Weight Loss Consultant
639600 Fitness Instructors and Related Workers, nfd
639611 Fitness Instructor
639613 Outdoor Adventure Leader
639700 Travel and Tourism Agents, nfd
639711 Travel Agent
639713 Tourist Information Officer
639715 Tour Guide
639900 Other Intermediate Service Workers, nfd
639911 Museum or Gallery Attendant
639913 Driving Instructor
639915 Animal Attendant
639917 Pest and Weed Controller
639979 Intermediate Service Workers, nec
700000 Intermediate Production and Transport Workers, nfd
710000 Intermediate Plant Operators, nfd
711000 Mobile Plant Operators, nfd
711100 Mobile Construction Plant Operators, nfd
711111 General Construction Plant Operator
711113 Bulldozer Operator
711115 Backhoe Operator
711117 Loader Operator
711119 Grader Operator

711121 Excavator Operator
711123 Paving Plant Operator
711125 Road Roller Operator
711211 Forklift Driver
711900 Other Mobile Plant Operators, nfd
711911 Agricultural and Horticultural Mobile Plant Operator
711913 Railway Track Repair Mobile Plant Operator
711915 Streetsweeper Operator
711917 Logging Plant Operator
711979 Mobile Plant Operators, nec
712000 Intermediate Stationary Plant Operators, nfd
712111 Engine or Boiler Operator
712211 Crane, Hoist or Lift Operator
712300 Engineering Production Systems Workers, nfd
712301 Supervisor, Engineering Production Systems Workers
712311 Engineering Production Systems Worker
712400 Pulp and Paper Mill Operators, nfd
712411 Pulp Mill Operator
712413 Paper Mill Operator
712900 Other Intermediate Stationary Plant Operators, nfd
712901 Supervisor, Other Intermediate Stationary Plant Operators
712911 Railway Signal Operator
712913 Train Controller
712915 Concrete Pump Operator
712917 Cement Production Plant Operator
712919 Concrete Batching Plant Operator
712921 Water and Waste Water Plant Operator
712923 Bulk Materials Handling Plant Operator
712979 Intermediate Stationary Plant Operators, nec
720000 Intermediate Machine Operators, nfd
721000 Intermediate Textile, Clothing and Related Machine Operators, nfd
721100 Sewing Machinists, nfd
721101 Supervisor, Sewing Machinists
721111 Sewing Machinist
721200 Textile and Footwear Production Machinery Operators, nfd
721201 Supervisor, Textile and Footwear Production Machinery Operators
721211 Yarn Carding and Spinning Machine Operators
721213 Weaving Machine Operator
721215 Knitting Machine Operator
721217 Textile Dyeing and Finishing Machine Operator
721219 Hide and Skin Processing Machine Operator
721221 Footwear Production Machine Operator
721279 Textile and Footwear Production Machine Operators, nec
729000 Miscellaneous Intermediate Machine Operators, nfd
729100 Plastics Production Machine Operators, nfd
729101 Supervisor, Plastics Production Machine Operators
729111 General Plastics Production Machine Operator
729113 Plastic Compounding and Reclamation Machine Operator
729115 Reinforced Plastic and Composite Production Worker

729117 Plastic Cablemaking Machine Operator
729179 Plastics Production Machine Operators, nec
729200 Rubber Production Machine Operators, nfd
729201 Supervisor, Rubber Production Machine Operators
729211 Tyre Production Machine Operator
729279 Rubber Production Machine Operators, nec
729300 Chemical Production Machine Operators, nfd
729301 Supervisor, Chemical Production Machine Operators
729311 Chemical Production Machine Operator
729400 Wood Processing Machine Operators, nfd
729401 Supervisor, Wood Processing Machine Operators
729411 Wood Processing Machine Operator
729511 Paper Products Machine Operator
729600 Glass Production Machine Operators, nfd
729601 Supervisor, Glass Production Machine Operators
729611 Glass Production Machine Operator
729700 Clay, Stone and Concrete Processing Machine Operators, nfd
729701 Supervisor, Clay, Stone and Concrete Processing Machine Operators
729711 Clay Products Machine Operator
729713 Stone Processing Machine Operator
729715 Concrete Products Machine Operator
729779 Clay, Stone and Concrete Machine Operators, nec
729811 Photographic Developer and Printer
729900 Other Intermediate Machine Operators, nfd
729911 Industrial Spray Painter
729979 Intermediate Machine Operators, nec
731000 Road and Rail Transport Drivers, nfd
731100 Truck Drivers, nfd
731111 Heavy Truck Driver
731113 Furniture Removalist
731200 Bus and Tram Drivers, nfd
731211 Bus Driver
731213 Tram Driver
731311 Automobile Driver
731411 Delivery Driver
731500 Train Drivers and Assistants, nfd
731511 Train Driver
731513 Train Driver's Assistant
790000 Other Intermediate Production and Transport Workers, nfd
791000 Intermediate Mining and Construction Workers, nfd
791111 Miner
791211 Blasting Worker
791300 Structural Steel Construction Workers, nfd
791311 Scaffolder
791313 Steel Fixer
791315 Structural Steel Erector
791317 Construction Rigger
791400 Insulation and Home Improvements Installers, nfd
791411 Building Insulation Installer

791413 Home Improvements Installer
799000 Miscellaneous Intermediate Production and Transport Workers, nfd
799111 Motor Vehicle Parts and Accessories Fitter
799200 Product Quality Controllers, nfd
799211 Product Examiner
799213 Product Grader
799215 Product Tester
799300 Storepersons, nfd
799301 Supervisor, Storepersons
799311 Storeperson
799400 Seafarers and Fishing Hands, nfd
799411 Seafarer
799413 Fishing Hand
799500 Forestry and Logging Workers, nfd
799501 Supervisor, Forestry and Logging Workers
799511 Tree Faller
799513 Forestry Worker
799515 Logging Assistant
799600 Printing Hands, nfd
799611 Printing Table Hand
799613 Printer's Assistant
800000 Elementary Clerical, Sales and Service Workers, nfd
811000 Elementary Clerks, nfd
811111 Registry or Filing Clerk
811200 Mail Sorting Clerks, nfd
811211 Mail Clerk
811213 Postal Sorting Officer
811311 Switchboard Operator
811400 Messengers, nfd
811411 Courier
811413 Postal Delivery Officer
811500 Betting Clerks, nfd
811511 Betting Agency Counter Clerk
811513 Telephone Betting Clerk
811515 Bookmaker's Clerk
811579 Betting Clerks, nec
811611 Office Trainee
811900 Other Elementary Clerks, nfd
811911 Meter Reader
811913 Classified Advertising Clerk
811915 Interviewer
811917 Parking Inspector
811979 Elementary Clerks, nec
820000 Elementary Sales Workers, nfd
821100 Sales Assistants, nfd
821111 Sales Assistant (Food and Drink Products)
821113 Sales Assistant (Fabric, Clothing and Footwear)
821115 Sales Assistant (Other Personal and Household Goods)
821117 Sales Assistant (Postal Services)

821179 Sales Assistants, nec
829000 Miscellaneous Elementary Sales Workers, nfd
829100 Checkout Operators and Cashiers, nfd
829111 Checkout Operator
829113 Office Cashier
829200 Ticket Salespersons, nfd
829211 Ticket Seller
829213 Transport Conductor
829300 Street Vendors and Related Workers, nfd
829311 Street Vendor
829313 Cash Van Salesperson
829315 Door-to-Door Salesperson
829411 Telemarketer
829500 Sales Demonstrators and Models, nfd
829511 Sales Demonstrator
829513 Model
829611 Service Station Attendant
829711 Sales and Service Trainee
829900 Other Elementary Sales Workers, nfd
829911 Rental Salesperson
829913 Materials Recycler
829979 Elementary Sales Workers, nec
831000 Elementary Service Workers, nfd
831100 Guards and Security Officers, nfd
831111 Security Officer
831113 Armoured Car Escort
831179 Guards and Security Officers, nec
831200 Ushers, Porters and Related Workers, nfd
831211 Ticket Collector or Usher
831213 Luggage Porter or Doorperson
831311 Domestic Housekeeper
831411 Caretaker
831511 Laundry Worker
831900 Other Elementary Service Workers, nfd
831911 Railways Assistant
831913 Hair and Beauty Salon Assistant
831915 Sterilisation Technology Worker
831917 Car Park Attendant
831919 Crossing Supervisor
831921 Trolley Collector
831923 Leaflet and Newspaper Deliverer
831925 Examination Supervisor
831927 Prostitute or Escort
831979 Elementary Service Workers, nec
900000 Labourers and Related Workers, nfd
911100 Cleaners, nfd
911111 Commercial Cleaner
911113 Domestic Cleaner
911115 Carpet Cleaner

911117 Vehicle Cleaner
911119 Window Cleaner
911179 Cleaners, nec
920000 Factory Labourers, nfd
921000 Process Workers, nfd
921111 Engineering Production Process Worker
921211 Product Assembler
921300 Meat and Fish Process Workers, nfd
921311 Meatworks Labourer
921313 Meat Boner and Slicer
921315 Poultry Process Worker
921317 Fish Process Worker
921400 Other Food Factory Hands, nfd
921411 Food and Drink Processing Machine Attendant
921413 Baking Factory Hand
921415 Dairy Factory Hand
921417 Fruit and Vegetable Factory Hand
921419 Food Products Millhand
921479 Food Factory Hands, nec
921500 Wood Products Factory Hands, nfd
921511 Sawmill Labourer
921513 Timberyard Labourer
921515 Wood and Wood Products Factory Hand
921517 Pulp and Paper Mill General Hand
921900 Other Process Workers, nfd
921911 Cement and Concrete Plant Labourer
921913 Clay Processing Factory Hand
921915 Chemical Plant Labourer
921917 Rubber and Plastics Factory Hand
921919 Hide and Skin Processing Labourer
921921 Glass Processing Labourer
921923 Fabric and Textile Factory Hand
921925 Footwear Factory Hand
921979 Process Workers, nec
922000 Product Packagers, nfd
922111 Hand Packer
922211 Packager and Container Filler
990000 Other Labourers and Related Workers, nfd
991000 Mining, Construction and Related Labourers, nfd
991100 Mining Support Workers and Driller's Assistants, nfd
991111 Mining Support Worker
991113 Driller's Assistant
991211 Earthmoving Labourer
991311 Paving and Surfacing Labourer
991411 Survey Hand
991511 Railway Labourer
991600 Construction and Plumber's Assistants, nfd
991611 Construction Assistant
991613 Plumber's Assistant

991711 Concreter
991811 Electrical or Telecommunications Trades Assistant
991900 Other Mining, Construction and Related Labourers, nfd
991911 Lagger
991913 Crane Chaser
991915 Fence Erector
992000 Agricultural and Horticultural Labourers, nfd
992100 Farm Hands, nfd
992111 General Farm Hand
992113 Fruit, Vegetable or Nut Farm Hand
992115 Stud Hand or Stable Hand
992117 Shearing Shed Hand
992179 Farm Hands, nec
992200 Nursery and Garden Labourers, nfd
992211 Horticultural Nursery Assistant
992213 Garden Labourer
992900 Other Agricultural and Horticultural Labourers, nfd
992911 Shooter-Trapper
992913 Rural Trainee
992979 Agricultural and Horticultural Labourers, nec
993000 Elementary Food Preparation and Related Workers, nfd
993111 Kitchenhand
993211 Fast Food Cook
993300 Food Trades Assistants, nfd
993311 Pastrycook's Assistant
993379 Food Trades Assistant, nec
999000 Miscellaneous Labourers and Related Workers, nfd
999111 Garbage Collector
999200 Freight and Furniture Handlers, nfd
999211 Freight Handler (Road and Rail)
999213 Waterside Worker
999215 Truck Driver's Offsider
999311 Handyperson
999900 Other Miscellaneous Labourers and Related Workers, nfd
999911 Vending Machine Attendant
999913 Sign Erector
999915 Mechanic's Assistant
999917 Stormwater, Drainage and Sewerage System Labourer
999979 Labourers and Related Workers, nec