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Immigrants in New Zealand:
A Study of their Labour Market Outcomes

by
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Labour Market Policy Group

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A Study of their Labour Market Outcomes

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Abstract

This occasional paper studies the labour market outcomes of New Zealand's overseas-born population, using individual record data from the 1981, 1986 and 1996 Population Censuses. It focuses on a period in which the foreign-born share of the working-age population increased from 16 to 19 percent and Asia became the major region-of-origin for new arrivals. After providing a descriptive profile of New Zealand's immigrants, the paper uses regression analysis to compare the incomes, participation rates and employment rates of immigrants with those of similar New Zealand-born individuals, shortly after arrival and in subsequent years. Moreover, the paper identifies the factors that are associated with relatively good and relatively poor outcomes.

The results indicate that a typical immigrant, despite being relatively highly educated, was likely to have a lower income and lower probability of participation and employment than a New Zealand-born person of the same age and education level in the first years after arrival. This entry disadvantage diminished with years of residence in New Zealand. However, there was substantial diversity in relative labour market outcomes. While immigrants from English speaking countries had relatively small initial differentials that tended to disappear within 10 to 20 years of residence, Asian and Pacific Island immigrants had larger initial differentials that were increasing over the study period, and, in some cases, these immigrants were predicted not to reach parity with natives over their working career.

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Executive Summary

Objectives and Study Design

1 Immigration has always been an important factor in the New Zealand labour market. However, over the last two decades the nature of immigration has significantly changed, as the composition of immigrants shifted away from "traditional source" countries such as Great Britain towards "neighbour" countries in the Pacific Islands and Asia. This study is concerned with the labour market fortunes of New Zealand's old and new immigrants over that period.

2 Participation rates, employment rates and incomes of immigrants may differ from those of the New Zealand born for a variety of reasons, including differences in formal education levels, labour market experience, or the ability to speak English. In addition, there is likely to be a pure adjustment effect which depends on the period of residence in New Zealand: immigrants who just arrived have lower participation rates, employment rates, and incomes than otherwise similar established immigrants because they need time to settle into the new environment.

3 The main objective of this study is to use the 1981, 1986, and 1996 Population Censuses as observation points in order to (i) compare the labour market outcomes of immigrants immediately after arrival in New Zealand and in subsequent years with those of similar New Zealand born individuals, (ii) identify the factors associated with differences in labour market outcomes, and (iii) identify and explain changes in the relative labour market outcomes of immigrants between 1981 and 1996. The indicators for labour market outcomes are labour force status and personal annual income. Apart from experience and education, the analysis takes into account factors such gender, region-of-origin, English speaking status, age-at-arrival, marital and parental status, and location of residence.

4 The study population comprises all working age individuals (defined in this study as aged 15 to 64) living in New Zealand at Census night. Immigrants are persons who lived in New Zealand and were born overseas. Information on legal residence status is not collected in the Census, and the data analysed in this study include some temporary residents such as holders of work permits or student visa. "Recent" immigrants are those who came within the last six years prior to the Census (e.g., after April 1990 in the 1996 Census). The data are

composed of three different subsamples: a 5 percent random sample of all individuals born in New Zealand ("natives"), a 20 percent random sample of all individuals born in the UK or Ireland, and the full population of all other immigrants (i.e., people born outside New Zealand, the UK or Ireland). Cumulated over the three Census years, there are a total of 932,041 observations.

Background: Immigration Flows

5 Between 1981 and 1996, the immigrant working age population grew by 32 percent, while the New Zealand born population grew by 10 percent. As a result the share of foreign born among the resident working age population increased from 16 percent in 1981 to 19 percent in 1996. In Auckland, the immigrant share increased from 26 percent in 1981 to 31 percent in 1996.

6 The share of UK and Irish immigrants among all working age immigrants decreased from 57 percent in 1981 to 36 percent in 1996. Among recent immigrants (those who arrived within the previous 6 years), the share of UK and Irish immigrants fell from 33 percent in 1981 to 15 percent in 1996. Pacific Island immigrants constituted 20 and 23 percent of recent immigrants in 1981 and 1986, respectively, but only 10 percent in 1996. In 1996 almost one out of two recent immigrant was Asian, up from 15 percent in 1981 and 18 percent in 1986. Other regions-of-origin of quantitative importance were North America and Australia.

7 Many of the immigrants recorded in the Census did *not* remain in the country in the long run. Only around two-thirds to three-quarters of immigrants from the UK, Ireland, Europe, North America and Asia who arrived in New Zealand between 1981 and 1985 and were recorded in the 1986 Census were re-enumerated in the 1996 Census. The proportion was lower among Australians (40-50 percent) and higher among Pacific Islanders (80-90 percent). For all region-of-origin groups, young people were less likely to remain in New Zealand than immigrants who were older when they arrived . This may be a consequence of the fact that younger immigrants were more likely to have come to New Zealand for the purpose of study, and may not have had the intention of settling permanently, or may not have had permanent residence approval.

Characteristics of Immigrants

8 In all three Census years, the average immigrant had higher qualification levels than the average native. In 1996, the proportion of working age immigrants with a university qualification was 16 percent for all immigrants, and 25 percent for recent immigrants while only 8 percent of working age New Zealanders had a university qualification. Similarly, 23 percent of all immigrants, and 14 percent of recent immigrants had no qualifications, compared with 30 percent of the New Zealand born. Not all immigrants were equally well qualified. Pacific Islanders had lower qualification levels than any other immigrant region-of-origin group or natives in all three years, both for all and recent immigrants.

9 The average working-age immigrant was at 40 years about 4-5 years older than the average working-age New Zealand born. The average age of immigrants is determined by two factors, namely when, and at what age, immigrants arrived in New Zealand. In 1996, for instance, the average working age immigrant from the UK and Ireland had spent 24 years in New Zealand and had arrived at the age of 20. As a consequence, a typical UK immigrant was with 44 years relatively old. In 1996, the average recent UK immigrant was 5 years older on arrival, than the average recent Pacific Island immigrant.

10 A question on English proficiency was contained in the 1996 Census. Virtually all recent immigrants from Western Europe were proficient in English, compared with 65 percent of recent immigrants from Northeast Asia and 80 percent of recent immigrants from the Pacific Islands. Proficiency rates increased with years spent in New Zealand. However, 13 percent of immigrants from Northeast Asia and 10 percent of immigrants from the Pacific Islands were not proficient after more than 20 years of residence in New Zealand.

Labour Market Outcomes

11 Over the fifteen-year period, employment rates of working age New Zealanders increased from 68 percent in 1981 to 71 percent in 1996, whereas the immigrant employment rate declined from 71 percent in 1981 to 64 percent in 1996. Only 47 percent of recent immigrants were in employment in 1996, down from 65 percent in 1981. Reductions in immigrants' employment rates occurred for both sexes and most age groups. While young recent immigrants in 1996 were about as likely as young natives to be *either* employed *or* in

full-time study, recent mid-aged immigrants (aged 30-54) were 16 percentage points less likely to be so.

12 Immigrants tended to have higher incomes than natives in all three Census years, but the relative income of immigrants fell between 1986 and 1996. The relative income of all working age immigrants decreased from 1.11 to 0.99, while the relative income of full-time employed immigrants decreased from 1.10 to 1.06. Recent immigrants tended to have lower incomes than natives and less recent immigrants. Their incomes were 6 percent below native incomes in 1986 and 25 percent below native incomes in 1996.

13 The labour market outcomes of immigrants differed substantially between region-of-origin groups. UK and Ireland born immigrants had higher participation rates, employment rates and incomes than other groups of workers, including natives, but Asian and Pacific Island immigrants tended to have less favourable outcomes, in particular in 1996.

14 In 1981, Pacific Island immigrants had about the same employment rates (83 percent for men and 50 percent for women) as natives despite their relatively low education levels. Unemployment rates were high by the standards of the time, suggesting some degree of labour market disadvantage even then. By 1996, the male employment rate of Pacific Island immigrants had fallen to 64 percent, 14 percentage points below the native rate, and the female employment rate had stagnated at 49 percent, now 15 percentage points below the female native rate. Even lower employment rates were observed for recent Pacific Island immigrants in 1996, and their unemployment rates were 26 percent for men and 32 percent for women. The 1996 average income of Pacific Islanders was 28 percent below the average income of the New Zealand born.

15 Asians arriving before 1986 had labour market outcomes similar to those of immigrants from regions-of-origin such as Europe or Australia. Migrants arriving in the early 1990's, however, had below average employment and income outcomes, relative to recent immigrants from other regions as well as relative to earlier immigrants from Asia. Recent immigrants from Asia in 1996 had the lowest full-time employment rate among all recent immigrants (including Pacific Islanders). Only 31 percent of recent working-age Asian immigrants were in employment in March 1996. This compares with 42 percent of recent male Pacific Island immigrants and 76 percent of recent UK immigrants.

16 Part of the discrepancy in employment rates between Asian and other immigrants can be explained by differences in study attendance, as the Census definition of immigrants includes individuals who are likely to be in New Zealand mainly for the purpose of full-time study. 34 percent of recent Asian immigrants (and 74 percent of those aged 15-19) participated in full-time training and education courses at the time of the 1996 Census, compared with 13 percent of Pacific Island and 6 percent of UK and Irish immigrants. Adding employment and full-time study together into an "activity rate", we find that Asian recent immigrants were closer to other recent immigrants, although a substantial differential remains.

17 A further explanation for the relative decline in the relative labour market position of recent Asians could be their high proportion of "very recent" migrants, i.e. those having arrived within the previous 12 months, or within the previous two years. The empirical support for this hypothesis is weak, however, since Pacific Island and other immigrants had similar proportions of "very recent" immigrants (as a fraction of all *recent* immigrants from their region).

18 The conclusion from this first part of the analysis is that the relative labour market position of an average immigrant, measured through employment rates and incomes, deteriorated between 1986 and 1996. Some of this deterioration is compositional. Since recent immigrants always fare "worse" in the labour market than established immigrants, the observed increase in the proportion of recent immigrants among all immigrants from 15 percent in 1981 and 1986 to 27 percent in 1996 worsens the average outcome, ceteris paribus. Compounding this effect, however, was a substantial deterioration in the relative position of recent immigrants from Asia and the Pacific Islands.

Regression Analysis

19 The main limitation of the preceding descriptive analysis is its failure to provide a systematic framework for comparing the outcomes of immigrants with those of similar natives, where "similar" refers to natives with the same economic and demographic characteristics. The basic econometric tool for such a comparison is regression analysis where difference in incomes or labour force status for otherwise similar immigrants and natives are estimated by including the relevant individual economic and demographic attributes as regressors.

20 Income regressions were conducted for all employed individuals, in the aggregate and by region-of-origin, and separately for the three Census years. Regressions included hours of

work, a polynomial in age, qualification and gender as right hand side variables. The relative income differential between immigrants and natives that controls for differences in economic and demographic characteristics is also referred to as the "adjusted income differential". Recall that immigrants i) always had relatively high levels of formal qualifications, and ii) were on average older than New Zealand born workers. As a consequence, adjusted income differentials tended to be below the unadjusted ones (smaller if positive, and larger in absolute value if negative).

21 In adjusted terms, the relative income position of recent immigrants decreased from 15 percent below the native income level in 1986 to 31 percent below in 1996 (The unadjusted differentials were -9 and -20 percent, respectively). The adjusted income differentials decreased as immigrants spent more time in New Zealand. Panel comparisons (obtained by following a group of immigrants who arrived during the same period of time over the three Census years) yielded lower 15-year rates of income convergence than cross-section comparisons.

22 A disaggregation by country-of-origin shows an increasing income disparity between immigrants who were born in predominantly English speaking countries and those who were not. For simplicity, we refer to those two groups as migrants with English speaking background (ESB) and migrants with non-English speaking background (NESB). Over time, the relative position of recent ESB migrants improved (the entry disadvantage decreased from -18 percent in 1981 to -9 percent in 1996), whereas the relative position of recent NESB migrants deteriorated (to -49 percent in 1996, down from -24 percent in 1981). Moreover, the relative income position of ESB migrants tended to improve faster with period of residence than the relative position of NESB migrants.

23 The low relative incomes of Pacific Island immigrants can be partially explained by relatively low levels of formal qualifications. Accounting for differences in endowments and economic activity (qualifications, age, gender and hours of work) cuts the income differential of recent Pacific Island immigrants by almost 40 percent in both 1981 and 1996, and by even more for some non-recent immigrant cohorts. Both Asian and Pacific Island immigrants experienced a substantial drop in adjusted relative incomes in 1996. While the decline affected all Pacific Island immigrants (including "established" immigrants), the decline was by and large restricted to Asian immigrants who had arrived recently.

Immigrant and Native Age-Income Profiles

24 As workers get older, their incomes typically increase. Moreover, increases tend to be larger at younger ages and to flatten for mid-aged workers. Such profiles exist for both immigrants and natives. In the descriptive section, we found that recent immigrants had incomes below those of natives whereas established immigrants had incomes comparable to, or higher than, those of natives. This suggests that the growth in income that is associated with one additional year of age (which is also one additional year of residence for immigrants) was larger for immigrants than for natives. Higher growth leads to convergence, and eventually "overtaking".

25 In order to explicitly estimate the relative age-income profiles of immigrants and years to convergence from cross-section data alone, one has to assume that today's immigrants are not systematically different from immigrants who arrived in New Zealand some ten or twenty years ago, conditional on observed economic and demographic characteristics. This assumption is questionable, and can in fact be tested using a pseudo-panel method that is referred to as the "pooled regression approach".

26 In the pooled regression approach, the effect of years of residence is modelled by a second order polynomial. In addition, "cohort effects" measure the relative income disadvantage on entry (relative to natives with similar characteristics) for a group of immigrants that arrived during a given (five-year) period of time. Differences in cohort effects are caused by differences in *unobserved* productive characteristics (i.e., "cohort quality") among the cohorts. The time to convergence increases with the size of the entry differential and decreases with adjustment speed. Extensions of the basic model enable us to study the effect of qualifications, English speaking background, region-of-origin, and gender on the time to convergence.

27 The analysis reveals no explicit trend in cohort effects over most of the last 40 odd years. Average entry differentials stayed around –20 percent between pre-1960 arrivals up to the 1986-90 cohort. The estimated time to convergence was 28 years. The recent 1991-95 cohort, however, had a substantially larger entry disadvantage than previous cohorts (-30 percent) *on average*. If we decompose by region-of-origin, we find that the decline between the 1986-90 and the 1991-95 cohorts was limited to Asian and Pacific Island immigrants. Other regional cohorts showed either no change or even an improvement in the entry differential, most notably the cohorts from Australia and the UK. Using a model with common assimilation

profiles but differential intercepts by region-of-origin, we estimate that an average British cohort took 15 years to reach the income levels of similar natives, compared to 46 years for an average Asian cohort.

In the following results are reported separately for men and women.

MALE INCOME RESULTS

28 Highly qualified immigrants were more likely to reach income parity with qualified natives than less qualified immigrants (with less qualified natives). The specific effect of qualifications on the adjustment profiles varied for different groups of immigrants. In particular, more qualified ESB migrants had a *smaller* entry disadvantage and *slower* subsequent income growth than less qualified ESB migrants, whereas more qualified NESB migrants had a *larger* entry disadvantage and *faster* subsequent income growth. One possible interpretation is that the transferability of skills was higher for ESB migrants than for NESB migrants, giving the former group a higher return to skills upon arrival.

29 Skilled Asian migrants had a particularly large initial income disadvantage. The income of a 25-year old university graduate even fell short of the income of a native school graduate. However, due to a high estimated rate of income growth, parity was reached within 20 years despite the large initial gap. Asian migrants with school qualification, by contrast, had slow convergence rates, leaving them with a persistent estimated income gap of 14 percent even after 25 years of residence.

30 Similar results are obtained for most immigrants when we predict the future assimilation path of the 1991-95 arrival cohort over the next 25 years. However, among NESB migrants, the initial income gap was in general larger for recent arrivals than for the average previous arrival. In particular, the estimated regression coefficients imply a large and persistent income gap for both recent Pacific Island immigrants, independently of their level of qualification, and recent less skilled Asian immigrants.

FEMALE INCOME RESULTS

31 Female age-income profiles were substantially flatter than male ones. Two contributing factors can be identified. Firstly, the female returns to experience were smaller (for natives and immigrants). Secondly, female immigrants had slower rates of income adjustment. Furthermore, female immigrant incomes were less responsive to qualification or to English-speaking status than male incomes.

32 The estimated income gap between immigrants and natives was more persistent among women than among men. Both ESB and NESB migrants reached parity with natives only after 25 years. There was substantial variation within the group of female NESB migrants. Pacific Island women experienced no income convergence *at all* over a 25-year period. Asian women's incomes, by contrast, grew fast and equalled those of natives after 15 years in the case of university graduates, and after 25 years in the case of school graduates

A MORE DETAILED ANALYSIS OF THE 1996 CENSUS

33 Extended regressions for the 1996 Census were used to investigate the effects of language, location of residence, place where a qualification was obtained, field of tertiary study, and occupation on income. Proficient immigrants' incomes exceeded those of otherwise similar non-proficient male immigrants by an estimated 37 percent. The effect of a New Zealand degree was positive but small (3 percent). The income differential between Auckland and the rest of New Zealand for otherwise similar male workers was 6 percent. The male returns to a university qualification (relative to being without qualification) were smallest for Maori studies and Agriculture, Forestry and Fishing, with 20 and 38 percent, respectively. At the higher end of the spectrum were Health, Computing and Information Technology and Business Administration with 86, 71 and 71 percent, respectively. The female distribution looked similar, although more compressed.

34 Even after we control for English proficiency, country in which a qualification was obtained, location of residence, field of study and occupation, the entry disadvantage of the 1991-95 cohort remained at 31 percent for men and 28 percent for women, which is about the same as the 30 percent differential in a regression with age and basic education controls (3 categories) only. This result arises since the average characteristics of the 1991-95 cohort were not that different from the characteristics of previous cohorts.

PARTICIPATION AND EMPLOYMENT RATES

35 The following results are based on pooled logit regressions for participation and employment (conditional on participation). We explicitly discuss predicted age-participation and age-employment profiles for immigrants who arrived in New Zealand in 1996 at the age of 25 and same aged natives over the next 25 years, i.e., up to 2021. Similar results are obtained for different arrival cohorts and different ages.

Male Results

36 A 25 year old native with a university qualification had a predicted participation probability of 97 percent in 1996. The predicted 1996 participation probabilities for otherwise similar migrants were 92 percent for English speakers and 67 percent for non-English speakers. As individuals become older, participation rates are predicted to increase up to the age of 40 - 45, and to decrease thereafter. Concave age-participation profiles are observed for all groups.

37 The predicted increases in participation rates after 1996 are generally faster for foreign-born men, leading eventually to convergence. For English speaking migrants, parity with native participation rates is reached after an estimated 20 years. Non-English speaking migrants are predicted to have permanently lower participation rates, although the participation gap is reduced to 4 percentage points for university graduates and to 12 percentage points for school graduates after 25 years of residence.

38 Predicted participation rates of university graduates are always above those of school graduates, and the differences tend to be larger for migrant men than for native men. The largest initial relative participation gap in 1996 is predicted for Asian immigrants (about 50 percentage points for school graduates and 36 percentage points for university graduates). However, they also have very high predicted growth rates and after 15 years the gap for university graduates is predicted to narrow down to 3 percentage points, while the gap for school graduates is predicted to narrow down to 8 percentage points. Participation rates for Pacific Island immigrants converge very slowly or not at all. For instance, the relative participation rate of a Pacific Island immigrant with school qualification is predicted to fall slightly over time, from a 15 percentage point gap at the age of 25 in 1996 to a 16 percentage point gap at the age of 50 (in 2021).

39 Male employment rates (conditional on participation) in 1996 were higher for more highly qualified individuals. Estimated 1996 migrant employment rates were typically below

those of natives when they entered the country (the only exception were Australian immigrants with a university qualification). However, the estimated speed of adjustment is high. English speaking migrants had an initial gap of about 10 percentage points. They are predicted to reach parity with natives after 10 years of residence, and to have higher employment rates than natives thereafter.

40 Male NESB migrants had a much larger initial employment gap in 1996 than ESB migrants. School graduates entered with a gap of 33 percentage points, while university graduates entered with a staggering 52 percentage points gap. The low employment rate of skilled NESB migrants suggests that those migrants experience particular problems in transferring the skills that they have acquired in their home country. The subsequent growth in relative employment rates is predicted to be very fast for NESB migrants, and university graduates come within 5 percentage points of natives within 10 years and overtake them after a further 6 years. The only group of immigrants that is predicted not to converge to native male employment rates is less skilled Pacific Island immigrants. Based on the logit estimates, they will have a persistent employment gap of 6 percentage points after 25 years of residence.

FEMALE RESULTS

41 Female participation patterns differ quite substantially from the male ones. Firstly, women have a more pronounced life cycle participation pattern. In 1996 native women with school qualification had an estimated participation rate of 64 percent at the age of 25. Over the next 25 years, this rate is predicted to increase first by 11 percentage points to 75 percent, before dropping back by 19 percentage points to 56 percent at the age of 50. The male changes by contrast were contained in within a band of 4 percentage points.

42 Secondly, the female participation rates were more responsive to qualification levels than males. For instance, the 1996 participation rates of women with university qualification exceeded those of same aged school graduates by up to 13 percentage points. For men, the corresponding difference did not exceed 3 percentage points. This finding reflects the relatively high elasticity of female labour supply with respect to labour market opportunities and wages.

43 Thirdly, immigrant women had much lower relative participation rates than immigrant men. Based on the logit estimates, immigrant participation rates are with one exception (European and North American university graduates) unlikely to reach the participation rates of native women over the next 25 years after 1996. Even, UK and Irish female immigrants have

participation rates that are predicted to stay below those of natives by 16 percentage points (for university graduates) and 10 percentage points (for school graduates) for most of their careers. The two regions with the largest relative differences are Asia and the Pacific Islands, with gaps of up to 60 percentage points. While some convergence takes place for Asian women, no convergence is predicted for Pacific Island immigrants.

44 Conditional on participation, female immigrants have initially much lower employment rates than natives. However, convergence happens fast, and after 10 years, immigrants look much like natives. As for men, there are three notable patterns. Firstly, employment rates are in general higher for women with university qualification than for women with school qualification only. Secondly, in particular among NESB migrants, the entry disadvantage relative to native women of similar qualification increases with the skill level, as does the subsequent speed of adjustment. Overall, university trained immigrants catch-up faster with natives than less skilled migrants. As was the case for men, female Pacific Island immigrants with school qualification only show no signs of convergence.

OVERALL SUMMARY

45 The results from this study indicate that a typical immigrant arrived with an entry disadvantage (for instance, an income shortfall of about 20 percent relative to a similar native) that disappeared after 20-30 years of residence. However, immigrants arriving in the early 1990s came with a much larger entry disadvantage than immigrants arriving in the second half of the 1970s or first half of the 1980s. The decline in relative labour market outcomes cannot be explained by the changing region-of-origin composition, or by changes in any of the observed characteristics. One possible explanation is that structural changes in the labour market have been responsible for an increasing premium migrants with English speaking background.

1. Introduction

This study provides an empirical analysis of New Zealand's immigrants over the last two decades. Two key questions are addressed: What types of immigrants have been attracted to New Zealand? And what has been their labour market experience? The first question comprises factors such as the demographic characteristics of immigrants, the qualification levels that immigrants possess on arrival, and region-of-origin. In addressing the second question, the study considers employment patterns and income.

Immigrant characteristics and economic performance are closely related. Immigrants who have high levels of productivity or skills that are in high demand are more likely to make a significant economic contribution than are immigrants who have difficulty finding employment or do not participate in the labour force. Their tax contributions are likely to be higher, and their need for social assistance lower. The benefits of immigration to New Zealand are likely to be higher if immigrants fully realise their productive potential and perform well in the labour market. Therefore, an understanding of who gets attracted to New Zealand and how these immigrants perform subsequently, what factors distinguish "successful" immigrants from less successful ones, and how these factors are influenced by immigration rules, is essential for formulating an immigration policy that maximises the beneficial effects of immigration on New Zealand's welfare.

The economic approach to immigration recognises that immigration flows are selective. Immigrants come because they want to better their lives. The choice of a particular destination country is influenced by perceived employment and income opportunities as well as by the costs of migration. These costs and benefits might be pecuniary or non-pecuniary, and are affected by immigration rules (such as language requirements and the provisions for family sponsorship) and other policies (such as tax laws). New Zealand competes for immigrants with other countries, Australia being one of them, through both labour market opportunities and immigration rules. By lowering or increasing the costs and benefits for certain groups of potential immigrants, immigration policies affect the mix of immigrants.

The recent profound changes in New Zealand's immigration flows and policies provide an interesting background for studying these mechanisms. While New Zealand has always been a country of immigration, most immigrants used to originate from a relatively limited set of

countries, mainly the UK and Ireland. The last two decades witnessed substantial shifts in immigration selection policies and criteria. Concurrently, an increasing share of immigrants arrived from the Pacific Islands and Asia. The consequences of the policy changes and the resulting changes in the composition of immigration flows are controversial in academic and policy circles alike.

This study is designed to contribute to the debate by providing empirical evidence on the characteristics and labour market performance of recent immigrants. It makes use of micro data from three Population Censuses for the years 1981, 1986 and 1996. These data contain detailed information on hundreds of thousands of immigrants over the fifteen-year period. They allow, for instance, for a comparison of qualifications that immigrants bring to New Zealand as they arrive in the country, over time, across regions-of-origin, as well as with those of New Zealand born individuals. Similarly, the data can be used to analyse income and employment differences between immigrants and natives, or between immigrants that arrived at different points in time.

We focus on factors such as education, experience, and employment status that have been found to be related to earnings patterns. The discussion will be conducted using human capital ideas that provide a convenient shorthand, as well as theoretical and empirical framework for analysing these issues. The human capital approach provides one explanation why recent immigrants are distinct from those who have spent already years or decades in the country. When immigrants arrive in New Zealand, their stock of viable human capital tends to contract. Knowledge that was specific to the country-of-origin becomes obsolete, while knowledge specific to New Zealand needs to be acquired. Examples are the initial difficulties immigrants may have in communicating in New Zealand (due to a lack of English proficiency, or a lack of knowledge of the local institutions), or a lack of information among employers concerning immigrants' credentials and qualifications. It follows that immigrants tend to earn less initially and to have lower employment rates than natives with similar qualifications and similar levels of labour market experience.

As immigrants spend time in New Zealand, their initial entry disadvantage decreases for several reasons. For instance, immigrants may be able to generate credible information about their skills, improve their language skills, and acquire valuable local information. As these processes are at work, the labour market outcomes of immigrants improve relative to natives. The most widely documented empirical phenomenon is income growth relative to similar natives, or

"assimilation". Moreover, it is possible that immigrants, in the long run, reach even higher incomes than similar natives do since they are "self-selected". Given that they chose to migrate in the face of present costs but uncertain future returns, it is possible that they have above average motivation and ambition, personal characteristics that are likely to be rewarded in the labour market in terms of higher income or employment probabilities.

On the other hand, there may be factors that might put immigrants at a permanent disadvantage. Among those factors are various labour market imperfections, which impede the utilisation of immigrant skills in the host country. For example, the professional qualifications of immigrants may not be recognised by host country occupational registration bodies. Further there may be statistical discrimination specifically against immigrants if host country employers judge them to be less productive on average than native-born workers As a result immigrants may become concentrated in less productive jobs. Whether or not these effects are quantitatively important is an empirical question.

It follows from the above discussion that outcomes for recent and established immigrants are likely to differ. The analysis of recent immigrants informs about the type of immigrants attracted to New Zealand, and how incoming waves of immigrants have changed over time in response to changes in immigration policies and perceived economic opportunities. A comparison between recent and established immigrants gives insights into the post-settlement adjustment processes. Initial labour market position and speed of adjustment jointly determine the long-term position of immigrants in the New Zealand labour market.

2. Objectives and Structure

The overall objective of this study is to study the role of immigrants in New Zealand's economy by analysing their characteristics and labour market outcomes using the 1981, 1986, and 1996 Censuses as observation points. In particular, the study is designed to compare the characteristics of immigrants at the time of entry with those of native born individuals; compare the labour market performance of immigrants in the years after entry with those of comparable native born; identify the main factors associated with differences in labour market performance (immediately after entry and in subsequent years); estimate the speed and extent of immigrant convergence to the labour market performance of New Zealand born individuals after arrival; and identify any significant changes in the characteristics at time of arrival, labour market performance, and adjustment of immigrants between 1981 and 1996.

In addressing these objectives, the following research questions will be answered:

(i) What are the observable differences between recent immigrants and New Zealand born individuals in productivity related characteristics, and how have these differences changed between 1981 and 1996?

(ii) What differences are there between the labour market outcomes of immigrants and those of New Zealand born individuals, and how have those differences changed between 1981 and 1996?

(iii) How much of the observed immigrant/native differences in labour market outcomes can be explained in terms of differences in measured individual characteristics?

(iv) Do differences in labour market performance between immigrants and New Zealand born individuals diminish in the years following settlement? How rapid is this adjustment process, and when does convergence occur?

The analysis is conducted both at the aggregate level for all immigrants, and at a disaggregated level by region-of-origin and by historical period of arrival in New Zealand. The main indicators that are available for assessing labour market outcomes are labour force status at the time of the Census, and personal income during the previous twelve months.

The study is structured as follows: Section 3 starts with a review of past research on the labour market outcomes of migrants. Particular attention is paid to results from three previous Census based studies on New Zealand immigration. Section 4 introduces some further issues that shape

the methodology adopted in this study, such as the nature of cohort effects, the problem of measuring the improvement in immigrants' labour market outcomes over time, and the problem of return migration. The next section lays out the design of this study. Data issues are discussed in Section 6, while Section 7 gives descriptive results. Section 8 provides the methodology for a regression-based analysis of immigrants' labour market outcomes, and results. Section 9 concludes. The appendix contains 79 tables. Only some of them of them are referred to in this report. The complete set of tables and figures is included in order to provide material for potential further analyses by interested parties.

3. Review of Past Research

3.1. Earnings

North American studies of immigrant performance have largely focused on immigrants' relative earnings. Borjas (1994a) reviews the findings of the US literature. Generally speaking, studies have found that immigrants earn lower wages than the native born immediately after arrival in the United States, but there is considerable earnings catch-up in subsequent years. Another key finding is that there has been an overall decline in the relative skills and relative earnings of successive immigrant cohorts in the post-war period.

However, most of this decline is attributable to changes in the national origin mix rather than to declining "quality" (earnings capacity) within cohorts of the same origin (LaLonde and Topel, 1991). In particular, the increasing proportion of Mexican and Latin American immigrants has increased the proportion of immigrants with lower levels of education and lower English language proficiency. While it is undisputed that immigrants from Mexico and Latin America have larger initial earnings disadvantages than other immigrants, their subsequent rate of relative earnings growth is subject to controversy. Lalonde and Topel (1991) compare Mexican immigrants to US-born ethnic Mexicans and find a fast speed of convergence. Immigrants overcome most of their initial shortfall relative to natives of their ethnic group in their first ten years of residence. Relative to natives, most studies suggest relative earnings growth but point out that the earnings of recent cohorts of immigrants (those arriving in the 1970s and 1980s) are unlikely to reach parity with the overall earnings of the native-born (see, e.g., Borjas 1985). A more pessimistic conclusion is reached by Schoeni et al. (1996) who find no evidence for relative earnings growth for Mexicans.

The relative earnings and earnings catch-up of immigrants settling in Canada and Australia have been examined in a number of studies (for Canada, see Baker and Benjamin, 1994, and Bloom, Grenier and Gunderson, 1995; for Australia, see Beggs and Chapman, 1988 and 1991, and Wooden, 1994). Those studies have obtained broadly similar results to those of the US literature, except in so far as differences across countries in the "quality" of immigrant intakes shape immigrants' subsequent labour market performance. A key finding of the Australian research, supported by numerous studies, is that immigrants from English-speaking backgrounds perform significantly better than immigrants from non-English-speaking

backgrounds. Recent estimates of the rate of earnings catch-up among non-English speaking migrants in Australia and Canada, obtained in studies which attempt to control for cohort heterogeneity, suggest that the rate of earnings catch-up is very slow, and considerably below what was estimated in earlier studies (Beggs and Chapman, 1988; Baker and Benjamin, 1994). Differences in measured endowments are generally found to explain a large part of the immigrant-native earnings gap.

An important finding of Beggs and Chapman (1991) is that the relative wage of immigrants in Australia varies by level of education as well as by English proficiency. At lower levels of schooling, immigrants earn the same or more than similar natives do. At higher levels of schooling, this situation is reversed. Beggs and Chapman conclude that "as education increases, the labour market position of immigrants relative to like-natives systematically deteriorates". One possible explanation of this finding is that more educated workers have a larger proportion of skills that are specific to the country-of-origin and cannot be transferred.

Many studies of immigrant earnings focus exclusively on men. The experience of immigrant women may differ significantly, particularly if they are more likely to be "tied movers" (i.e. non-principal residence applicants) - persons who would not have migrated on their own but migrate as part of a household. Borjas (1994a) cites a US study showing that the relative earnings of immigrant women are negatively correlated with years since immigration.

3.2. Labour force status

Labour force status can be measured in a variety of ways. The predominant approach is to analyse the determinants of labour force status *at Census day*. An alternative approach is to take a longitudinal perspective and analyse the incidence of labour force status over time. For instance, Maani (1994) analyses the determinants of the cumulative total weeks of employment and unemployment during a four-year period for immigrants in Australia. She furthermore analyses the total number of unemployment spells[1]. Either approach appears to produce results that are mostly consistent with those found earlier for earnings. In particular, factors that tend to increase earnings tend to lead to higher full-time employment and to lower unemployment.

[1] Another longitudinal aspect of labour market outcomes, namely the duration from entry into the country to the first full-time job, is analysed in Eckstein and Shachar (1996).

For instance Chiswick et al. (1997) report that recent immigrants have a lower employment ratio than those with a longer duration of residence, a differential that declines rapidly and completely disappears by 10 years of residence. Chiswick et al. (1997) also consider an alternative concept, the *activity rate*, where a person is active if either employed, enrolled in school, or both, with similar results. For Australia, Wooden (1994) reports that participation rates of immigrants display cohort effects similar to those observed for earnings. While participation rates of recent immigrants are well below those of natives, participation rates of earlier immigrants (1970's and earlier) were generally higher than those of persons born in Australia. This change can be mostly explained by a changing composition of the immigrant intake. Moreover, there is evidence for relatively fast assimilation with respect to participation rates within two to five years (in the case of male immigrants at least). Again, English speaking ability is one of the main factors in explaining differences between immigrants. Results for two other aspects of labour force status, employment and unemployment, are predictably very similar.

Another dimension of immigrant employment patterns is the propensity of immigrants to be self-employed, as opposed to wage or salary earners [2]. In Australia, the rate of self-employment among the employed is higher for immigrants than for the native born (Wooden, 1994). This also appears to be the case in the United States and Canada. A seminal study testing possible explanations for above average self-employment rates of immigrants is Yuengert (1995). He finds that tax avoidance and the size of the self-employment sector in the country-of-origin can explain most of the immigrant-native self-employment differential.

Yet another concept of labour market outcomes is "idleness", defined by Fry (1997) as a "prolonged separation from labour market institutions" through involvement in unproductive activities - labour market withdrawal and institutionalisation. Fry defines "prolonged spells" of non-participation as a lack of employment during the 15 months prior to Census week Furthermore, he explicitly takes into account the institutionalised population. The basic finding is that US immigrants have, over time, become increasingly idle. While in 1960 male immigrants were about 2 percentage points less likely than natives to be inactive, this differential had vanished by 1990, although native idleness had increased over the period from 6 percentage points to 8 percentage points (for men aged 16 to 54).

[2] See, for instance, Kidd (1993).

3.3. Occupational status

The question of occupational mobility can in general not be analysed with Census data. Firstly, occupation is reported only for employed persons. Secondly, there is no information on the occupation before migration. Nevertheless, there are some studies for the US and Australia that have used other data sources to tackle this issue. These studies found evidence of downward occupational mobility in the first years of residence in the country of destination. For example, Chiswick (1978) found that around 25 percent of male immigrants to the US experienced a decline in occupational status on arrival. Similarly, two recent studies using data from the pilot Longitudinal Survey of Immigrants to Australia provide evidence of significant downward mobility among immigrants who were in professional occupations before arrival (see Flatau et al., 1995). Again, the incidence of post-entry occupational downgrading is higher among migrants from non-English speaking countries However, there is evidence that many immigrants recover their occupational position as their period of residence lengthens.

3.4. New Zealand research

Summaries of empirical trends in gross and net migration data over the last few decades, together with some analysis, are given in Trlin and Spoonley (1986, 1992, 1997). Three previous studies of the labour market outcomes of immigrants based on Census tabulations are Poot, Nana and Philpott (1988), Poot (1993a) and Zodgekar (1997). [3] The Poot et al. (1988) book analyses the labour force status of recent immigrants in the 1981 Census, while Poot (1993a) and Zodgekar (1997) study the relative incomes of immigrants in the 1986 and 1991 Census, respectively.

The Poot et al. (1988) study shows that in 1981 recent migrants from the UK, Australia and North America had labour market activity patterns that were relatively similar to those of the New Zealand born. Rates of self-employment were relatively high among recent immigrants from the "rest of Europe" (other than the UK) and very low among recent immigrants from the Pacific Islands and Asia. Male full-time labour force participation rates were relatively low, and part-time participation rates relatively high, among recent immigrants from Asia, which may have been a consequence of many members of this group being enrolled at New Zealand

[3] None of these studies used unit record data.

universities. Unemployment rates among recent immigrants from the Pacific Islands were several times higher than those of natives and other immigrant groups [4].

In an attempt to explore the process of adjustment to the New Zealand labour market, the authors also graphed labour force participation and unemployment rates by length of residence. Three subgroups of immigrants are considered: those born in the UK, Australia, and the Pacific Islands. The data for New Zealand born individuals were age-standardised to match the age structure of the immigrant groups involved in each comparison. It was found that the rates of unemployment among male immigrants from the UK and Australia were initially higher than those of New Zealand born males, but these rates declined to below New Zealand-born levels within three years of residence. Female unemployment rates for immigrants from Australia and the UK showed similar patterns of convergence to native rates within a few years. By contrast, immigrants born in the Pacific Islands appeared to take much longer to "achieve" the unemployment rates of the New Zealand born (up to 15 years). Note, however, that these conclusions were drawn from considering a single cross-section, and therefore cannot separate genuine adjustment and cohort effects. [5]

Poot (1993a) studies the median annual incomes of immigrants using data from the 1986 Census. He implicitly controls for four factors (using tabulated data for 90 origin/occupation/cohort cells rather than unit record data): age (by adjusting the income of natives, the comparison group, in order to match the age distribution of immigrants), occupation (providing separate analyses for professional and technical workers, clerical workers, and production and transportation workers), country-of-origin (Australia, UK and Pacific Island) and years since migration (using 10 five year cohorts from 0 to 50 years)[6]. Education is the only major factor that is not fully controlled for by the focus on these specific occupational groups.

Overall, only Pacific Islanders behaved like typical migrants: they had a substantial income disadvantage upon entry, and a relatively steep years since migration-income profile. However,

[4] Pre-1991, a firm job offer was required in order to obtain a residence permit for main applicants under the employment category. But this requirement, ceteris paribus, increased employment rates and decreased unemployment rates immediately after entry for this category of immigrants.

[5] This particular issue is discussed in greater detail below.

[6] Methodologically, Poot's (1993a) approach could be classified as "non-parametric", since he does not impose a parametric functional form for the relation between earnings and years since migration.

they did not reach parity with the income of natives before 35 or 40 years in New Zealand, a potentially spurious effect, since this is about the time the government provided national superannuation takes over. UK born immigrants typically outperformed natives from the start (i.e. they did not have an initial entry disadvantage), while Australians were similar to natives.

Poot proceeds by presenting results from a crude cohort analysis. In particular, he compares the income growth of two cohorts of recent immigrants, those who arrived between April 1976 and March 1981 and those who arrived between and April 1971 and March 1976, in the two Census years 1981 and 1986, both across ethnic groups and with the income growth of natives. This analysis controls for professional status. He finds that, generally speaking, the income growth was faster for the more recent cohort. Furthermore, the income growth of recent cohorts exceeded the income growth of natives while the income profiles of the earlier cohort was similar to the profile of natives. This suggests a fast rate of assimilation, although the initial income disadvantage was not given and hence we cannot establish whether or not catch-up occurred over the lifetime.

Interestingly, the estimated age-income profiles for Australian and UK born immigrants, while very similar to those of natives in the 1986 cross-section, were steeper in the inter-Census analysis. The opposite, steeper profiles in the cross-section, was observed for Pacific Islanders. Both observations could be caused by cohort effects which, in turn, might be linked to a changing average "quality" of immigrants, an increasing quality for Australian and UK born immigrants, and declining "quality" for Pacific Islanders. To the extent that one is willing to associate "quality" with obtained qualifications, this conjecture could be verified by tabulating qualifications by year of arrival. However, Poot (1993a) did not provide this information.

Zodgekar (1997) uses 1991 Census data to analyse the characteristics (such as age, education and region-of-origin) and relative incomes of immigrants. He finds that immigrant men's average income was 7.3 percent above the average income of natives. Once he controls for differences in the age and education distribution, this relative income advantage turned into a disadvantage of 3.9 percent. He notes that immigrants from traditional source countries such as the UK had much higher average incomes than immigrants from the Pacific Islands and Asia, even after including the controls. He proposes as one possible explanation for the relative disadvantaged position of Pacific Island migrants that many of them came in the early 1970's in response to a labour shortage in manufacturing, a sector that had downsized substantially by 1991.

Unfortunately, his study cannot control for the period of residence in New Zealand, a question not asked in the 1991 Census. However, there was a question on the place of residence 5 years prior to the Census. Zodgekar classifies as "recent" immigrants those who said that they resided abroad at that time and finds that *recent* Pacific Island and Asian immigrants were more severely disadvantaged. With respect to Asians, Zodgekar (1997, p. 53) notes that "immigrant males from Asia, in spite of having the greater advantages of more favourable age and educational distributions, earned less than New Zealand born males even before controls for age and education. It would appear that immigrants from Asia may have experienced difficulties in having their educational credentials and overseas work experience recognised in New Zealand".

4. Further Issues for Studying New Zealand's Immigration

4.1. The nature of cohort effects

Recall one of the key questions of this study: What type of immigrants does New Zealand attract, and how has this changed over time, if any? The second part of the question can be recast as "have there been changes in *cohort quality* over time". An immigration cohort is a group of immigrants arriving during the same year or period, for instance those arriving between 1976 and 1980. Depending on the study context, cohorts may be defined to include *all* immigrants arriving during the period, or only a subset, such as immigrants from Asia, or immigrants aged 26-30 at the time.

With Census data available for 1981, 1986 and 1996, we can observe the characteristics of the 1976-1980, 1981-1985 and 1991-1995 cohorts shortly after they entered New Zealand. This is important, since these observations provide a picture of the characteristics of immigrants around the time that they entered New Zealand and before major adjustments are likely to have taken place. The most important observed characteristics of a cohort are its education level (including the ability to speak English) and the previous labour market experience. But there is a wealth of other factors that potentially influence the relative labour market fortunes of a cohort, without being observed or even observable.

We can infer the presence of *unobserved* "cohort effects" by relating observed labour market outcomes to observed characteristics. Unobserved cohort effects are present if various cohorts differ in their labour market outcomes by more than can be explained through differences in their measured productive characteristics. If, for instance, the relative incomes and employment rates of the 91-95 cohort are below those of the 76-80 cohort, while education levels, age and other measured characteristics are unchanged in the more recent cohort, we conclude that there are some other unobserved cohort factors that have contributed to a decline in the average labour market outcomes of the 91-95 cohort relative to the 76-80 cohort.

Cohort effects arise from a variety of sources including

1. Immigration policy. Changes in immigration policy, such as a shift from a country-of-origin principle to a skill principle, may influence the labour market performance of new

cohorts in a manner that is not captured by changes in immigrants' observed labour market characteristics.[7]

2. Quality of schooling. The stock of human capital that has been acquired through formal education is typically assumed to be proportional to the years spent in education. If, however, a given number of school years are associated with larger increases in productive capacity across successive entry cohorts of immigrants (due to an increased school quality), the corresponding cohort effects are likely to be positive and rising over time.
3. Labour market conditions upon arrival. Chiswick et al. (1997) recently put forward the idea that an immigrant cohort's success in the labour market might depend on the labour market conditions upon arrival.[8] For instance, immigrants arriving in a recession might carry a permanent "scar" that lowers their earnings and employment probability in subsequent years. Alternatively, it might be the case that immigrants arriving in a recession are actually positively selected and more skilled than average immigrants. The empirical determination of this effect, if any, is of some relevance since it might lead to the policy recommendation of a procyclical or countercyclical immigration quota.
4. Transferability of skills. Duleep and Regets (1997a) provide evidence for the hypothesis that the apparent decline in immigrant quality in the US can be explained by a decreased transferability of skills. Transferability refers to the ease with which qualification obtained in the country-of-origin can be used productively in the receiving country. The issue of transferability is also addressed in the work by Beggs and Chapman, who find that more educated immigrants have a relatively larger income disadvantage (compared with educated Australians) at the time they enter the country than less educated immigrants.
5. Self-selection.[9] Starting point is the idea that potential migrants become actual migrants if the expected earnings in the host country exceed the earnings in the home country (abstracting for simplicity from other potential costs and benefits of migration). Hence,

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[7] This is a central argument in Borjas (1985): He argues that in the context of the US, a declining cohort quality after the mid-1960's can be attributed to changes in immigration laws in 1964 that de-emphasised skills in favour of family reunification, and redistributed visas towards Third World immigrants. In a New Zealand context, based on the same reasoning, one might expect an increasing cohort quality following the 1987 and 1991 policy reforms which increased the emphasis on skills in immigration selection criteria.

[8] Chiswick et al. (1997) measure the business cycle condition through the economy wide unemployment rate in that year.

[9] The theory of self-selection was developed by Roy (1951) in an analysis of occupational choice. Borjas (1987) extended this model to the analysis of immigration.

immigrants in general respond to higher average wages. However, distribution matters as well, and particular immigrants may move to a country with a lower average wage if their attributes are rewarded well there (and better than in the home country). Hence, if the returns to skills are high in the host country (implying, for a given skill distribution, a more unequal income distribution) relative to the sending country, it is a skilled worker who is more likely to gain from migration. The immigrant population is then drawn from the upper tail of the skill distribution, and immigrants are of above average "quality". If, however, the returns to skills are lower in the host country, workers with above average skills will stay and those with below average skills migrate. In this model, changes in the relative returns to skills between two countries may induce changes in the average quality of an arriving cohort.

6. Cohort size. Larger cohorts may be of lower average quality than smaller cohorts. For instance, there is evidence that the cohort of migrants born in the UK arriving in New Zealand in the early eighties was of above average quality, since tight selection criteria restricted immigration to narrow professional groups for which there were demonstrated labour shortages (Poot, 1993a) [10].

4.2. Post-arrival improvements in labour market performance

The second factor associated with the long run economic contribution of immigrants to New Zealand's economy is their relative income and employment growth, i.e. the pace at which they adjust to the new economic environment and "catch-up" to natives. Previous research has documented substantial variations in relative earnings growth across different cohorts (of arrival period and regions-of-origin), and tried to identify how various measured and unmeasured characteristics of cohorts are likely to cause variations in relative earnings growth (Borjas, 1987, for instance). Among those characteristics are:

1. Temporary versus permanent migration. The human capital model predicts that temporary migrants will invest less in host country specific knowledge, and hence have lower rates of relative earnings growth, than permanent migrants. Borjas (1987) finds that US immigrants for whom returning to their home country is unlikely, such as political refugees, have

[10] This argument, though, overlooks the fact that with decreased employment related migration, the proportion of family and humanitarian immigrants in the cohort increased, making the overall effect on the average cohort quality ambiguous *a-priori*.

higher rates of relative income growth. Similarly, Mexican workers maintain strong connections to Mexico, which might explain their low rates of assimilation. The issue has also been studied in the context of Germany, where the influx of *Guestworkers* was explicitly designed as temporary migration. The evidence from Germany supports the hypothesis that temporary migrants have lower relative income growth (see, for instance, Dustmann, 1993). In a New Zealand context, we suspect that trans-Tasman migration is of a more temporary nature than migration from the UK and Ireland, for instance. Also, many Pacific Island immigrants came first on a temporary basis. Hence, this approach predicts potentially higher growth rates for immigrants from the UK than from Australia or the Pacific Islands.

2. Entry earnings. In a recent series of papers, Duleep and Regets (1997a,b) have argued for the existence of an inverse relationship between entry earnings and earnings growth of different cohorts.[11] They argue that a lack of skill-transferability could explain such an inverse relationship. One implication of this research is that public concern for initially disadvantaged immigrant groups is partially misguided, as they will experience disproportionate improvements over their careers.
3. Age-at-arrival and English proficiency. Borjas (1987) reports that US immigrants who migrated at an older age had higher assimilation rates. One possible explanation is that immigrants who migrate at a young age "look more like natives". They have a smaller entry disadvantage and therefore less to gain from assimilation than persons who migrate at older ages and for whom the adaptation period is likely to be important. Borjas (1987) also finds that high levels of English proficiency of US immigrants not only benefit their entry position but also lead subsequently to larger rates of relative income growth.

4.3. Return migration and step migration

Cohort effects are present upon arrival in the host country. They can in principle be measured by observing the cohort as it arrives in the country. It is more difficult, however, to accurately

[11] Duleep and Regets use 1980 and 1990 US Census data for this analysis. With two consecutive Censuses they can observe both entry wages and wage growth for a single cohort, namely those who arrived shortly before the 1980 Census, between 1975 and 1980, say. In order to nevertheless make a statement about entry wages of different cohorts, they use a trick and define "cohorts" by classifying recent immigrants into 96 age, education, and country-of-origin cells. When they correlate median wages in any of these cells with subsequent wage growth they obtain a correlation coefficient of about -.5.

measure the relative income growth of a particular cohort over time. This is because not all immigrants who entered the country will stay in it. In particular, so-called "weeding-out" might take place. It is commonly assumed that over time, only economically successful migrants stay in the country while less successful migrants tend to return to their home country. But the selection process could also mean that more successful migrants leave. In either case the observed path of cohort earnings over time misrepresents the actual improvements in the relative economic position for immigrants who stay. For instance, if the less successful immigrants leave, the "average quality" of the cohort will increase over time, leading to an over-estimate of the actual improvement in the relative economic position of that cohort.

A related phenomenon is one of step migration. Here, immigrants do not return to their country-of-origin but rather move on to another country. The particular circumstances of the two countries involved will dictate whether one would expect a higher propensity to step-migrate among the more or less successful immigrants. Step migration is of particular relevance in the New Zealand context due to the Trans-Tasman travel arrangement that gives holders of a New Zealand passport unrestricted access to Australia. [12]

In order to explicitly account for selection effects due to return and step migration, one would need information on individual migration histories. In household level panel data, return migration might be captured if a household cannot be re-interviewed and if the interviewer can establish return migration as the cause. Licht and Steiner (1994) use a German data set that contains this information[13]. They find that the probability of re-migration decreases with labour market experience and with German speaking fluency, whereas it increases with health problems and with a spouse living in the home country. However, Licht and Steiner find no evidence for a correlation between an individual's earnings and the propensity to remigrate. Borjas and Bratsberg (1996), by contrast, use administrative data from the US immigration service. They find some evidence for the "weeding out" hypothesis. In particular, if the immigrants from a given source country had above average skills, then return migrants were the least skilled people within that source country cohort.

[12] Brown (1997) is an example of a study that analyses the labour market effects of step migration among Pacific Island immigrants in Australia.

[13] In a general purpose household panel, re-migration is a rare event. In the Licht and Steiner study, only 1.5 % of all observations refer to remigrants. This gives rise to serious statistical problems.

In the absence of detailed information on remigration, some information on the patterns of return and step migration can nevertheless be obtained from successive Censuses. As far as *observable* characteristics are concerned one can simply follow a recent cohort (for instance those who arrived between 1976 and 1981 and were present in the 1981 Census) over the following Censuses. The size of this cohort necessarily ought to decline, if only for the reason of mortality. Decreases in excess of mortality (which might be estimated from life expectancy tables) indicate return migration. Moreover, from changes in the average cohort characteristics one can draw inference on the specific average characteristics of those who returned (for instance, those with more education) [14].

4.4. Schooling in host country

Borjas (1994a) points out that immigrants who arrive as children and complete their schooling in the host country are likely to perform quite differently from immigrants who completed their schooling elsewhere. The inclusion of immigrant children may bias upward estimates of the rate of wage or employment convergence. He suggests that a better measure of convergence be obtained by tracking a specific immigrant cohort, defined in terms of both year-of-migration and age-at-arrival, across the various Censuses.

Alternatively, this bias can be avoided by distinguishing between the effect of schooling that was received in the country-of-origin and the effect of schooling that was received in the host country. There are two ways to gather this information. Firstly, the host country years of schooling can be imputed as *Total years of education minus age at migration plus five* (and equal to zero if negative) (see Beggs and Chapman, 1988). Alternatively, some data sources directly distinguish between the origins of schooling (for instance, separate schooling information is available in the 1996 New Zealand Census; Maani (1992) reports for Australian data that 17 percent of immigrants possess an Australian qualification). Where such a distinction has been made before, the usual finding is that the returns to schooling obtained in the host country substantially exceed the returns to schooling obtained abroad.

4.5. Host country language skills

[14] Note that this is a unique research opportunity using New Zealand data where it feasible to sample the whole population of immigrants, whereas overseas research mostly relies on subsamples.

There is considerable interest in the interaction between immigrants' language skills and their labour market performance[15]. One recurrent theme in the Australian research has been the superior performance of English speaking migrants relative to non-English speaking migrants. More refined analyses have measured language proficiency directly rather than proxying it by the country-of-origin[16]. Such an approach is methodologically superior, since it can separate out specific language effects from other effects that are related to the country-of-origin (such as cultural effects, quality of schooling, etc.).

The two main research questions have been how language skills improve over time and how they affect labour market performance (see Chiswick, 1991, and Dustmann, 1994). Dustmann (1994) studies the performance of German immigrants from Yugoslavia, Spain, Turkey, Italy and Greece. He finds that the speed of language assimilation is rather slow. For instance, he reports that for men it takes an estimated 48 years in order to improve from "bad or no" proficiency in spoken German to "good or very good" proficiency. The rate of adjustment is faster for women. Furthermore, men with good or very good proficiency earn about 7 percent more than comparable workers with bad or no knowledge of spoken German [17].

4.6. Location effects

If immigrants settle in particular cities or regions their post-settlement performance will be shaped by conditions in those local labour markets. It may be more meaningful to compare their performance to that of natives living in the same cities or regions than to that of natives living anywhere in the host country. This is an important issue for New Zealand research, given that more than fifty percent of new permanent residents arriving in recent decades have settled in the Auckland region.

4.7. Gender differences in labour market outcomes

Given that there are significant differences between the labour market experiences of men and women, many labour economists prefer to model the earnings or labour market status of males

[15] Note, for instance, that the New Zealand government has in recent years repeatedly re-adjusted the language requirements for permanent residence.

[16] A direct question on language proficiency is available in the 1996 New Zealand Census.

[17] These answers are based on self-assessments. Questionnaires in this particular survey had been distributed in the respective languages of origin.

and females separately. Gender differences are likely to be even more important when immigrants are being considered. Until recently, principal applicants for residence in New Zealand (who were most often males) were selected in terms of a set of criteria which placed considerable weight on occupation, qualifications and other attributes that are statistically associated with labour market performance. Other family members did not have to meet those residence criteria. This may mean that female immigrants have quite different post-settlement labour market outcomes than male immigrants, or that native/immigrant disparities in labour market outcomes are larger for females than for males.

Baker and Benjamin (1997) have proposed another hypothesis for gender differences in post-settlement labour market outcomes. The key assumption in their model is that immigrant families face credit constraints when making their post-migration human capital investments. To avoid the effects of these constraints on current consumption, females within a family take secondary jobs shortly after arrival. These jobs have relatively high initial earnings but little future growth, and they serve to finance family consumption while the husbands undertake investments, i.e., take jobs with low initial wages but larger returns. Baker and Benjamin (1997) find support for their hypothesis from Canadian data. In particular, male immigrants' earnings assimilation is quicker than that of female immigrants. Moreover, immigrant women have higher participation rates than native women on arrival, a difference that declines with years since migration.

4.8. Illegal migration

Although illegal immigration to New Zealand is in principle a possibility, the lack of a land border and the distance to other countries suggest that this might be a minor problem in practice. The New Zealand Immigration Service could use arrival and departure cards in principle in order to determine whether short-term visitors overstay. Statistics on overstayers are not publicly available at present.

4.9. The changing policy context

The two key immigration policy events during the period of this study were the passing of the Immigration Act 1987 and the Immigration Amendment Act 1991 [18]. Pre-1987, immigration was subject to both an occupational priority list and a preferred source country list [19]. A comprehensive review the New Zealand's immigration policy was conducted in 1986. Factors motivating this review included a desire to acknowledge New Zealand's location in the Asia-Pacific region (factors being that immigration from within this region might foster trade, attract investment, and increase cultural diversity), and a desire to tidy up some of the administrative and legal shortcomings of the old legislation (Burke, 1986).

Consequently, the Immigration Act 1987 did away with the "traditional source" preference for UK, Western European and North American nationals. It rationalised the system of an occupational priority list in order to encourage the immigration of people with skills for which excess demand in New Zealand could be identified. Residence applications made on occupational grounds required a firm employment offer and were undiscriminatorily based on personal merit (with the exception of some bilateral preferential access arrangements with Australia, the Netherlands, and Western Samoa). Family reunification immigration continued.

The Immigration Amendment Act 1991 went a significant step further by replacing the occupational priority list with a point system, attempting to increase New Zealand's overall level of human capital rather than using residence policy as a short-term labour market tool. The requirement of a job offer was abandoned, although a job offer increased an applicant's point score. A soft immigration target of 25,000 was introduced, but it was exceeded substantially after 1993, peaking at 56,000 residence approvals in 1995 (about 72 percent of which were approved under the General Skills Category).

In October 1995, rules were tightened somewhat. For example, the minimum English language requirement was extended from just the principal applicant to all adult family members in both

[18] Shroff (1988), New Zealand Immigration Service (1995), Zodgekar (1997) and Trlin and Spoonley (1997) provide valuable accounts of current and past New Zealand immigration policies.

[19] An occupational priority list (OPL) was in existence from the mid 1960s. In order to employ immigrants without OPL skills, the employer had to demonstrate that no suitable New Zealand resident was available. After 1976, the employment of immigrants from "non-traditional" source countries with OPL skills became possible, provided their skills were not in demand in their home country and it was not possible to obtain migrants from preferred sources (New Zealand Immigration Service, 1997).

the General Skills and the Business Investor categories. [20] In occupations where professional registration is required by law in New Zealand (such as for physicians, lawyers, and electricians), the registration must be obtained before points for these qualifications can be awarded.[21] While it had been an explicit goal of the 1991 reform to move away from immigration as a short term labour market tool towards immigration as a way of acquiring human capital that benefits medium and long-term growth, the 1995 changes redressed the balance between the by increasing the points for a job offer from 3 points to 5 points (the passmark was 25 points over most of the period and most applicants now have a job offer).

The annualised target was adjusted to 35,000, and the number of approvals declined to 42,700 in 1996 and to 21,400 in January-August 1997. In 1996, only 23 percent of all approvals were made under the General Skills category and 4 percent under the Business Investment category. Many commentators believe that permanent residence approvals are unlikely to soar again under the present rules.

Throughout the period New Zealand had provisions for temporary entry as visitors (up to 9 months), students (up to 4 years) or temporary workers (up to 3 years). As of 31 July 1996, there were 11,600 overseas students in New Zealand attending universities, polytechnics or schools. With several thousand each, the two most numerous groups of temporary workers were fishing crewmembers and young people on working holidays undertaking casual work, such as fruit picking (New Zealand Immigration Service 1997).

As far as long-term migration is concerned, it appears that the introduction of the point system in 1991 was instrumental in encouraging diversified immigration, and Asian immigration in particular. Whether the policy was successful, in the sense of attracting individuals with high human capital who will succeed in the New Zealand labour market, is an issue that will be analysed in the next part of this report.

[20] The latter category was previously called Business Invest*ment* Category. Together with the English requirement came for the first time an assessment of demonstrated business experience.

[21] Other changes introduced for the first time points for New Zealand work experience and for the spouse's qualifications. These changes arguably made the point system more open.

5. Study Design

The analysis in this report is based on data from the 1981, 1986, and 1996 New Zealand Census of Population and Dwellings. The 1991 Census was excluded from the study since it contains no information on the year in which an immigrant arrived in New Zealand. This report has two parts. In a first part, summary tables are used to describe immigrant flows between 1970 and 1996, and the characteristics and labour market outcomes of immigrants. In a second part, the separate contributions of the various characteristics (gender, age, parental and marital status, region-of-origin, years lived in New Zealand, age at arrival in New Zealand, level of qualifications, location of residence in New Zealand, period of arrival in New Zealand) to the employment, unemployment, labour force participation rates, and incomes of natives and immigrants are estimated using econometric techniques.

In order to isolate the characteristics of immigrants as they arrive in New Zealand, all tables provide statistics for the subset of recent immigrants (i.e., immigrants who were in the country for at most five years) in addition to those for natives and all immigrants. A comparison of the characteristics of recent immigrants relative to natives in 1981, 1986 and 1996 addresses the issue of how the type of immigrant who is attracted to New Zealand has changed. The most important questions relate to changes in the country-of-origin composition, changes in qualification levels, changes in employment rates and changes in relative incomes. The information on labour market outcomes will give an indication as to whether immigrants arriving in the early 1990's have fared "better" or "worse" than immigrants who arrived in the country in the late 1970's or early 1980's have. We also provide partial explanations for the observed trends. A more thorough analysis of the specific contributions of various factors to changes in relative labour market outcomes over time will be conducted in the next stage.

In order to make an initial assessment of how immigrants adjust to the New Zealand labour market in the years after arrival, particular groups of immigrants who arrived in a given period are tracked over the three Census years, and changes in their relative situation (compared with natives) are analysed. In this part of the study, we concentrate on region-of-origin differences in labour market dynamics. Also, we analyse outmigration patterns and the potential impact these may have on the main conclusions.

Throughout this study, natives are used as a benchmark for immigrant performance. The focus on relative outcomes is important for several reasons. Firstly, it is a simple way to control for the labour market effects of the business cycle, assuming that native and immigrant outcomes are affected similarly by general economic conditions. Secondly, the changes in labour market outcomes of natives over their life cycle provide a natural benchmark, against which changes in immigrants' outcomes can be compared.

6. Data Issues

6.1. Study population

The study population comprises all working age individuals living in New Zealand on Census night. "Living in New Zealand" means that the individual gave a New Zealand address as his or her place of usual residence. Short-term residents (e.g. those on working permit, student permit, or visitor permit) could have given a New Zealand address and thus be included in the study population. Such temporary residents cannot be distinguished from permanent residents in the Census data. No data source exists that would establish the exact number of people in New Zealand on work and student permits. [22] It is likely that there are tens of thousands of people in New Zealand at any one time on work permits, and tens of thousands on student permits. Some of these may have given overseas addresses in the Census, however. [23]

The study defines as working age population those aged 15 to 64. An alternative study population, frequently used by Statistics New Zealand in official publications, is one of "adult" New Zealand residents, namely those aged 15 or above. The difference is that our definition excludes individuals aged 65 or above. In 1996, this group constituted about 15 percent of all adults. The decision whether or not to include this group can have a quite substantial impact on any aggregate labour market statistic. For instance, in 1996, 54 percent of the New Zealand resident working age population was engaged in full-time employment. This compares to about 47 percent of the entire adult population. These two proportions can be reconciled by noticing that only 7 percent of the elderly are in full-time employment.

[22] The only figures currently held by the New Zealand Immigration Service are the numbers of new permits and visas or extensions issued to temporary workers, students and visitors. These don't correspond to the number of people given entry approval on theses grounds, as multiple documents may be issued to a given individual who is travelling in and out of NZ, or decides to extend his/her stay. In addition, it is not possible to identify whether a spouse or dependants accompany immigrants granted temporary residence approvals.

[23] NZIS data on the total number of visas and extensions issued UK and US citizens are over-represented among the work permit holders (compared with their representation among all the recent immigrants counted in the Census). Pacific Island and Asian citizens appear to be over-represented among student permit holders.

6.2. Samples

The data are composed of three different subsamples. Sample A contains a 5 percent random sample of all individuals born in New Zealand ("natives"). Sample B contains a 20 percent random sample of all individuals born in the UK or Ireland. Sample C contains the full population of all other immigrants (i.e., people born outside New Zealand, the UK or Ireland). All descriptive statistics are computed using appropriately weighted data. Table 2 gives an indication of the sample sizes. In 1981, there are 257,410 observations, 82,234 on natives and 175,176 on immigrants. Cumulated over the three Census years, there are a total of 932,041 observations.

While statistics for the New Zealand and UK and Irish born populations are subject to sampling error, this error tends to be small. For instance, the "margin-of error" with a proportion, such as an employment rate, based on sample sizes of above 90 thousand for New Zealanders and 30 thousand for Britons and Irishmen is below 0.6 percentage points. Hence, in a statistical sense, we are confident that the population proportion is within +/- 0.6 percentage points of the estimated proportion, a small error. The situation is less favourable when more disaggregated statistics are considered. Take as an example the employment rate of recent male immigrants from the UK and Ireland aged 15-24. The relevant sample size here is 290, generating a quite substantial maximum margin of error of +/- 6 percentage points.

6.3. Non-response and imputations

In the data set that is used in this study, one can distinguish three sets types of non-responses (or "missing values"). The first type is a non-response in the variables "country-of-birth" and "years lived in New Zealand". Sampling by Statistics New Zealand was conditional on valid information for these two variables (years in NZ only applied to the foreign born). This selection automatically excluded all "dummy" records, since country-of-birth is not imputed. In the 1996 Census, about 112 thousand persons, or 5 percent of the working age population, failed to supply valid country-of-birth data. According to Statistics New Zealand sources the percentage of records with country of birth missing was much lower in previous Censuses.

The second type of missing information concerns the variables age, sex, and labour force status. Statistics New Zealand provides imputes values for these variables if the original information from the questionnaire is missing or cannot be used. Imputation methods vary. For

instance, sex may have been be imputed based on the name, based on information from the dwelling questionnaire, or stochastically. In the 1996 Census, information of the type of imputation that was undertaken by Statistics New Zealand (if any) is provided for each record.[24]

Table A78 shows that in our sample, 0.2 percent of records had an imputed sex variable, and 0.6 percent of records had an imputed age variable. Of most concern for our analysis are imputed values for labour force status. In fact, Table A78 shows that 6.5 percent of all labour force records in the sample have been imputed. This proportion varies substantially by region-of-origin, from 2.6 percent for UK and Irish immigrants to 11.9 percent for Pacific Island immigrants. As a consequence, the quality of the labour force information for Pacific Island immigrants is unavoidably lower, which should be kept in mind in the following analysis. Table A79 lists the various imputation types that exist for labour force status. For instance, it may be known that the person is employed or not, but not whether he or she is in full-time or part-time employment, or whether he or she is unemployed or not in the labour force. Table A79 shows that about one third of all imputations involve "total ignorance", i.e., no information at all about the labour force status.

The third type of non-response involves any other variable used in this analysis (other than sex, age, labour force status and country of residence and period of residence). The empirical results presented in the next section are always based on the maximum number of valid observations. Table A77 shows the proportion of missing values for the various variables by Census year and region-of-origin. The largest proportion of missing values occurs for parental status. The reasons for this high proportion will be discussed in section 7.3.2. High non-response rates are also observed for income.

In 1996, for instance, 29 thousand persons (7.5 percent) did not give a valid income response. Hence, any analysis involving income is based on the 92.5 percent subset with valid responses. Again there is substantial variation across regions of origin, and, as for labour force status, the largest non-response proportions in income are observed for Pacific Island immigrants (14 percent in 1996). As for labour force status imputations, little can be said about the size and direction of the potential biases that are induced by excluding records with these non-responses.

[24] For the 1981 and 1986 Censuses, no information on imputation methods and frequencies is available.

However, it is clear that information on Pacific Island and, to some extent, Asian immigrants is of lower quality than information on other immigrants.

6.4. Immigrants and natives

An immigrant is someone who lives in New Zealand and was born outside New Zealand. An immigrant may or may not be a New Zealand citizen or permanent resident and may or may not have been born to New Zealand parents. In particular, foreigners on student or work permits may be included in the immigrant population as long as they gave a New Zealand address as their usual place of residence. Natives are all people born and living in New Zealand. We will refer to them interchangeably as "natives", as "New Zealanders", or as the "New Zealand born".

A *recent immigrant* is an immigrant who has spent less than 6 years in New Zealand at Census day. In 1996, for instance, a recent immigrant was an immigrant who arrived between April 1990 and 7 March 1996. The number of recent immigrants at Census night equals the number of immigrants arriving during that period minus the number of immigrants leaving minus deaths. As an approximation, we will sometimes refer to recent immigrants as a flow, i.e., the flow of those who arrived during the period. This approximation is valid as long as outflows are minor[25]. Similar to recent immigrants, we will occasionally divide older immigrants into cohorts of five-yearly arrival intervals, for example those arriving between 1986 - 1990, 1981 - 1985, 1976 - 1980 and so forth.

6.5. Definitions of other variables.

For most of the analysis, we distinguish between immigrants from the UK and Ireland, Australia, Europe & North America, Pacific Islands, Asia and other regions. For some analyses we prefer a finer breakdown, distinguishing for instance between immigrants from Western Europe, Eastern Europe, Southeast Asia, Northeast Asia and South Asia, or between immigrants from various countries. Table A1 lists the main countries within each of these

[25] Mortality can be neglected. Recent immigrants are on average 31 years of age, and the mortality rate in this age group is below 0.1 percent. Even for those aged 55-64, annual mortality does not exceed 1 percent.

regional groups. "Auckland" in this study refers to the Auckland Regional Council area. "Partner" refers to a person who lives in a de-facto or legal married relationship.

Statistics New Zealand redefined several of the used variables between the three Censuses. Whenever possible, definitions have been adopted that are as consistent as possible over time. Another potential problem for valid comparisons between Censuses is changes in questionnaire wording from census to census. They occurred for most variable (labour force status, qualifications, income, social welfare payments, occupation, industry, country-of-origin) and may have altered response patterns in ways that may have affected native/immigrant comparisons as well as trends over time. Little can be said about the direction of possible biases.

The key variables where definitional adjustments had to be made in order to make variables comparable over time were labour force status and highest qualification. The labour force status definition used in this study is based on the pre-1986 definition of unemployment and the post-1986 definition of full-time/part-time work. In particular, full-time workers are those who usually worked at least 30 hours per week. Part-time workers are those who usually worked between 1 and 29 hours. The unemployed are all those who were not employed and who looked for a job during the last four weeks. Those who looked for work using newspapers only, or were not available for work, are not excluded under this definition, in contrast to the current official definition of unemployment. Occupational classifications are based on the 1968 code, while industry classifications use the NZSIC87 (that is provided by Statistics New Zealand for the 1981 and 1986 data).

The main change in the highest qualification question introduced by the 1996 Census was a reclassification of post-secondary qualifications. Moreover, rather than ticking boxes, respondents had for the first time to explicitly write down their qualifications, with a maximum number of two answers. While a concordance of detailed tertiary qualifications does not yet exist, one can bypass the problem by looking at a broad classification only, as done in this study (using the categories: no qualification, school qualification, vocational qualification and university qualification).

Changes in classifications and changes in the phrasing and layout of questions may still affect the interpretation of trends over time. We note, however, that the focus of this study is on characteristics and outcomes of immigrants *relative* to natives. As long as immigrants and

native outcomes were affected similarly by these changes, one can interpret trends in native/migrant relativities more confidently than the trends in the absolute measures of labour force rates and qualifications.

7. Descriptive Results

7.1. The scope of immigration

New Zealand is a traditional immigration country. Over the last 60 years, the proportion of overseas born among all New Zealand residents fluctuated between a high of 20 percent (in 1936) and a low of 14.3 percent (in 1956) (see Table 1). Between 1986 and 1996, the proportion increased by more than 2 percentage points to 17.5 percent. In 1936, most of the overseas born population was born in the UK and Ireland (77 percent), followed by Australia (14 percent). Sixty years onwards, the stock of immigrants had become more diversified. The proportion of immigrants born in the UK, Ireland or Australia had dropped to 47 percent; the proportion of immigrants born in the Pacific Islands had increased to 16 percent (up from 1 percent in 1936); and the proportion of immigrants from other regions, including Asia, had increased to 37 percent (up from 18 percent in 1936). Most of this increased diversification occurred between 1976 and 1996, the period of this study.

Table 1. New Zealand's Changing Population Structure, 1936-1996.

Census Year	1936	1945	1956	1966	1976	1986	1996
Overseas born as % of total population	20.0	14.5	14.3	14.8	16.6	15.4	17.5
Country of Origin as % of overseas born population							
UK and Ireland	76.9	73.9	69.1	66.8	60.6	54.3	38.0
Australia	14.3	14.9	11.6	10.9	11.8	9.4	9.0
Netherlands	0	0.1	4.0	5.2	4.2	4.9	3.9
Pacific Islands	0.5	1.1	2.8	5.5	9.0	13.8	16.4
India	0.7	0.9	1.4	1.4	1.2	1.3	2.1
China (P.R.)	0.7	1.3	1.2	1.1	0.8	1.0	3.3

Source: NZ Official Yearbook, various issues.

The increasing proportion of immigrants and the substantial diversification by region-of-origin over the last 15 years is equally seen in figures for the working age population only (Table 2). In 1981, New Zealand's working age population was about 1.96 m, with 16.3 percent foreign born. During the next 15 years, the working age population grew by about 14 percent to 2.23 m people. Contributors to this growth were increases in both the New Zealand born population and the number of immigrants. However, the 32 percent growth of the immigrant population far outpaced the 10 percent growth of the New Zealand born population. As a consequence the

share of foreign born among the resident working age population increased by 2.6 percentage points to 18.8 percent in 1996.

Table 2: Resident Working Age Population, 1981, 1986 and 1996

	1981		1986		1996	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Population Size, New Zealand						
New Zealand born	1644680	83.75	1750800	83.71	1809680	81.16
UK and Ireland born	179825	9.16	178805	8.55	151615	6.80
Other	139211	7.09	162002	7.75	268521	12.04
Total	1963716	100.00	2091607	100.00	2229816	100.00
Population Size, Auckland						
New Zealand born	380600	74.55	423320	74.72	456360	68.81
UK and Ireland born	68640	13.44	69285	12.23	59520	8.97
Other	61308	12.01	73902	13.05	147324	22.21
Total	510548	100.00	566507	100.00	663204	100.00

Table 2 also shows that Auckland was markedly different from the country average. Firstly, the proportion of immigrants was larger than in the rest of the country and increasing over time to 31.2 percent in 1996, up from 25.5 percent in 1981. Secondly, the Auckland working age population grew faster than the rest of the country, at a rate of 30 percent during the 15 year period. As for the country as a whole, the increasing share of immigrants in Auckland was a reflection of a disproportionate growth in the number of immigrants (a 59 percent increase in immigrants as compared to a 20 percent increase in the New Zealand born).

7.1.1. Where do immigrants come from?

A pervasive aspect of New Zealand's post-1975 immigration history is the important but declining role of immigration from the UK and Ireland. Detailed information on the number of immigrants by region-of-origin for all of New Zealand and Auckland is given in Table 3. *Absolute* immigration flows from the UK increased, from 15 thousand between April 1975 and March 1981, to 17 thousand between April 1990 and March 1996. However, these flows were not sufficiently large to maintain the share of UK and Irish immigrants among all working age immigrants for two reasons. Firstly, the flows were well below "replacement level" (replacement of immigrants who either left, died, or reached the cut-off working age of 65 years).

Table 3: Immigrant Composition by Region of Origin, New Zealand and Auckland, Working Age Population, 1981, 1986 and 1996.

	1981		1986		1996	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
1. New Zealand, All Immigrants						
UK & Ireland	179825	56.37	178805	52.47	151615	36.09
Australia	27487	8.62	29189	8.56	31535	7.51
Europe & Nth America	42954	13.46	47042	13.80	50012	11.90
Pacific Islands	41644	13.05	52253	15.33	74193	17.66
Asia	18831	5.90	24446	7.17	88889	21.16
Other	8295	2.60	9072	2.66	23892	5.69
Total	319036	100.00	340807	100.00	420136	100.00
2. New Zealand, Recent Immigrants						
UK & Ireland	15460	32.92	14250	27.40	16520	14.81
Australia	6401	13.63	5324	10.24	6931	6.21
Europe & Nth America	6654	14.17	9275	17.84	14084	12.63
Pacific Islands	9580	20.40	11810	22.71	10805	9.69
Asia	6937	14.77	9544	18.35	52583	47.14
Other	1925	4.10	1795	3.45	10621	9.52
Total	46957	100.00	51998	100.00	111544	100.00
3. Auckland, All Immigrants						
UK & Ireland	68640	52.82	69285	48.39	59520	28.78
Australia	9944	7.65	10563	7.38	11084	5.36
Europe & Nth America	13770	10.60	15323	10.70	18617	9.00
Pacific Islands	26898	20.70	34642	24.19	52220	25.25
Asia	7234	5.57	9587	6.70	53452	25.84
Other	3462	2.66	3787	2.64	11951	5.78
Total	129948	100.00	143187	100.00	206844	100.00
4. Auckland, Recent Immigrants						
UK & Ireland	6070	31.11	5730	25.02	7100	11.13
Australia	2022	10.36	1794	7.83	2609	4.09
Europe & Nth America	2201	11.28	3120	13.62	6315	9.90
Pacific Islands	6123	31.38	8027	35.05	7561	11.85
Asia	2375	12.17	3509	15.32	34310	53.79
Other	722	3.70	720	3.14	5896	9.24
Total	19513	100.00	22900	100.00	63791	100.00

As a consequence, the total number of working age immigrants from the UK and Ireland declined from 180 to 152 thousand between 1981 and 1996. Secondly, immigration flows from other regions of origin, most notably Asia, but also Europe and North America and the "other" regions, increased overproportionally (whereas flows from Australia and the Pacific Islands displayed no strong trend).

Relative immigration flows from the UK and Ireland declined from one third of all recent immigrants in 1981 to 15 percent in 1996. Both factors contributed to a decline in the UK and Irish immigrants' share of the total population of working age immigrants from 57 percent in

1981 to 36 percent in 1996. If the trends in contemporaneous immigration flows are to persist, the share of UK immigrants will continue to drop well below its 1996 level.

Who fills the gap? Table 3 shows that there were two distinct "immigration waves", a Pacific Island wave during the 1970's and 1980's followed by an Asian wave during the 1990's. This is best seen from figures on recent immigrants. In both 1981 and 1986, the Pacific Islands were the most important region-of-origin for immigrants settling in Auckland, peaking at 35 percent of recent immigrants in 1986, and the second largest for immigrants in New Zealand as a whole (after the UK and Ireland)[26]. Asian immigration was relatively small during that period. Ten years later, in 1996, the picture had changed completely. Then, nearly half (and more than half in Auckland) of all recent immigrants were born in Asia whereas Pacific Island migration had fallen back to a 10 percent share.

7.1.2. When did immigrants arrive?

The average number of years spent in New Zealand among all working age immigrants was 17.1 years in 1981, 18.4 years in 1986, and 17.0 years in 1996. The median length of stay was somewhat shorter. In 1996, 50 percent of all immigrants were in New Zealand for 15 years or less (17 years in 1986 and 16 years in 1981). The fall in the average period of residence by 1.4 years between 1986 and 1996 is only a sluggish indicator of the increasing immigration flows in the early 1990's. A more direct indicator is the proportion of recent immigrants among all immigrants. This proportion increased from 14.7 percent in 1981 to 26.5 percent in 1996 for the average immigrant, but varied substantially by region of origin.

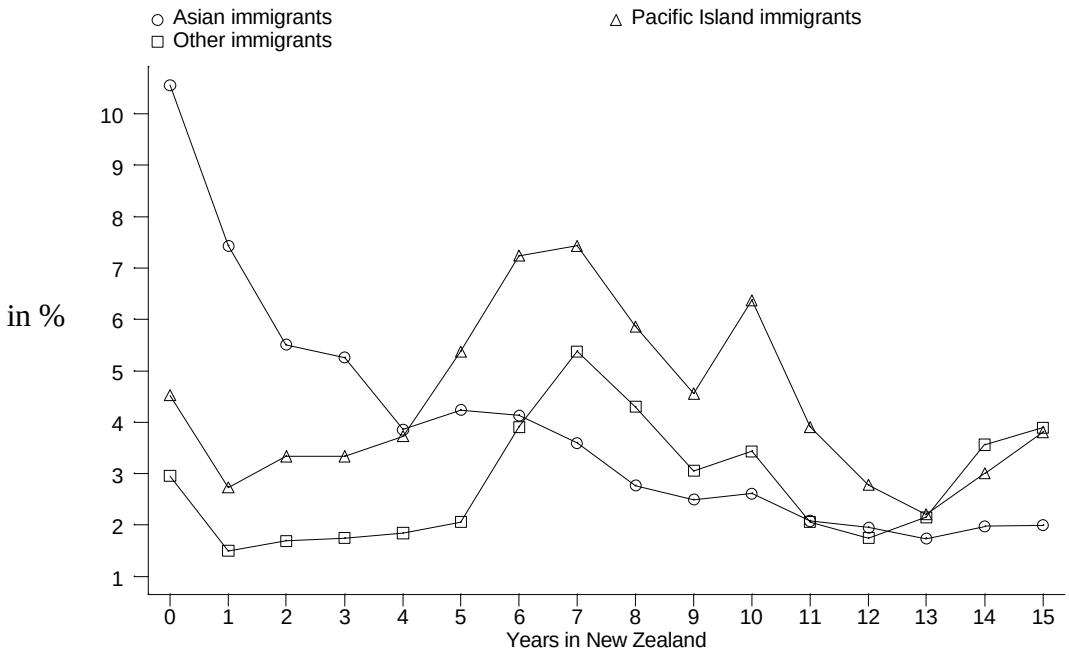
[26] In the early seventies, many Pacific Islanders entered New Zealand on temporary work schemes and subsequently obtained residence, partially as a part of an amnesty for overstayers in 1976.

Table 4. Recent Immigrants as a percentage of all immigrants, by region-of-origin, 1981, 1986 and 1996.

	1981	1986	1996
UK & Ireland	8.5	7.9	10.8
Australia	23.2	18.2	21.9
Europe & Nth America	15.4	19.7	28.1
Pacific Islands	23.0	22.6	14.5
Asia	36.8	39.0	59.1
Other	23.2	19.7	44.4
All immigrants	14.7	15.2	26.5

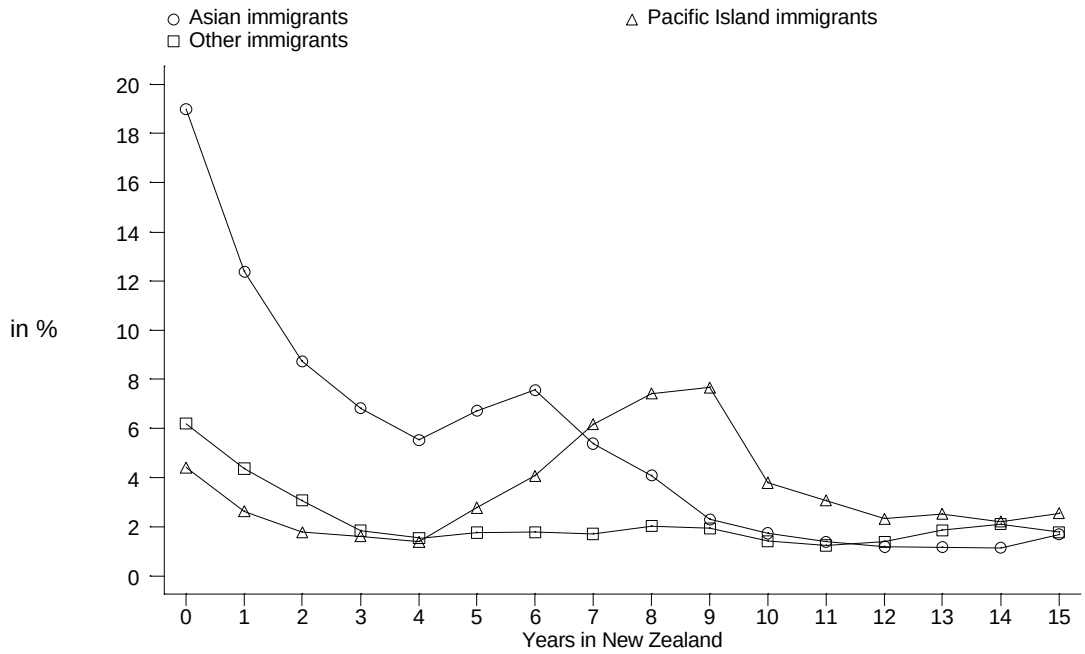
In all three Census years, the proportion of recent immigrants among all immigrants was largest for Asia. In 1996, 59 percent of all Asian immigrants living in New Zealand were recent immigrants, i.e., had arrived within the previous 6 years, up from 37 percent in 1981 and 39 percent in 1986. However, only 14 percent of Pacific Island immigrants, and 11 percent of UK and Irish immigrants were recent immigrants in 1996. This considerable imbalance between the proportion of recent immigrants among Asian and non-Asian immigrants would have a big impact on any statisticss on immigration which do not control for years of residence.

Figure 1: 1981 Distribution of Years in New Zealand



Figures 1 and 2 shows the full distributions of years in New Zealand (up to 16 years) for Asian, Pacific Island, and other immigrants in 1981 and 1996.[27] The distribution of arrivals differs substantially between the three regions. In both Census years, the proportion of Asians that came very recently is large. About 10 percent came in the eleven months prior to Census day in 1981. In 1996, this proportion increased to 19 percent. However, if one considers recent immigrants only (i.e., immigrants who came within the last 6 years) then Asians were no more likely to be very recent than immigrants from other regions. There is a noticeable concentration of Pacific Island immigrants at about 5-10 years in the 1981 Census, and at about 10-15 years in the 1986 Census, reflecting relatively high arrival rates in the early 1970's.

Figure 2: 1996 Distribution of Years in New Zealand



[27] Figures 1 and 2 merit a cautionary note. They give estimates of the proportion of immigrants *in the sample* with a certain period of residence. It is inaccurate to derive from that information the inflow of immigrants during the corresponding years due to out-migration, mortality, and the complicated effect of the age restriction in our sample. As an illustration of the latter point note that in order to report 15 years in New Zealand, say, a person must have arrived before the age of 49 which at all times is only a fraction (though a large one) of all arriving immigrants.

7.1.3. Where do immigrants settle?

The Census data document a disproportionate settlement of working age immigrants in Auckland. In 1996 almost one out of three Aucklanders was foreign born, compared to less than one out of five for the country as a whole, and less than one out of six for the rest of the country. 49 percent of all immigrants and 57 percent of all recent immigrants lived in Auckland, but only 25 percent of the New Zealand born. Table 5 shows that the preference for living in Auckland always was higher for immigrants than for natives.

Table 5: Proportion of New Zealanders and Immigrants Living in Auckland, by Region of Origin, 1981 and 1996.

	1981		1986		1996	
	All Immigrants	Recent Immigrants	All Immigrants	Recent Immigrants	All Immigrants	Recent Immigrants
UK & Ireland	0.383	0.396	0.388	0.404	0.393	0.429
Australia	0.363	0.317	0.363	0.339	0.352	0.376
Europe & Nth America	0.322	0.337	0.326	0.339	0.372	0.448
Pacific Islands	0.650	0.649	0.664	0.682	0.704	0.699
Asia	0.386	0.346	0.393	0.368	0.601	0.652
Other	0.420	0.378	0.419	0.404	0.500	0.555
Total Immigrants	0.409	0.412	0.421	0.443	0.492	0.572
New Zealand	0.233		0.243		0.252	

Furthermore, the propensity to live in Auckland varied substantially by region-of-origin. Close to 70 percent of Pacific Island immigrants and 60 percent of Asian immigrants reported Auckland as their usual place of residence, compared to 35 percent of immigrants from Australia, and 39 percent of immigrants from the UK.

7.1.4. Who leaves?

In section 4.3. we pointed out that it is difficult to correctly identify post-arrival labour market improvements of immigrants in intercensal comparisons if out-migration is a major factor. Out-migration is likely to change the composition of cohorts. If the least successful immigrants leave, the relative position of an "average" immigrant remaining in New Zealand will improve solely due to composition changes. As a consequence, estimates of the post-arrival labour market improvements from successive Census data would exaggerate the actual improvements of those who stay. On the other hand, if the more successful immigrants leave, this will tend to reduce the relative position of an "average" immigrant remaining in New Zealand. The

departure of temporary work permit holders working in professional occupations could have this type of effect on the composition of the cohort when observed in the next census.

Most of the literature on out-migration has focused on return-migration, although in a New Zealand context, step-migration, to Australia in particular, might be an important factor as well. In Census data, no direct information on either incidence or destination of out-migration is available. Outmigration rates ideally refer to immigrant flows. However, any immigrant arrival cohort has already been partially reduced in size by the time it is observed in the nearest Census. The problem is smaller if only very recent immigrants are considered. Accounting for the trade-off due to decreasing sample sizes, we focus on immigrants with 0-1 years since migration (i.e. immigrants who are in the country for a period of at most 23 months). In addition, we report outmigration rates for immigrants with 2-5 years and 6-10 years of residence, respectively. Outmigration rates are computed as

1 - (cohort size in census t / cohort size in Census t-s),

where s = 5, 10, and 15, respectively. Tables A12-A17 give five-year (negative) outmigration rates (1981-1986), ten-year outmigration rates (1986-1996) and fifteen year outmigration rates (1981-1996), respectively. Since ten-year outmigration rates have a different base year than five and fifteen year rates, the rates are not necessarily increasing monotonically. [28] The analysis is done by gender, by qualifications, and for the two age groups 15-24 and 25-44 (Age is taken to be age in the base year, not on arrival). We also computed "outmigration" rates for natives, by age-group and education level. These rates inform about the potential importance of selective outmigration of natives that could affect the native-immigrant comparison in ways similar to outmigration of immigrants.

Out-migration was quantitatively important (The following proportions refer to the most recent immigrants, those who arrived in the 23 months prior to the Census). 28 percent of recently arrived immigrant men aged 25-44 in 1981 were not enumerated by the 1986 Census. The ten-year outmigration rate was 43 percent, the fifteen-year outmigration rate 45 percent. Men

[28] There are several reasons other than outmigration and mortality why immigrant cohorts may change their size (increase or decrease) over time. These include temporary absences of immigrants at Census night, misclassifications in both the year of arrival and country-of-origin variables, or, in general, a changing coverage rate of the Census. However, these factors are likely to be dominated by genuine outmigration.

tended to have higher outmigration than women. The female rates varied from 26 percent for five years to 39 percent for fifteen years.

As expected, outmigration rates were in general highest for the most recent immigrants who had spent only up to 23 months in the country prior to the Census. A declining "hazard rate" simply means that immigrants who are most likely to leave are, on average, the first to leave which in turn reduces the average outmigration propensity among those left behind. [29] Except for Pacific Islanders, out-migration rates were higher for the younger immigrants. They were particularly high for 15-24 year olds from UK, Australia and Europe.

Table A18 gives the "outmigration" rates for natives for the sake of comparison. Age is grouped by five-year intervals. In the 25-44 year range, five-year outmigration rates never exceeded 4 percent, and fifteen-year outmigration rates were always below 13 percent. Only part of this decline can be attributed to mortality, leaving a genuine effect of external migration for natives as well. However, the cohort decline was much smaller for natives than it was for immigrants.

The effect of outmigration on the education distribution is ambiguous. As expected, there is evidence for educational upgrading among young immigrants (aged 15-24) between Censuses as part of them are still in the education system. For older immigrants, we observe an interesting interaction between previous period of residence, qualification levels and outmigration. For immigrants without any qualifications, outmigration rates were high and their hazard rates decreaseds only modestly with period of residence. By contrast, immigrants with university qualification hade very high outmigration rates initially, but low or negative rates later. In other words, there is evidence for upgrading by older immigrants among those who were established (with 6-10 years of residence). For these cohorts the number of people with post-school qualifications (vocational in particular) increased between Censuses. However, for very recent immigrants the size of cohorts with post-school qualifications tended to decline. [30] Large outmigration of very recent university educated immigrants contrast with the substantial increases in the proportion of natives with university qualifications over time.

[29] The hazard rate is a term used in statistics for the conditional probability of leaving (New Zealand) after *t* years (of residence), given that one has not left before.

[30] One partial explanation is that our data capture students who return to their country of origin shortly after they received their degree from a New Zealand University. Similarly, the data captures temporary work permit holders in professional and managerial jobs.

Hence, *relative* to natives, the cohort quality of immigrants, as measured by education levels of very recent immigrants, had a tendency to decline.

Finally, we notice that outmigration rates varied substantially by region-of-origin. On the extreme ends were Australia and the Pacific Islands. Australian outmigration rates for very recent male immigrants were 54 percent (5 year), 65 percent (10 year) and 74 percent (15 years), respectively. Pacific Island outmigration rates for very recent male immigrants were 20 percent (5 year), 10 percent (10 year) and 27 percent (15 years), respectively. A simple conjecture is that the Australian situation is a reflection of the ease, and high volume, of trans-Tasman migration. The causes of the low outmigration rates of Pacific Island immigrants are less obvious. Possible explanations might include the substantial GDP/capita gap between New Zealand and Pacific Island countries, as well as the existence of large immigrant communities that facilitate the integration of these immigrants.

7.2. The educational attainment of immigrants

In post-war New Zealand, immigration policies have targeted, in one way or another, immigrants with skills, either occupational skills, or, more recently, broadly defined "general skills".[31] New Zealand being a country with a relatively high proportion of unskilled workers, importing skilled workers can be seen as a relatively inexpensive (since public subsidies to education, if any, are paid for by other countries) and immediate way to overcome a relative shortage in skilled labour. In theory, this change in relative supplies could benefit both unskilled natives and, in particular, the owners of New Zealand's capital stock. The argument for skilled immigration has been reinforced by another, namely that skilled immigrants make a greater contribution to economic activity, and hence the living standards of New Zealanders, than unskilled immigrants.

[31] This is notwithstanding the fact that a substantial fraction of immigrants entered under a family or humanitarian category, and that Australians, Cook Islanders, Niueans and Tokelauans had automatic residence rights and hence are not subject to any screening. In 1996, 61 percent of all residence approvals were made under the General Skills category. In some years, for instance the early 1980's, the proportion of skill related approvals was well below 50 percent. This was a consequence of the reduction of the Occupational Priority List (OPL) intake during periods of adverse economic conditions; the family reunion intake was not subject to such adjustments (See Trlin and Spoonley, 1986). Also, Samoan and Dutch immigrants were not subject to the OPL criterion.

In this part, we analyse the highest qualifications of immigrants arriving in New Zealand during the previous two decades. Skills are difficult to measure. One commonly used proxy for skills, and the only one available in Census data, is the highest formal educational qualification a person has received. We distinguish between: no qualification, school qualification, vocational qualification (post-secondary), and university qualification. There are (at least) three reasons why this measure of skills is only a partial measure of the "true" skill level of a person. Firstly, a given qualification may not enhance the skills of different individuals by the same amount. The quality of education might differ, or different individuals may benefit unequally from their education. Secondly, by grouping qualifications together into broad categories, such as university qualification, the possibility of substantial heterogeneities in the effect of these qualifications on labour market relevant skills is neglected. Finally, the measure ignores the fact that skills are generated by factors other than formal education, such as individual ability or informal learning. For now, we ignore these for us unobservable skill components and focus on the highest formal qualification as reported in the Census.

Table 6 lists the proportion of immigrants, recent immigrants and natives, all of working age, with one of the four types of highest qualification. The two dominant patterns are that (i) relative to natives, immigrants had uniformly higher education levels in all three Census years, and that (ii) the level of education increased for both natives and for immigrants. For instance, the proportion of New Zealanders without any qualification dropped from 50 percent in 1981 to 30 percent in 1996, while the proportion of immigrants without any qualification dropped from 46 percent in 1981 to 23 percent in 1996. Similarly, the proportion of New Zealanders with a university qualification doubled from 4 percent in 1981 to 8 percent in 1996, while the proportion of immigrants with a university qualification almost tripled from 6 percent in 1981 to 16 percent in 1996. The trend towards more education was most pronounced among recent immigrants, where the proportion without any qualification fell to 14 percent in 1996, down from 37 percent in 1981, while the proportion with a university qualification reached 25 percent in 1996, up from 12 percent in 1981.[32]

[32] More detailed information on highest qualification by gender and location of residence in New Zealand is provided in Tables A23-A28.

Table 6: Educational Attainment, New Zealanders, All Immigrants and Recent Immigrants, 1981, 1986, and 1996 (in percent).

	Highest Qualification			
	None	School	Vocational	University
		1981		
All Immigrants	45.8	25.9	20.5	6.2
Recent Immigrants	37.2	28.6	19.5	11.6
New Zealanders	49.5	26.7	16.9	3.6
		1986		
All Immigrants	30.9	27.9	31.2	8.5
Recent Immigrants	22.8	30.0	30.1	14.2
New Zealanders	38.8	28.5	24.8	5.2
		1996		
All Immigrants	23.3	31.9	27.8	15.5
Recent Immigrants	13.5	35.3	22.9	24.7
New Zealanders	29.6	34.7	26.1	8.0

The educational difference between immigrants and natives was large: immigrants were about 30 percent more likely to have a post-school qualification than natives in any of the Census years, while recent immigrants were between 40 and 50 percent more likely. In absolute terms, the gap in post-school qualifications between natives and recent immigrants increased from 10 percentage points in 1981 to 14 percentage points in both 1986 and 1996. Moreover, relative to natives with post-school qualifications, immigrants tended to have a higher proportion of university qualifications and a lower proportion of vocational qualifications. In 1981, for instance, about 37 percent of recent immigrants with a post-school qualification had a university qualification, compared to only 18 percent of natives. By 1996, this proportion had increased to more than 50 percent for recent immigrants, but stayed the same for natives. [33] We conclude that New Zealand has always attracted relatively highly qualified immigrants and that immigrants arriving in the first half of the 1990's had exceptionally high qualifications.

[33] The 1991 policy reform apparently did not explicitly target the vocational/university mix of skills. In fact, the point system awarded only two extra points for a university qualification compared to a vocational qualification (out of an average pass mark of 25-28 points). However, this 2 points became critical in 1994, when it became practically impossible for anyone without a Master degree to gain residence (communication from NZIS).

7.3. Some immigrant demographics

7.3.1. Age

Table 7 shows the age distribution for the three working age populations, all immigrants, recent immigrants, and natives, for 1981, 1986 and 1996.[34] We find that the average age of a New Zealander in the working age population was 35 years in 1981 and 1986 and 36 years in 1996 whereas the average age of an immigrant was 40 years. Of particular interest is the comparison of recent immigrants and natives. It tells us whether or not immigrants are relatively youthful when they arrive, and hence whether or not they lower the average age of the New Zealand working age population. [35]

Table 7: Age Distribution of New Zealanders, All Immigrants and Recent Immigrants, 1981, 1986, and 1996.

	All Immigrants			Recent Immigrants			Natives		
Age	1981	1986	1996	1981	1986	1996	1981	1986	1996
15-24	0.160	0.159	0.153	0.308	0.289	0.279	0.315	0.297	0.244
25-34	0.227	0.208	0.225	0.400	0.393	0.323	0.242	0.247	0.243
35-44	0.227	0.246	0.243	0.182	0.210	0.247	0.173	0.196	0.224
45-54	0.208	0.200	0.217	0.067	0.070	0.107	0.139	0.134	0.170
55-64	0.176	0.186	0.159	0.042	0.037	0.042	0.129	0.124	0.116
Average Age	39.6	39.9	39.5	30.7	31.0	32.3	34.6	34.6	36.1

Table 7 suggests that this was the case. Recent immigrants were on average about 4 years younger than natives. This is consistent with the analysis in Poot et al. who used demographic projections of different immigration scenarios to show that an increase in net migration slows down the ageing of New Zealand's population. The average age of recent immigrants increased by about 1.5 years over the 15 year period. In 1996, 60 percent of recent immigrants were 34 or younger, down from 71 percent in 1981. Among New Zealanders, 48 percent were younger than 34 in 1996, down from 56 percent in 1981.

[34] More disaggregated age statistics by gender, residence in New Zealand and region-of-origin are provided in Table A20.

[35] The age distribution of all immigrants, by contrast, reflects both the distribution of age-at-arrival as well as the size of immigrant flows over time, and the two components cannot be separated.

7.3.2. Parental and marital status

Apart from age and education, parental status is one of the main determinants of labour market outcomes, in particular for women. Women with small children are much less likely to engage in full-time employment than women without children. Furthermore, labour market outcomes differ between joint and sole parents. The following family definitions were used, as used by Statistics New Zealand:[36] A family unit is any couple with or without children or a sole parent with child. Non-family persons are persons living alone or persons in a non-family situation such as flatmates.

Table 8:Parental and (de facto) Marital Status, New Zealanders, All Immigrants and Recent Immigrants, 1981, 1986 and 1996 in percent).

	Joint Parent			Sole Parent			Partner		
	1981	1986	1996	1981	1986	1996	1981	1986	1996
All Immigrants	54.2	35.7	40.9	3.2	3.0	4.7	74.8	70.8	71.1
Recent Immigr.	61.9	36.3	45.5	2.1	1.7	3.5	65.2	61.8	65.5
New Zealanders	55.8	35.6	33.9	4.4	4.1	6.8	62.0	59.6	60.0

Table 8 gives the proportion of parents with dependent children, either joint or sole, among all individuals living in a family situation.[37] In 1981, 56 percent of the New Zealand born, and 54 percent of all immigrants, were joint parents. Sole parenthood was restricted to 4 and 3 percent, respectively. By 1996, joint parenthood had declined to 34 percent for New Zealanders and to 41 percent for immigrants, while sole parenthood had increased to 7 and 5 percent, respectively. In 1996, 17 percent of all New Zealand parents were sole parents, compared to 10 percent of all immigrant parents. It is interesting to note that while the proportion of parents among New Zealanders steadily declined over the period, the immigrant proportion of parents increased between 1986 and 1996. As a result, in 1996 immigrants were 5 percent more likely to live with a dependent child than natives, although immigrants were 3 years older on average.

[36] It is difficult to obtain accurate and comparable information on parental status from Census data. The reason is that the Census does not ask a direct question. Rather, parental status has to be inferred from the household questionnaire. Hence, it cannot be established for persons not present at their usual place of residence at Census night. Complications of allocating children to parents arise also for multi-family households.

[37] A dependent child is here defined as any child under 16 years.

7.3.3. The role of English language proficiency

A question on language proficiency was included only in the 1996 Census. [38] Table 9 gives the proportion of working age immigrants who listed English as one of the languages they were able to "conduct an everyday conversation in", by region-of-origin and duration of residence in New Zealand. The regions-of-origin considered are Western and Eastern Europe, Northeast, Southeast and South Asia, Pacific Islands and other countries (see Table A1 for an explanation of the country groupings). 92 percent of all immigrants from these regions living in New Zealand in 1996 "spoke English", based on the above definition.

Table 9: Proportion of Immigrants Speaking English Proficiently, by Region-of-Origin and Years in New Zealand, 1996.

	Years Since Migration					
	0-5	6-10	11-15	16-20	>20	Total
Western Europe	0.982	0.989	0.989	0.988	0.981	0.984
Eastern Europe	0.871	0.955	0.970	0.964	0.970	0.914
Northeast Asia	0.653	0.707	0.743	0.797	0.867	0.679
Southeast Asia	0.837	0.893	0.862	0.936	0.990	0.878
Southern Asia	0.861	0.885	0.930	0.920	0.951	0.893
Pacific Islands	0.796	0.817	0.836	0.866	0.900	0.849
Other	0.968	0.987	0.994	0.996	0.998	0.991
Total	0.834	0.880	0.928	0.954	0.980	0.920

Virtually all immigrants from Western Europe and all immigrants from other areas (including native English speakers such as US Americans and Canadians) spoke English from the day when they arrived in the country. [39] Recent immigrants from other regions had a worse record. 35 percent of recent immigrants from Northeast Asia, and 20 percent of recent immigrants from the Pacific Islands stated that they were not able to conduct an everyday conversation in English. The "non-speaking rates" of recent immigrants from other Asian regions and Eastern Europe varied between 13 and 16 percent.

[38] The exact question was: "In which language could you have a conversation about a lot of everyday things?" with options English; Maori; Samoan; NZ sign language; and other (please specify).

[39] Non-response rates were low on this question, below 1 percent on average and never above 6 percent. They were highest for recent immigrants from the Pacific Islands (6 percent), followed by recent immigrants from Northeast Asia (4 percent) and Southeast Asia (3 percent). The non-response rates of earlier cohorts were below 1 percent.

How quickly does English language ability improve? 71 percent of Northeast Asian immigrants with 6-10 years of residence spoke English, up from 65 percent among recent immigrants from that region. The 6 percentage points improvement may reflect learning, the out-migration of those with poorer language skills, a decline in the average English language ability of the most recent cohort, or any combination of the three factors. The speaking rate increased by another 9 percentage points to 80 percent among Northeast Asian immigrants with 16-20 years of residence in New Zealand. Similar English adjustment rates were observed Southeast Asians (5 and 10 percentage points, respectively) and South Asians immigrants (3 and 6 percent, respectively), although Southeast and South Asian immigrants had overall higher proficiency levels. A fast adjustment was observed in particular among Eastern Europeans (9 percentage points higher speaking rate for those with 6-10 years of residence relative to those with 0-5 years of residence) while the slowest improvements occurred for Pacific Island immigrants (2 percentage points for the 6-10 years cohort relative to the 0-5 year cohort). Taken together, this evidence suggests that a lack of English proficiency is a long-term aspect for Pacific Island and Northeast Asian immigrants.

Table 10: Labour Force Status and English Proficiency by Region-of-Origin for Immigrants aged 25-54, 1996.

	Employed (as proportion of working age population)	Unemployed	Not in Labour Force
No English Proficiency			
Western Europe	0.601	0.097	0.302
Eastern Europe	0.266	0.447	0.287
Northeast Asia	0.347	0.171	0.482
Southeast Asia	0.414	0.152	0.434
Southern Asia	0.390	0.266	0.344
Pacific Islands	0.449	0.181	0.370
Other	0.361	0.234	0.405
Total	0.393	0.185	0.423
English Proficiency			
Western Europe	0.789	0.054	0.157
Eastern Europe	0.624	0.228	0.148
Northeast Asia	0.508	0.128	0.364
Southeast Asia	0.683	0.089	0.228
Southern Asia	0.638	0.195	0.167
Pacific Islands	0.651	0.122	0.227
Other	0.807	0.058	0.135
Total	0.741	0.084	0.176

Furthermore, prima facie evidence in Table 10 suggests that English proficiency is an important predictor of labour market outcomes. Among many regions, employment rates were more than twice as high for those who spoke English proficiently than for those who didn't.

Likewise, unemployed to population rates were up to 17 percentage points higher for those who didn't speak English.

7.4. What do immigrants do?

Tables 11 to 17 document the various aspects of immigrants' labour market activities. At this stage, we are interested in establishing some aggregate patterns and trends in immigrant and native outcomes. A more detailed analysis by region-of-origin follows below.

7.4.1. Labour force status

Table 11 tabulates the proportions of immigrants, recent immigrants and natives, respectively, that were in full-time employment, part-time employment, unemployed or not in the labour force.[40] As in Table 10, unemployment is measured in proportion to the working age population and *not* in proportion to the labour force. Over the fifteen-year period, working age New Zealanders experienced increasing employment (from 68 percent in 1981 to 71 percent in 1996), increasing unemployment and decreasing non-participation.

Table 11: Labour Force Status, New Zealanders, All Immigrants and Recent Immigrants, 1981, 1986, and 1996 (proportions).

	Full-Time	Part-Time	Unemployed	Not in LF
		1981		
All Immigrants	0.620	0.092	0.027	0.262
Recent Immigrants	0.586	0.065	0.048	0.301
New Zealanders	0.585	0.092	0.032	0.291
		1986		
All Immigrants	0.617	0.100	0.044	0.240
Recent Immigrants	0.566	0.076	0.063	0.296
New Zealanders	0.599	0.100	0.053	0.248
		1996		
All Immigrants	0.503	0.134	0.091	0.273
Recent Immigrants	0.364	0.103	0.141	0.392
New Zealanders	0.548	0.164	0.080	0.208

A different trend is observed for immigrants. Their aggregate employment rate declined from 71 percent in 1981 to 63 percent in 1996. While immigrants were more likely to be in employment and less likely to be unemployed than natives in 1981, the relative position had

[40] For labour force definitions, see section 6.5.

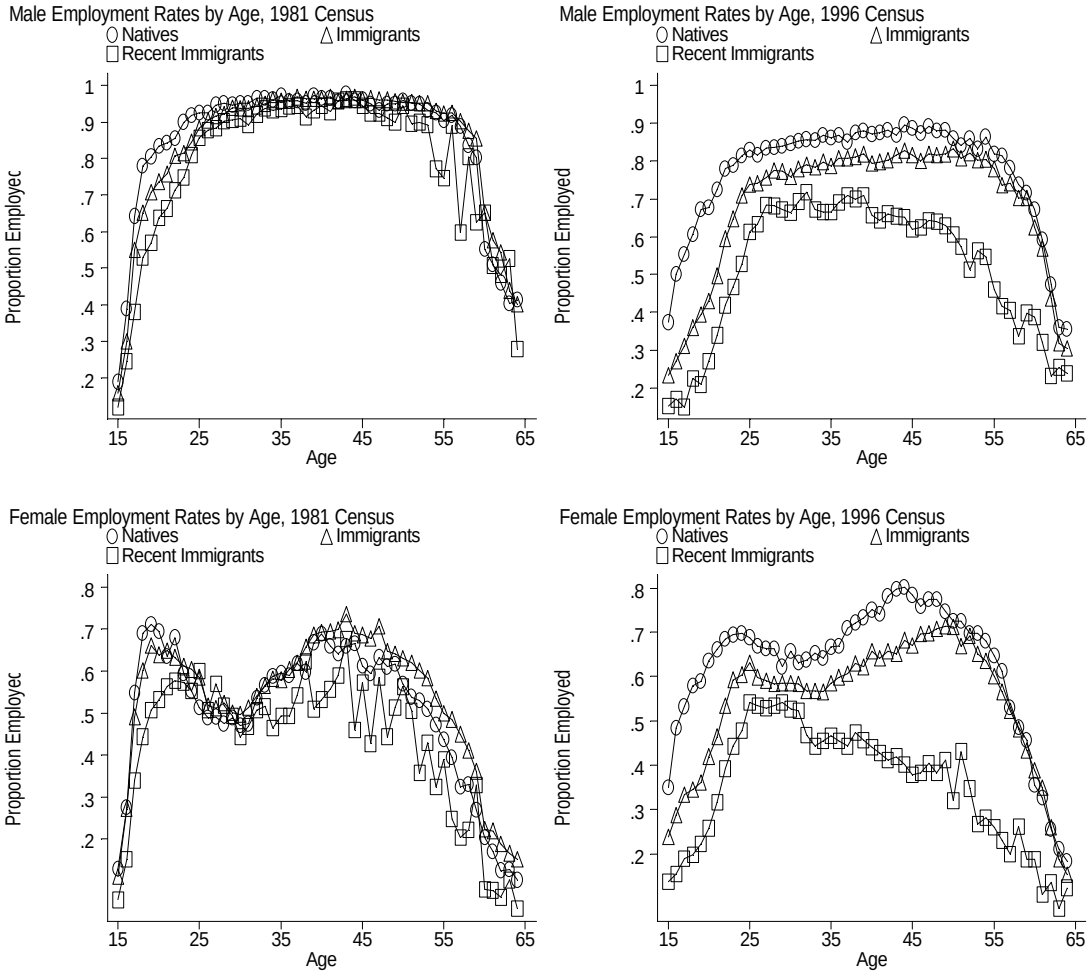
reversed fifteen years later. Most of the fall in relative employment rates of immigrants was associated with a relative increase in non-participation. In 1996, the immigrant non-participation rate exceeded the native rate by 7 percentage points (i.e., 88 percent of the employment rate difference of 8 percentage points). For both natives and immigrants, the employment mix shifted from full-time to part-time work. For instance, in 1996, 23 percent of employed natives worked part-time, up from 14 percent in 1981. The part-time propensity among employed immigrants increased from 13 percent to 21 percent.

At any point, recent immigrants had lower employment rates and a higher incidence of unemployment and non-participation than both natives and immigrants as a whole. However, the gap was small in both 1981 and 1986. A major change occurred between 1986 and 1996. Immigrants arriving between 1990 and 1996 had substantially poorer relative labour market outcomes. Only 46 percent of recent immigrants were in employment in 1996, down from 64 percent in 1986 and 65 percent in 1981. The non-participation rate was almost twice as high as the native rate. To summarise, the data indicate a deterioration in the relative labour market position (as measured in terms of employment and unemployment rates) of immigrants arriving in the early 1990's.

Two important factors influencing relative labour market outcomes for natives and immigrants are age and gender. Women have typically lower participation rates, as do young people and people approaching the retirement age, young people because of study, and old people because of early retirement. Moreover, young people typically have higher unemployment rates while entering the labour market, and recent immigrants are younger on average. [41] The full extent of these life cycle and gender patterns is apparent from Figure 3 where we plot employment rates against age for men and women, for natives, all immigrants and recent immigrants and for the two Census years 1981 and 1996. The dominant features are the strong inverse-U-shaped employment pattern for men, lower female employment rates and a "birth-dent" for women between the ages of 25 and 35, and the substantial relative decline in employment rates for immigrants in 1996, in particular for those below the age of 20 and above the age of about 40. The figures vividly illustrate that for men at least, an analysis of labour force status proper should focus on the relatively homogeneous mid-aged population, aged between 25 and 54, say.

[41] Note, though, that the age distributions did not change that much over time, making it unlikely that age alone can explain the *trends* in relative employment.

Figure 3: Age-employment profiles, men and women, 1981 and 1996.



In Table 12 we tabulate employment, participation and unemployment rates for different age groups and separately for males and females. The age groups are 15-24 years, 25-54 years and 55-64 years. Employment and participation rates are expressed as a proportion of the working age population, while the unemployment rate reported in this table is expressed as a proportion of the labour force.

The employment data in Table 12 mirror the findings of Figure 3. In 1981, 55 percent of native women aged 15-24, and 70 percent of native men aged 15-24, were employed. For the 25-54 age group, native employment rates were 56 percent for women and 95 percent for men, dropping to 25 percent for women and 69 percent for men for the 55-64 age group. Few changes occurred between 1981 and 1986. Between 1986 and 1996, male and female employment rates moved in opposite directions. Female employment rates increased by 1.3 percentage points for the 15-24 age group, by 6.8 percentage points for the 25-54 age group,

and by 14.4 percentage points for the 55-64 age group, while male employment rates decreased by 4.3, 7.4, and 1.4 percentage points, respectively. On average, the female increase outweighed the male decrease, leading to an overall increase in employment rates. Concurrently, unemployment rates increased for all natives, by between 2 and 5 percentage points for women, and by between 4 and 6 percentage points for men.

Table 12: Employment Rates, Labour Force Participation Rates and Unemployment Rates, New Zealanders All Immigrants and Recent Immigrants, by Sex and Agegroup, 1981, 1986, and 1996.

	1981			1986			1996		
	Emp	Lfp	Unemp	Emp	Lfp	Unemp	Emp	Lfp	Unemp
Female									
15-24									
All Immigrants	0.537	0.601	0.106	0.565	0.665	0.150	0.423	0.560	0.244
Recent Immigr.	0.473	0.549	0.137	0.466	0.562	0.171	0.274	0.393	0.304
New Zealanders	0.550	0.618	0.110	0.580	0.682	0.150	0.593	0.743	0.202
Female									
25-54									
All Immigrants	0.608	0.624	0.025	0.660	0.706	0.065	0.632	0.721	0.123
Recent Immigr.	0.518	0.550	0.059	0.532	0.591	0.101	0.466	0.609	0.234
New Zealanders	0.563	0.577	0.023	0.636	0.683	0.069	0.704	0.770	0.085
Female									
55-64									
All Immigrants	0.326	0.332	0.018	0.320	0.337	0.052	0.403	0.435	0.074
Recent Immigr.	0.171	0.188	0.091	0.153	0.185	0.170	0.183	0.257	0.289
New Zealanders	0.251	0.253	0.010	0.276	0.289	0.046	0.420	0.450	0.068
Male									
15-24									
All Immigrants	0.642	0.707	0.092	0.642	0.740	0.132	0.439	0.572	0.232
Recent Immigr.	0.593	0.661	0.103	0.560	0.655	0.144	0.271	0.389	0.304
New Zealanders	0.704	0.766	0.081	0.693	0.788	0.121	0.650	0.789	0.176
Male									
25-54									
All Immigrants	0.950	0.977	0.027	0.934	0.961	0.029	0.798	0.893	0.106
Recent Immigr.	0.913	0.954	0.043	0.891	0.931	0.042	0.662	0.828	0.200
New Zealanders	0.952	0.976	0.024	0.935	0.961	0.028	0.861	0.921	0.066
Male									
55-64									
All Immigrants	0.741	0.760	0.025	0.673	0.699	0.037	0.600	0.656	0.085
Recent Immigr.	0.620	0.691	0.103	0.466	0.533	0.126	0.357	0.467	0.236
New Zealanders	0.692	0.706	0.020	0.636	0.654	0.028	0.650	0.696	0.067

"Unemp" gives the number of unemployed persons as a proportion of the labour force.

The table documents that the divergence in labour market outcomes between immigrants and natives affected all age groups and both sexes, and that most of it occurred between 1986 and 1996. Before 1986, the employment and participation rates of immigrants were similar to those of natives. Among the young, immigrants were less likely to participate, while among 55-64 year olds, immigrants had higher participation rates than natives. Mid-aged immigrant women were more likely to participate, while participation rates among mid-aged men were the same for both immigrants and natives. With one exception (women aged 55-64), differences were within five percentage points.

The 1986-1996 changes in labour market outcomes were most pronounced for the 15-24 age group. Employment rates for this group of immigrants decreased by 14 percentage points for women, and by 20 percentage points for men. Among recent immigrants, the changes were 19 and 29 percentage points, respectively. [42] Relative to natives in this age group, employment rates of recent immigrants fell from 80 percent of native rates in 1986 to 46 percent of native rates in 1996 for women, and from 81 percent to 42 percent for men. For the 25-54 age group 1996 relative employment rates of recent immigrants were 66 percent for women, down from 83 percent in 1986, and 77 percent for men, down from 95 percent in 1986. The only group for which immigrant employment rates actually increased during the 1986-1996 period were women aged 55-64, 3 percentage points for recent immigrants. But again, the increases were larger for natives, so that the relative outcomes of female recent immigrants in this age group decreased from 55 percent in 1986 to 43 percent in 1996.

Similar relative movements are also observed for participation rates and unemployment rates, although some of the patterns are quite complex. The decomposition of labour market outcomes by age and gender confirms the overall conclusion of the aggregate analysis, namely that a substantial deterioration in the relative labour market position of immigrants took place between 1986 and 1996, and that this deterioration was driven by the changes in the outcomes of the most recent immigration cohort, those arriving in early 1990's.

The age specific analysis points to a potentially important factor in explaining at least part of this recent trend. As far as young immigrants are concerned, their low (and falling) participation rates might be associated with a disproportionate (and increasing) participation of immigrants in secondary and post-secondary education. In fact, this hypothesis is supported by data on full-time study attendance rates at the time of the 1996 Census.

Table 13: Proportion of working age population in full-time study, natives and recent immigrants, by age, and region-of-origin, 1996.

	Age					
	15-19	20-24	25-29	30-54	55-	Total
New Zealand	0.238	0.066	0.030	0.018	0.012	0.051
UK & Ireland	0.315	0.054	0.018	0.020	0.031	0.036

[42] The falling employment and participation rates could be viewed as a positive development if the non-participants were in full-time education and did not need to work to support themselves.

Australia	0.314	0.058	0.036	0.026	0.021	0.062
Europe & Nth America	0.546	0.225	0.078	0.050	0.032	0.113
Pacific Islands	0.362	0.144	0.066	0.038	0.005	0.130
Asia	0.738	0.530	0.220	0.165	0.046	0.335
Other	0.471	0.216	0.121	0.070	0.043	0.143
All Immigrants	0.617	0.349	0.117	0.095	0.034	0.208

We find that recent immigrants were more than four times as likely as natives to be in full-time study (21 percent compared to 5 percent of the working age population). 62 percent of recent immigrants aged 15-19, but only 24 percent of natives in this age group, were in full-time study.[43] In the 20-24 year age group, the full-time study rates were 35 and 7 percent, respectively.

Table 14 provides information on an "inactivity ratio", using 1996 Census data. This ratio gives the proportion of the respective populations that was neither employed nor enrolled in full-time study. It shows that education is an important factor explaining the differences in participation and employment rates between young immigrants and natives. Young recent immigrants aged 15-19 years had a lower inactivity ratio than natives of the same age (20 percent and 24 percent, respectively). However, older recent immigrants had higher inactivity rates. The relative difference was largest for those aged 30-54; for that group, 19 percent of natives were inactive, compared to 35 percent of recent immigrants.

[43] Note that although we refer to our study population as "immigrants", we can not distinguish between young foreign born people who were in New Zealand on student permits and those who were permanent residents.

Table 14: Proportion of the working age population that was inactive (neither employed nor in full-time study), natives and recent immigrants, by age and region-of-origin, 1996.

	Age					
	15-19	20-24	25-29	30-54	55-	Total
New Zealand	0.238	0.218	0.227	0.193	0.456	0.236
UK & Ireland	0.204	0.178	0.157	0.185	0.607	0.201
Australia	0.211	0.206	0.159	0.219	0.490	0.210
Europe & Nth America	0.206	0.301	0.257	0.313	0.579	0.304
Pacific Islands	0.393	0.381	0.411	0.484	0.813	0.452
Asia	0.160	0.233	0.361	0.440	0.747	0.357
Other	0.229	0.336	0.369	0.351	0.618	0.344
All Immigrants	0.203	0.268	0.294	0.354	0.698	0.326

7.4.2. Self-employment

Table 15 shows self-employment as a proportion of employment. In both 1981 and 1986 the native self-employment rate exceeded that of immigrants by about 2 percentage points. Furthermore, recent immigrants had much lower self-employment rates. This is consistent with the notion that starting up one's own business needs time.

Table 15: Self Employment as a Proportion of Total Employment.

	1981	1986	1996
All Immigrants	0.111	0.157	0.197
Recent Immigrants	0.060	0.101	0.156
New Zealanders	0.136	0.171	0.187

However, the data also show that self-employment rates had increased disproportionately for both all immigrants and recent immigrants by 1996. The immigrant self-employment rate exceeded the native rate by one percentage point in 1996. This development might be attributable to recent changes in immigration policy designed to encourage business immigration. Alternatively, the growth of self-employment among immigrants could be a response to increased difficulties in obtaining waged jobs. This is more likely to be true if the growth of self-employment occurred in occupations that do not require much capital or skills, such as taxi driving.

7.4.3. Hours of work and overtime work

In Table 16, we display the average hours of work for those who were either full-time or part-time employed (excluding those who reported zero hours of work). Furthermore, we give the proportion of individuals in full-time employment (defined as those working 30 hours per week or more) who reported working for 41 hours per week or more. We refer to this event as "overtime work".

Table 16: Average hours of work for employed people and proportion of full-time workers who reported weekly hours above 40.

	Average Hours			Weekly Hours >40		
	1981	1986	1996	1981	1986	1996
All Immigrants	40.0	40.5	39.5	0.337	0.410	0.502
Recent Immigrants	40.4	41.0	39.0	0.292	0.384	0.496
New Zealanders	40.4	40.8	39.4	0.386	0.455	0.553

While the average hours of work recorded by the Census have hardly changed over the period (and, if anything, slightly declined towards the end of the period), the propensity to work overtime showed a clear upward trend, increasing for natives from 39 percent in 1981 to 55 percent in 1996. Fewer immigrants reported overtime hours. The gap of 5 percentage points was small and stable over time. Recent full-time employed immigrants had typically lower overtime rates than all immigrants, but the gap closed by 1996, where 50 percent worked overtime in both groups.

7.5. The income of immigrants

Income is measured in the Census as nominal pre-tax total personal annual income. It includes income from work, income from other sources, and government transfer payments. The Census captures income data in bands rather than in exact dollars. Taking the midpoint of each band generates a "continuous" income measure. [44] In order to obtain an indication as to the relative importance of earnings as opposed to income from other sources in our income measure, we report incomes for the population as a whole, as well as incomes for the subset of people who

[44]More sophisticated methods are available. For instance, one could fit a log-normal distribution over the grouped data and then assign to each individual the expected value within each group. It does not make a big difference. However, we have used this method in order to determine the income for the highest open income category (>100,000, say), where no obvious midpoint was available.

were full-time employed at the time of the Census. Since the focus of our analysis is on incomes of immigrants *relative* to incomes of native, the issue of choosing an appropriate deflator does not arise.

Table 17: Average Income, 1981, 1986, and 1996.

	All Individuals					
	In current NZ dollars			Relative to Natives		
	1981	1986	1996	1981	1986	1996
All Immigrants	9194	15054	23103	1.08	1.11	0.99
Recent Immigrants	7525	12682	17443	0.88	0.94	0.75
New Zealanders	8537	13541	23312			
	Full-time Workers					
	In current NZ dollars			Relative to Natives		
	1981	1986	1996	1981	1986	1996
All Immigrants	12882	20137	34788	1.04	1.10	1.06
Recent Immigrants	11431	18827	33016	0.93	1.03	1.00
New Zealanders	12356	18227	32954			

Table 17 shows that for the average New Zealander, nominal income in current dollars increased from 9 thousand in 1981 to 14 thousand in 1986 and to 23 thousand in 1996. Income levels of full-time workers were about 40 percent higher than those of all New Zealanders. A comparison with immigrant incomes shows that (i) immigrants tended to have higher incomes than natives (except for "all immigrants" in 1996), and (ii) the relative income of immigrants fell between 1986 and 1996. The relative income of all immigrants decreased from 1.11 to 0.99, while the relative income of full-time employed immigrants decreased from 1.10 to 1.06. This is without accounting for differences between immigrants and natives in individual characteristics such as age or education, for differences in weeks worked during the year, or for differences in the proportion of income originating from public transfers or wealth..

Recent immigrants tend to have lower incomes: 6 percent below native incomes in 1986, falling to 25 percent below native incomes in 1996. Part of the drop in relative income between 1986 and 1996 is explained by the growing gap in employment rates. In fact, once only full-time workers are considered, the 1996 incomes of recent immigrants and natives are the same. However, it is questionable whether an increase in employment would necessarily narrow the income gap between recent immigrants and natives. It is possible that currently non-employed recent immigrants differ in the level, field, and quality of qualifications held, in English language ability etc. Hence one cannot assume that recent immigrants without full-time employment have the same income earning potential as recent immigrants in full-time employment.

One issue associated with the income levels of (recent) immigrants is the extent to which immigrants use welfare benefits. A disproportionate use of the welfare system is one of the ways in which immigration could adversely affect the well being of natives.[45] The available information only indicates whether or not a person has received at least one welfare benefit during the previous 12 months.[46] It does not give the benefit duration or the benefit level. Table 18 shows that immigrants had about the same probability as natives of having received at least one benefit payment. In 1996, the proportion of natives who had received a benefit dropped to 26 percent, down from 38 percent in 1986, for natives; and to 23 percent, down from 37 percent in 1986, for immigrants. This drop was likely caused by the abolition of the universal family benefit on 1 October 1986. Recent immigrants always were less likely than natives to have received a benefit in all three Census years.[47]

Table 18: Proportion of Working Age Population Receiving Income from a Social Welfare Benefit at some time during the last 12 months prior to the Census.

	1981	1986	1996
All Immigrants	0.347	0.368	0.227
Recent Immigrants	0.245	0.264	0.181
New Zealanders	0.343	0.376	0.259

[45] This is a highly simplified view. The real question is whether or not immigrants are *net* welfare recipients, i.e., whether they receive more welfare benefits than they contribute (through taxes or other payments) as a group over their lifetime.

[46] The benefit definition is very inclusive and includes many partial benefits, such as childcare subsidies, and some "universal" benefits, such as the Family Benefit, which in 1981 and 1986 was paid to all parents of children aged under 16 years.

[47] Immigrants are expected to have sufficient personal resources to maintain themselves and their dependents for at least the first 12 months of residence in New Zealand. During this period, they are not entitled to any NZISS benefits unless in severe financial hardship. Although the policy of "non-entitlement" was not well enforced until October 1995, when enforcement was tightened up, benefit take-up rates might have been higher if the Government had not adopted this approach.

7.6. Results by region-of-origin[48]

So far immigrants have been treated as one group, and possible heterogeneities across groups of immigrants have been ignored. The only distinction was between all immigrants and recent immigrants. A high level of aggregation was useful in order to obtain a preliminary view of overall trends without getting lost in detail. However, based on the aggregate analysis alone it is difficult to develop a detailed understanding of the causes of observed trends, such as the deterioration in the relative position of recent immigrants. It is important to know by how much regional immigrant groups differ in productivity-related characteristics and labour force outcomes, since in that case changes in the regional composition of the immigrant flows might explain some or most of the observed aggregate trends.

But there are other reasons for an interest in the relative characteristics of immigrants from different regions or countries of origin. First and foremost, country-of-origin is one of easiest discriminating factors for a targeted immigration policy. By contrast, a factor such as "skill" (a strategic variable emphasised in the 1991 policy review) is much harder to measure. Secondly, in many cases region-of-origin is highly correlated with ethnicity. Hence, a region-of-origin based analysis may shed light on New Zealand's future ethnic and cultural make up.

In most of this part we distinguish between six regions of origin: the UK and Ireland; Australia; Europe and North America (referred to briefly as "Europe"); the Pacific Islands; Asia; and other countries. However, we also provide some information on a country-of-origin basis, looking for possible heterogeneities within the various region-of-origin groupings. Finally, we will also in most cases distinguish between male and female populations. Our overall conclusion from this section is that regional differences are large and important. While immigrants from the UK, Australia, Europe and North America are similar in many respects, Asian and Pacific Island immigrants are different both in their characteristics (endowments) and in their labour market outcomes.

[48] We remind the reader that for the purposes of this study "region-of-origin" refers to birthplace rather than place of previous permanent residence.

7.6.1. The UK and Ireland

Immigrants from the UK and Ireland were the most numerous group of working age immigrants, with a total of 152 thousand immigrants in 1996. The size of the next largest group, Asian immigrants, was 89 thousand in 1996. Moreover, judged by the limited set of labour market indicators used in this study, UK and Irish immigrants were arguably the most successful group of immigrants among all regions-of-origin.

They have several distinctive demographic characteristics. First and foremost, they came earlier on average. In 1996, the average duration of residence in New Zealand was 24 years for immigrants from the UK and Ireland, compared to 18 years for immigrants from Australia, Europe and North America, 15 years for the Pacific Islands and 7 years for Asia.

Table 19. Years since Migration

	1981	1986	1996
UK & Ireland	18.5	20.4	23.6
Australia	15.9	17.5	18.3
Europe & Nth America	18.8	19.7	17.7
Pacific Islands	12.2	13.5	15.4
Asia	13.6	13.1	7.2
Other	13.7	15.0	12.0

Secondly, they had a higher average age than other immigrants when they arrived in New Zealand (31 years in 1981 and 1986 and 33 years in 1996).

Table 20: Age at Arrival in New Zealand for recent immigrants (Proportions and averages), by region of origin, 1981, 1986, and 1996.

	1981			1986			1996		
Region-of-Origin	15-24	55-64	Mean	15-24	55-64	Mean	15-24	55-64	Mean
UK & Ireland	0.251	0.049	31.3	0.247	0.035	31.2	0.148	0.038	32.9
Australia	0.451	0.020	27.6	0.364	0.025	28.8	0.296	0.016	30.1
Europe & Nth Am.	0.314	0.027	29.9	0.276	0.020	30.2	0.214	0.032	32.6
Pacific Islands	0.641	0.023	24.6	0.630	0.032	25.2	0.522	0.060	27.8
Asia	0.517	0.022	26.8	0.445	0.024	27.8	0.378	0.030	29.7
Other	0.351	0.017	28.4	0.296	0.022	29.5	0.257	0.023	31.6
Total	0.410	0.031	28.4	0.389	0.028	28.7	0.321	0.033	30.6

Note that with our data, we cannot compute the age at arrival for all immigrants who ever arrived, but only for those who arrived and are still in the working age resident population. But this is not the same. For instance, we find that UK immigrants in our sample had the second lowest age at arrival among all immigrants in 1996. This is because Britons came early, and on

average only those who arrived as youngsters were still part of the working age population in 1996. Using data on recent immigrants only provides a more accurate measure. Here, we see that Britons in fact tended to be older than other immigrants when they migrated to New Zealand. The fact that Britons arrived later in their life means that they were more likely to have both finished formal education and acquired a substantial amount of labour market experience before coming to New Zealand.

Both earlier arrival and higher age at arrival, contributed to an average age of an UK and Irish immigrant that, at about 44 years in 1996, was up to 8 years above the average age of immigrants from other regions.

Table 21: Average Age of Immigrants and New Zealanders .

	All Immigrants		
	1981	1986	1996
New Zealand	34.5	34.6	36.0
UK & Ireland	41.6	42.1	44.1
Australia	36.8	36.9	36.9
Europe & Nth America	42.0	42.5	41.3
Pacific Islands	33.0	33.9	36.7
Asia	35.7	35.9	34.2
Other	35.2	35.6	36.4

As a consequence, UK and Irish immigrants in our sample were less likely to be parents of dependent children (aged under 15) than other immigrants, since children are likely to have grown up and left the "dependency" status (See Table 26).

Table 22 summarises the educational attainment of all and recent immigrants by region-of-origin. Like all other immigrant groups except for Pacific Islanders, British immigrants had higher education levels than natives. The distinctive feature of British migrants was the atypical mix of tertiary education. The proportion of UK and Irish immigrants with a university qualification was always below that of other regions (except the Pacific Islands and, in 1996, Australia), while the proportion with vocational training was the highest among all regions of origin (except for 1986, where it was just exceeded by other Europe and North America). The patterns were similar among recent immigrants. Again, the British tended to have the highest proportion of immigrants with vocational training. [49]

[49]Tables A25-A27 allow for an explicit analysis of gender and Auckland specific differences in education levels. As expected, education levels are higher for men than for women. However, this education gap decreased over time and by 1996 had almost disappeared for recent UK and Irish

Table 22: Educational Attainment, New Zealanders and All and Recent Immigrants, by Region-of-Origin (proportions).

	I. All Immigrants				II. Recent Immigrants			
	Highest Qualification				Highest Qualification			
	None	School	Vocat.	Uni	None	School	Vocat.	Uni
1981								
New Zealand	0.495	0.267	0.169	0.036				
UK & Ireland	0.442	0.251	0.239	0.055	0.307	0.248	0.302	0.124
Australia	0.393	0.318	0.209	0.062	0.316	0.333	0.225	0.109
Europe & Nth Am.	0.405	0.290	0.212	0.082	0.231	0.336	0.217	0.188
Pacific Islands	0.712	0.177	0.068	0.012	0.645	0.233	0.052	0.010
Asia	0.378	0.300	0.143	0.158	0.386	0.331	0.085	0.158
Other	0.238	0.368	0.239	0.133	0.186	0.354	0.214	0.209
1986								
New Zealand	0.388	0.285	0.248	0.052				
UK & Ireland	0.297	0.259	0.359	0.076	0.172	0.244	0.426	0.139
Australia	0.236	0.355	0.301	0.081	0.165	0.357	0.331	0.125
Europe & Nth Am.	0.198	0.300	0.368	0.123	0.065	0.274	0.406	0.232
Pacific Islands	0.538	0.260	0.157	0.021	0.442	0.326	0.164	0.022
Asia	0.290	0.305	0.199	0.186	0.274	0.347	0.156	0.189
Other	0.123	0.343	0.330	0.184	0.074	0.304	0.318	0.277
1996								
New Zealand	0.296	0.347	0.261	0.080				
UK & Ireland	0.217	0.281	0.362	0.137	0.084	0.242	0.388	0.277
Australia	0.174	0.376	0.294	0.136	0.117	0.354	0.299	0.211
Europe & Nth Am.	0.130	0.303	0.342	0.213	0.050	0.297	0.295	0.333
Pacific Islands	0.451	0.320	0.182	0.037	0.344	0.406	0.183	0.039
Asia	0.188	0.381	0.167	0.230	0.141	0.411	0.155	0.243
Other	0.136	0.298	0.285	0.260	0.115	0.272	0.248	0.331

What were the consequences of these distinctive characteristics of UK and Irish immigrants for their labour market outcomes? With above average age, above average (vocational) education, a longer duration of stay in New Zealand, a higher proportion of male migrants and a lower proportion of families with dependent children, we would expect UK and Irish immigrants to achieve more favourable labour market outcomes than most other immigrants.

Table 23: Employment Rates, Labour Force Participation Rates and Unemployment Rates, All Immigrants, by sex.

immigrants. Perhaps somewhat surprisingly, there is evidence that Auckland attracts less educated UK and Irish migrants than the rest of New Zealand. However, while the difference is systematic and persistent, it is not large. It is most evident in the proportion of migrants with university qualification. In 1981, for instance, 10 percent of recent male UK and Irish immigrants in Auckland had a university qualification, compared to 19 percent for the rest of the country. The corresponding proportions in 1996 were 28 percent for Auckland and 32 percent for the rest of the country.

	1981			1986			1996		
	Emp	Lfp	Unemp	Emp	Lfp	Unemp	Emp	Lfp	Unemp
				1. Men					
All Immigrants									
UK & Ireland	0.879	0.901	0.025	0.857	0.886	0.033	0.819	0.871	0.061
Australia	0.859	0.895	0.040	0.818	0.866	0.056	0.792	0.866	0.085
Europe & Nth Am.	0.883	0.911	0.031	0.837	0.867	0.035	0.749	0.829	0.096
Pacific Islands	0.825	0.902	0.086	0.804	0.874	0.081	0.644	0.781	0.175
Asia	0.789	0.815	0.032	0.785	0.829	0.053	0.508	0.647	0.214
Other	0.826	0.859	0.038	0.822	0.861	0.045	0.697	0.836	0.166
Recent Immigrants									
UK & Ireland	0.892	0.923	0.034	0.888	0.920	0.035	0.841	0.910	0.075
Australia	0.879	0.930	0.055	0.835	0.891	0.063	0.820	0.893	0.082
Europe & Nth Am.	0.848	0.891	0.048	0.842	0.878	0.042	0.666	0.812	0.179
Pacific Islands	0.723	0.822	0.121	0.684	0.781	0.125	0.495	0.668	0.258
Asia	0.656	0.690	0.049	0.672	0.733	0.084	0.354	0.527	0.329
Other	0.748	0.797	0.062	0.751	0.808	0.071	0.586	0.794	0.261
New Zealand	0.839	0.874	0.040	0.825	0.871	0.053	0.783	0.862	0.091
				2. Women					
All Immigrants									
UK & Ireland	0.566	0.583	0.030	0.623	0.665	0.063	0.678	0.725	0.066
Australia	0.541	0.566	0.044	0.580	0.633	0.084	0.670	0.736	0.091
Europe & Nth Am.	0.513	0.532	0.035	0.532	0.575	0.076	0.599	0.680	0.120
Pacific Islands	0.503	0.543	0.075	0.531	0.610	0.128	0.491	0.625	0.215
Asia	0.539	0.562	0.041	0.543	0.591	0.082	0.399	0.512	0.222
Other	0.547	0.568	0.037	0.585	0.639	0.085	0.566	0.689	0.178
Recent Immigrants									
UK & Ireland	0.544	0.581	0.064	0.605	0.650	0.070	0.678	0.750	0.096
Australia	0.549	0.600	0.085	0.532	0.601	0.114	0.648	0.726	0.108
Europe & Nth Am.	0.452	0.486	0.070	0.505	0.564	0.104	0.507	0.653	0.223
Pacific Islands	0.404	0.473	0.148	0.420	0.527	0.203	0.353	0.520	0.322
Asia	0.434	0.471	0.078	0.419	0.483	0.132	0.271	0.408	0.337
Other	0.490	0.518	0.053	0.459	0.545	0.158	0.433	0.619	0.301
New Zealand	0.517	0.546	0.053	0.574	0.633	0.093	0.644	0.726	0.112

In terms of the labour market performance indicators considered here, UK and Irish immigrants were indeed more successful than other immigrants and natives. For both sexes and all immigrants as well as recent immigrants, Britons had the highest employment rates, the lowest unemployment rates and the lowest non-participation rates (Table 23).

This region-of-origin effect persists once we control crudely for age, as Tables A39-A42 show. For both the 15-24 and 25-54 year old age groups, UK and Ireland born men and women had higher participation rates and lower unemployment rates than anyone else in the country. Only among the 55-64 year olds did the participation rates drop below, and the male unemployment rate exceed, the rates of other region-of-origin groups.

Another dimension of an immigrant's success in New Zealand, apart from securing employment, is income. As before, we distinguish between the average income of all individuals

and of full-time workers only, and between all immigrants and recent immigrants. Income is measured relative to natives in Table 24. By and large, UK and Irish incomes exceeded native incomes by 10 to 20 percent. The income differential had a slight tendency to increase over time. The trends in relative incomes were essentially the same for the income of full-time workers, or the income of recent immigrants.

Table 24: Income Of Immigrants Relative To Natives.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
1. All individuals						
UK & Ireland	1.14	1.21	1.22	1.10	1.23	1.28
Australia	0.99	1.10	1.06	0.92	1.00	1.17
Europe & Nth America	1.14	1.14	1.09	0.97	1.07	0.99
Pacific Islands	0.79	0.79	0.72	0.55	0.53	0.41
Asia	1.00	1.02	0.66	0.64	0.72	0.46
Other	1.07	1.14	1.06	1.01	1.00	0.89
2. Full-time workers only						
UK & Ireland	1.09	1.17	1.17	1.07	1.20	1.19
Australia	1.01	1.07	1.06	0.91	1.05	1.14
Europe & Nth America	1.09	1.13	1.12	1.01	1.12	1.12
Pacific Islands	0.81	0.79	0.75	0.67	0.64	0.55
Asia	1.04	1.08	0.88	0.81	0.91	0.71
Other	1.09	1.17	1.19	1.09	1.15	1.15

A final aspect of an immigrant's successful settlement in New Zealand is the use (or lack of use) of welfare benefits. Table 25 shows, perhaps surprisingly, that a relatively high proportion of immigrants from the UK and Ireland had received at least one welfare benefit in the 12-month period before the 1981 and 1986 Censuses. One possible explanation might be their age distribution. In 1981, 22 percent of all British and Irish immigrants were aged 55-64, compared to 13 percent of New Zealanders and 6 percent of Pacific Islanders (see Table A6). Therefore, more Britons were likely to be retired and to receive benefits for that reason. Also, the age distribution might have might have led to a high number of British immigrants being eligible for the universal family benefit. This benefit was abolished on 1 October 1986. In 1996, only relatively few British and Irish immigrants had received at least one welfare benefit. Among recent immigrants, the proportion was the lowest among all region-of-origin groups.

Table 25: Proportion of Working Age Population receiving income from a Social Welfare Benefit at some time in the previous 12 months.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996

New Zealand	0.343	0.376	0.259	0.343	0.376	0.259
UK & Ireland	0.357	0.366	0.213	0.292	0.277	0.101
Australia	0.374	0.390	0.218	0.246	0.300	0.154
Europe & Nth America	0.307	0.346	0.233	0.195	0.242	0.212
Pacific Islands	0.365	0.413	0.318	0.237	0.273	0.255
Asia	0.289	0.311	0.174	0.201	0.241	0.166
Other	0.312	0.338	0.239	0.239	0.236	0.284

7.6.2. Pacific Islands

Immigrants from the Pacific Islands were the third largest group among working age immigrants over most of the period. In Auckland, they were the second largest group in 1981 and 1986 and the third largest group in 1996, when they were slightly outnumbered by immigrants from Asia. In 1996, almost 18 percent of all immigrants, and 25 percent of those living in Auckland, were Pacific Islanders. In 1996, 70 percent of all recent Pacific Island immigrants settled in Auckland, up from 65 percent in 1981 (See Table 3).

Pacific Islanders were relatively young when they arrived in New Zealand. The average age at arrival of recent Pacific Island immigrants was about 25 years in both 1981 and 1986, at least two years younger than immigrants from the other regional groups and about 6 years younger than immigrants from the UK. The average age at arrival of recent immigrants increased by almost 3 years between 1981 and 1996. Table 20 also gives the age distribution of recent arrivals. In 1981, 64 percent of all recent Pacific Island immigrants were between 15 and 24 years old when they arrived compared to 41 percent of all recent immigrants. This proportion fell to 52 percent of recent Pacific Island immigrants in 1996, compared to 32 percent of all recent immigrants. The higher proportion of school aged immigrants in both 1981 and 1996 is likely to have contributed to lower participation and employment rates of recent Pacific Island immigrants.

The increasing average of age of Pacific Island arrivals might have coincided with the ageing of populations in the Pacific Island countries. In addition, it might have been influenced by the introduction of a point system that rewards both formal education and labour market experience, although on has to keep in that relatively few Pacific Islanders gain residence through a points tested category (Cook Islands, Tokelau and Niue have automatic rights of residence, while Samoans can enter under a quota arrangement). Finally, it might reflect an increased trend toward family reunification in the early 1990's, with parents rejoining their children who migrated earlier. As a matter of fact, the proportion of older Pacific Island

immigrants (55-64) among recent arrivals almost doubled, from 3.2 percent in 1986 to 6.0 percent in 1996.

By virtue of being a relatively youthful population, Pacific Islanders can be expected to have a relatively high proportion of families with dependent children. The proportions in Table 26 confirm this. More Pacific Island immigrants were parents than immigrants from any other region or natives. The gap was large, between 10 and 20 percentage points in most instances. It certainly was larger than could be explained by the age difference, hence indicating a higher fertility rate among Pacific Island immigrants[50]. Another characteristic of Pacific Island immigrants is a relatively high incidence of sole parenthood. Pacific Island women had the highest proportion of sole mothers in all the Census years. While the proportion was below 10 percent in both 1981 and 1986, it increased to 15 percent by 1996, when one out of every four Pacific Island mothers was a sole mother.

[50] Direct information on the number of children ever born is available in the 1996 Census, but not in the 1981 and 1986 Censuses.

Table 26. Parental and Marital Status, Natives and all Immigrants.

	1981			1986			1996		
	Parent joint	sole	Part-ner	Parent joint	sole	Part-ner	Parent joint	sole	Part-ner
1. Women									
New Zealand	.529	.071	.642	.336	.064	.613	.327	.108	.610
UK & Ireland	.476	.047	.777	.313	.042	.739	.327	.056	.761
Australia	.565	.053	.743	.349	.050	.690	.349	.072	.671
Europe & Nth Am.	.485	.041	.803	.317	.038	.751	.373	.049	.747
Pacific Islands	.661	.090	.665	.449	.084	.620	.461	.148	.651
Asia	.559	.034	.718	.340	.035	.700	.456	.060	.669
Other	.554	.039	.723	.349	.039	.688	.471	.067	.724
2. Men									
New Zealand	.590	.011	.601	.376	.013	.578	.351	.020	.588
UK & Ireland	.529	.011	.765	.345	.012	.737	.352	.013	.773
Australia	.590	.013	.675	.375	.012	.621	.374	.014	.609
Europe & Nth Am.	.555	.011	.795	.356	.012	.755	.395	.011	.736
Pacific Islands	.755	.016	.658	.527	.017	.634	.545	.029	.701
Asia	.617	.011	.653	.381	.008	.621	.470	.012	.625
Other	.611	.009	.651	.376	.010	.633	.485	.013	.667

Similar figures are obtained when only recent immigrants are considered, although the incidence of parenthood was lower in general (Table A22). In terms of sole motherhood, Pacific Island women were most similar to native women. The native sole motherhood rates trailed the Pacific Island rates within 1 to 5 percentage points. Moreover, since there were fewer joint mothers among New Zealanders, the proportion of sole mothers among all mothers was, at one out of four, the same among New Zealand born and Pacific Island women (in 1996).

Pacific Islanders have low levels of formal qualifications (Table 22). The proportion of immigrants with no qualifications was higher, and the proportion of immigrants with vocational or university qualifications lower, than that of natives or any other immigrant group in all three years. The differences tended to be large. In 1981, relative to natives, the proportion of unqualified Pacific Island immigrants was 22 percentage points higher, the proportion with a vocational qualification 10 percentage points lower, and the proportion with a university qualification 2 percentage points lower. Taken together, a randomly selected native was more than two and a half times as likely to have a post-secondary qualification. In 1996, the difference between Pacific Island immigrants and natives was +16 percentage points for the no qualifications group, -8 percentage points for the vocational qualifications group and -4 percentage points for the university qualifications group. Hence, while there was some convergence in the gap for nonqualified people, the gap in the proportion of immigrants with a university qualification education increased further. Pacific Islanders have also relatively low levels of English proficiency. In 1996, 15 percent of the respondents said that they were not

proficient in English. This was the lowest overall proficiency rate except for immigrants from Northeast Asia (Table 9).

One would expect the labour market outcomes and incomes of Pacific Island immigrants to reflect their low levels of educational qualifications and English proficiency relative to natives and other immigrants. Again, we refer to Table 23 for information on the labour force status of all and recent immigrants in 1981, 1986, and 1996. This table shows that the relative labour market position of Pacific Island immigrants deteriorated gradually. In 1981, Pacific Island immigrants had employment rates about the same as those of natives despite their relatively low education levels: above 82 percent for men and above 50 percent for women. By 1986, employment rates decreased for men (by 2 percentage points) but increased for women (by 3 percentage points). Between 1986 and 1996, the situation changed. [51] The male employment rate of Pacific Island immigrants fell to 64 percent, 14 percentage points below the native employment rate, and the female employment rate fell to 49 percent, 15 percentage points below the rate for native women. Thus, while Pacific Island immigrants did very well in terms of their employment outcomes in 1981 and 1986, relative and absolute outcomes deteriorated during the following 10 years. This trend is reflected in unemployment rates. The unemployed rate of Pacific Island men (women) increased from 9 (8) percent in 1981 to 18 (22) percent in 1996. Note that already in the early 1980s, the unemployment rates were high by the standards of the time, signalling some elements of relative labour market disadvantage.

An analysis of recent immigrants corroborates the previous findings. Already in 1981, the employment rates of recent Pacific Island immigrants were well below the overall Pacific Island full-time rates, by 10 percentage points for both men and. By 1996, only one out of two recent male Pacific Island immigrants was in employment, and unemployment rates of recent immigrants reached 26 percent of the labour force (32 percent for women).

The low education levels and increasingly unsatisfactory labour market outcomes are reflected in low, and falling, relative incomes of Pacific Island immigrants. Their incomes were lower than those of other region-of-origin groups in all years (with the exception of the income of all Asians immigrants in 1996). The income gap between Pacific Islanders and natives increased

[51] One should keep in mind that observations for 1991 are missing. 1991 happened to be a year of severe recession with a sharp drop of employment. It is therefore likely that Pacific Island employment actually fell by more in 1991 and rebounced somewhat in 1996, without reaching its pre-1986 levels.

substantially over time. The average income of a Pacific Island immigrant 28 percent below the average income of natives in 1996, down from 21 percent in 1981 [52]. Conditioning on full-time employment, we find that Pacific Island immigrants did only marginally better. In 1996, the income gap (relative to natives) was 25 percent. The low income of Pacific Island immigrants was reflected in high rates of benefit receipt (Table 25). Pacific Islanders had the highest rate among all groups in both 1986 and 1996 and the second highest rate in 1981.

Figures on incomes of recent immigrants from the Pacific Islands tell much the same story. In 1996, an average recent Pacific Island immigrant had only 41 percent of the income of an average native male. This was a substantial deterioration from 1981, when a recent Pacific Island immigrant's income amounted to 55 percent of the average native income. While incomes tended to increase over time as immigrants' period of stay in New Zealand increased, the numbers show that relative incomes of successive incoming cohorts declined over time. Immigrants in the early 1990's had lower relative incomes and lower relative employment rates than earlier immigrants. Whether this was a genuine cohort effect will be explored in Section 7.7.2.

So far, we have treated the Pacific Islands as a homogeneous region-of-origin, not further distinguishing between the specific countries. The six main Pacific Island nations, in decreasing order of immigrant numbers in 1996, were Western Samoa, Fiji, Tonga, Cook Islands, Niue and Tokelau. Nationals of the last three countries have automatic rights of residence in New Zealand, while a special quota arrangement exists for Samoa.

Table 27 gives labour force status rates, the proportion of immigrants with post-secondary education, proficiency rates, and relative income of all immigrants for selected Pacific Island countries.

Table 27: Labour Force Status, Qualifications, Language Proficiency and Relative Incomes for selected Pacific Island Countries-of-Origin (all immigrants), 1996

	Emp	Lfp	Unemp	Postsec Qual.	Engl. Prof.	Rel. Income	Number of Immigrants
New Zealand	0.712	0.792	0.101	0.341		1	

[52] Relative income differences would be even larger if some other immigrant group was selected as a benchmark since their incomes typically exceed native incomes.

Cook Islands	0.533	0.672	0.208	0.164	0.887	0.729	10004
Fiji	0.651	0.748	0.130	0.353	0.900	0.866	14516
Niue	0.582	0.712	0.183	0.180	0.884	0.762	3813
Samoa	0.550	0.697	0.210	0.186	0.600	0.678	31859
Tokelau	0.419	0.615	0.319	0.193	0.782	0.641	1101
Tonga	0.525	0.679	0.228	0.164	0.654	0.633	10449

Note: English Proficiency is for immigrants with less than 24 months of residence.

According to any of the criteria, Fiji was the country that stood out with above average qualification levels and English proficiency rates of its (mostly Indian) immigrants. As a result participation and employment rates were above and the unemployment rate below the Pacific Island average. The same distinction prevails when relative income is considered. Again, Fijian immigrants did better than other Pacific Island nationalities. The income gap for Fijian immigrants was 13 percentage points, compared to between 24 and 37 percentage points for the other countries. Among those countries, immigrants from Tokelau and Tonga had the lowest incomes in most cases, while immigrants from Niue and the Cook Islands did the best. Overall, qualification levels and English proficiency appears correlated with outcomes. However, there is no evidence that the way a Pacific Island immigrant entered New Zealand (i.e., as a visaed or non-visaed entrant) matters for his or her subsequent labour market outcomes. [53]

7.6.3. Asia

Most Asian born people living in New Zealand in 1996 came recently.[54] For instance, the average duration of residence in New Zealand was about 7 years in 1996 and 59 percent came during the previous 5 years. In terms of total numbers, the Asian born working age population increased from 18 thousand in 1981 and 24 thousand in 1986 to 89 thousand in 1996. The main conclusion of this section is that the recent change in the size of the immigration flow from Asia was associated with a substantial change in the composition of migrants in terms of productive characteristics and labour market outcomes. In a nutshell, migrants arriving before 1986 ("early migrants") shared most of the features of immigrants from regions-of-origin such as Europe or Australia. Migrants arriving in the early 1990's, however, had below average employment and income outcomes, relative to recent immigrants from other regions as well as

[53] Recall that the Cook Islands, Tokelau and Niue have automatic rights of residence, whereas a special quota exist for Western Samoa.

[54] In fact, many came within 24 months before March 1996.

relative to previous recent immigrants from Asia. The differentials are large and it is too early to predict whether they will persist or disappear over time.

We start with a brief evaluation of the hypothesis that early migrants were similar to other migrants, and, in particular, well integrated into the labour market. Table 22 shows that in 1981, 1986 and 1996, Asian working age immigrants, like other immigrants except for Pacific Island immigrants, had a lower proportion without qualifications and a higher proportion of people with university education than natives. In fact, the proportion with university education was the highest among all regional groups in both 1981 and 1996. However, Asian immigrants had a lower proportion with vocational qualifications than natives and other non-Pacific Island migrants.

Asian employment rates (Table 23) were average in both 1981 and 1986. Male participation rates were below those of other groups but this was entirely due to lower participation among young immigrants (aged 15-24), while older immigrants (aged 55-64) had participation rates above those of natives and most other immigrants (Table A39). Similar outcomes are observed for "established" Asian immigrants in 1996. For instance, the employment rates of 25-54 years old Asian men with 6 or more years of residence was 81 percent in 1996, quite similar to the rates of other origin groups. [55] Finally, Asian immigrants were slightly over-represented among the self-employed, as documented in the next table.

[55] Employment rates for non-recent immigrants are not directly tabulated. However, they can be computed from the Tables in the Appendix, including the population frequencies in Tables A6-A8.

Table 28: Self Employment as a Proportion of Total Employment.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
New Zealand	0.136	0.171	0.187	0.136	0.171	0.187
UK & Ireland	0.101	0.151	0.203	0.053	0.104	0.129
Australia	0.107	0.159	0.175	0.073	0.107	0.125
Europe & Nth Am.	0.198	0.265	0.275	0.112	0.181	0.171
Pacific Islands	0.025	0.045	0.084	0.013	0.032	0.075
Asia	0.194	0.223	0.247	0.066	0.082	0.208
Other	0.112	0.165	0.189	0.072	0.102	0.141

The extent of the labour market integration of previous Asian immigrants was also reflected in their relative income position. In 1981 and 1986, Asian incomes were very similar to those of natives. Both male and female full-time workers had incomes above those of natives if living outside of Auckland, and not more than three percent below those of natives if living in Auckland. However, the incomes of *recent* immigrants were up to 25 percent below those of natives at the time.[56] Finally, with average employment rates and incomes for most Asians, except recent ones, one might expect welfare benefit take-up to be average as well. In fact, Asians had lower rates of benefit receipt than any other group in both years. The basic conclusion is that Asians during that period did well.

The labour market experience of recent immigrants from Asia in 1996, i.e., those arriving from 1990 onwards, was different than that of previous Asian migrants in their early post-arrival years, as well as that of other recent immigrants in 1996. Asian immigrants had the lowest employment rates among all recent immigrants (including Pacific Islanders). Only 27 percent of recent female Asian immigrants, and 35 percent of recent male immigrants were in employment in March 1996. This compares to 35 percent of recent female Pacific Island immigrants and 50 percent of recent Pacific Island immigrants, and with employment rates well above 50 percent for other recent female immigrants and above 60 percent for other recent male immigrants. It also constitutes a sharp drop relative to recent Asian immigrants in previous years (Male employment was 66 percent, and female employment 43 percent in 1981). Similarly, 1996 unemployment rates for recent Asian immigrants were the highest among all regions of origin.

[56] At this stage we do not control for the age difference between recent immigrants and natives. Recent immigrants are younger on average and hence would be expected to earn less than natives, even in the absence of any genuine "settlement effect". We obtain the same result, when we crudely control for age in section 7.7.2.

We know that many young Asians are primarily in New Zealand for educational reasons (only 24 percent of Asian young males, and 26 percent of Asian young females, participated in the labour market in 1996). Hence, it is informative to consider results for the 25-54 years old recent immigrants, a group that we expect to be active in the labour market (Tables A39-A42). The substantive conclusions are unaffected. Again, Asian immigrants have the lowest participation rates and the highest unemployment rates among all region-of-origin groups. Fewer than one out of two Asian men in this age group were employed in March 1996, compared to 61 percent of Pacific Islanders and 89 percent of UK and Irish immigrants. The female Asian employment rate for recent immigrants aged 25-54 was 47 percent, 7 percentage points below the Pacific Island rate and 28 percentage points below the rate of British and Irish women.

The low employment rates of recent Asian immigrants in 1996 were reflected in their incomes (Table 24). Recent immigrants from Asia were doing only slightly better than recent immigrants from the Pacific Islands. In 1996, their incomes were less than half those of natives. The situation was more favourable for (the relatively few) Asians in full-time employment. For this group of recent Asian immigrants, incomes were "only" 29 percent below those of natives. As for Pacific Island immigrants, there was a substantial deterioration in the relative income of recent Asian immigrants over time. The relative incomes of Asians arriving in the late 1970's were up to 18 percentage points higher than the relative incomes of those arriving in the early 1990's (10 percent for those in full-time employment).

What could explain the poor labour market outcomes of recent Asian immigrants in 1996? One possibility is that most labour market adjustment problems occur during the first one or two years after arrival and that recent Asians had a higher proportion of "very recent" migrants than other region groups or recent Asian immigrants in previous years. This could partially explain the low employment rates in the 1996 Census. However, the empirical evidence does not support it. For instance, 53 percent of recent Asian immigrants recorded in the 1996 census arrived within the previous 24 months (See Figure 2 and Table A9). But the proportion is exactly the same for non-Asian and non-Pacific Island immigrants, and at 48 percent not much lower for Pacific Islanders. Similarly, 32 percent of recent Asian immigrants arrived within twelve month prior to the 1996 census. Again, Pacific Island immigrants have with 30 percent a similar proportion, while a higher proportion of recent European and North American immigrants (36 percent) had arrived in the previous 12 months. It can be concluded that the arrival distribution of recent Asians in 1996 was not very different from the distribution of

other arrival cohorts, and therefore is unlikely to explain the differences in labour market outcomes.

Demographic variables are another possible contributing factor. Recent immigrants from Asia in 1996 were similar in their parental status to other recent immigrants. There were age differences, though. Asian immigrants were on average younger than most other recent immigrants when they arrived but older than Pacific Island immigrants. For instance, 38 percent of recent Asian immigrants were between 15 and 24 when they arrived (15 percent of UK immigrants, 21 percent of European immigrants, and 52 percent of Pacific Islanders - Table 20). Explaining the deterioration of Asian labour market outcomes by their relatively young age in 1996 seems at odds with the fact that previous immigrant cohorts had actually a larger proportion of young people, 45 percent in 1986 and 52 percent in 1981. But educational participation rates probably have risen over time among young Asians. So age still is a possible contributing factor

Finally, there were differences in the level of education. While substantially more educated than natives, recent Asian immigrants were on average less educated than recent immigrants from other regions except for Pacific Islanders (Table 22). If we refer to non-Asian and non-Pacific Island immigrants temporarily as "other immigrants", we see a clear contrast. 14 percent of Asian, but only 8 percent of other immigrants have no formal qualification. 24 percent of Asians have a university qualification, compared to 30 percent of other immigrants. Only 15 percent of Asians have a vocational qualification, compared to 32 percent of other immigrants, pointing to a particular deficit in non-academic tertiary education. Taken together, other immigrants are almost 60 percent more likely to have a post-secondary qualification than Asian immigrants.

One might argue that a disproportionate fraction of Asians are still in education, and that this should be taken into account. In Table A28, we show the qualifications levels of immigrants who were past their main education age, i.e. those aged 25-54. Although the relative position of recent Asian immigrants improves somewhat, the above conclusions are essentially robust. Again, Asian recent immigrants have a higher proportion with no qualifications and a lower proportion with a vocational qualification than other non-Pacific Island immigrants. The shortfall of formal qualifications relative to other immigrants groups is a recent feature. Previous Asian immigrant cohorts had, for instance, a higher proportion of university qualifications than other immigrants, as defined above (although they always lacked, in relative

terms, vocational training). In 1981 and 1986, the proportions with university qualification were 16 and 19 percent for Asians, and 14 and 17 percent for other immigrants, respectively.

There are two other factors related to education levels that have to be taken into account. The first one is English proficiency. In 1996, 35 percent of recent immigrants from Northeast Asia, stated that they were not able to conduct an everyday conversation in English. The corresponding rates were 16 and 14 percent for recent immigrants from Southeast and South Asia, respectively. Unemployment rates were up to twice as high for those without English proficiency relative to those of English proficient immigrants. The second factor is the above average enrolment of Asian immigrants in full-time study in New Zealand. 34 percent of recent immigrants from Asia were full-time students in the week prior to the 1996 Census. This explains at least partially the low participation rates. However, most Asians involved in full-time study were young (under the age of 24). Hence, education and training activity only partly explains the deteriorating performance of recent mid-aged immigrants.

Finally, a decomposition by country-of-origin reveals that Asian countries are a great deal more diverse than Pacific Island countries. Table 29 provides some support for this view. In 1996, most Asian immigrants came from China (15 thousand), followed by Malaysia (10 thousand), India (10 thousand), Hong Kong (9 thousand) and Korea (9 thousand). Among recent immigrants, Korea, Hong Kong and Taiwan follow China. On one side of the spectrum are relatively successful countries such as the Philippines, Singapore, and India. Between 50 and 60 percent of immigrants from these countries had a post-secondary qualification. Employment rates in 1996 exceeded 60 percent and unemployment rates were below 18 percent. On the other side of the spectrum are countries such as Hong Kong, Korea and Taiwan. Among those nationals, between 30 and 40 percent had a post-school qualification, employment rates were below 30 percent and unemployment reached up to 34 percent (for Korea). Other countries, such as Vietnam, had relatively low qualifications and yet average employment rates.

Table 29: Labour Force Status, Qualifications, Language Proficiency and Relative Incomes for selected Asian Countries-of-Origin (all immigrants), 1996

	Emp	Lfp	Unemp	Postsec Qual.	Engl. Prof.	Rel. Income	Number of Immigrants
Kampuchea	0.507	0.649	0.219	0.142	0.311	0.574	3041
Indonesia	0.487	0.551	0.117	0.470	0.824	0.792	1907
Malaysia	0.495	0.586	0.154	0.440	0.900	0.825	9986
Philippines	0.629	0.745	0.155	0.596	0.978	0.712	5359
Singapore	0.647	0.718	0.099	0.492	0.980	0.910	2601
Thailand	0.357	0.439	0.187	0.244	0.783	0.482	2138
Vietnam	0.482	0.652	0.261	0.163	0.366	0.573	2782
China	0.484	0.652	0.258	0.381	0.472	0.590	14968
Hong Kong	0.328	0.418	0.216	0.276	0.757	0.588	8801
Japan	0.439	0.491	0.106	0.367	0.764	0.728	4973
Korea	0.290	0.413	0.297	0.407	0.514	0.441	8632
Taiwan	0.194	0.296	0.342	0.295	0.594	0.402	7771
India	0.616	0.754	0.183	0.493	0.840	0.941	9606
Sri Lanka	0.558	0.770	0.275	0.662	0.911	1.032	3059

Note: English Proficiency is for immigrants with less than 24 months of residence.

7.6.4. Other Regions

This section presents some results for regions of origin that were not covered so far, namely Australia, non-UK Europe and North America, and other countries. Together, these regions constituted 25 percent of all working age immigrants in 1996, and 28 percent of recent working age immigrants in that year. Countries within these regions of origin that were represented with at least 1000 immigrants of working age in each of the Census years were the Netherlands, Germany, Switzerland, Poland, Yugoslavia, Canada, the USA and South Africa. In 1996, the five largest sending countries were Australia, the Netherlands, USA, South Africa, and Germany. The largest number of recent immigrants came from Australia (6,931), followed by South Africa (3,583) and the USA (3,157).

Two thirds of the countries in this group have an English proficiency rate of 95 percent or above, based on the self-assessment question in the 1996 Census, and most of them share a predominantly European culture. Tables 30 show that the labour market outcomes of these immigrants were similar to those of New Zealanders. In 1996, for instance, the native employment rate was 71 percent. Four countries, the Netherlands, Germany, Switzerland and the USA had employment rates around 70 percent, Canada, Australia and South Africa had employment rates above 73 percent, whereas employment rates for Poland and Yugoslavia

were about 55 percent.[57] Immigrants from this group of countries were well qualified. Except for immigrants from Australia, Poland and Iran, the proportion with post-school qualifications exceeded 50 percent for all countries, and 60 percent for the US, South Africa, Germany and Switzerland

Table 30: Labour Force Status, Qualifications, Language Proficiency and Relative Incomes for selected Other Countries-of-Origin (all immigrants), 1996

	Emp	Lfp	Unemp	Postsec Qual.	Engl. Prof.	Rel. Income	Number of Immigrants
Australia	0.726	0.796	0.088	0.430	0.996	1.068	31535
Germany	0.683	0.756	0.095	0.668	0.992	1.047	5227
Netherlands	0.693	0.737	0.060	0.487	0.991	1.064	15153
Switzerland	0.712	0.769	0.073	0.735	0.957	1.069	1841
Poland	0.554	0.680	0.185	0.493	0.853	0.888	1161
Yugoslavia	0.542	0.775	0.301	0.521	0.837	0.791	3808
Canada	0.740	0.805	0.081	0.571	0.995	1.229	5209
USA	0.706	0.771	0.084	0.609	0.994	1.319	8035
Iran	0.454	0.683	0.336	0.487	0.539	0.698	1071
Iraq	0.219	0.660	0.667	0.529	0.788	0.458	1786
South Africa	0.753	0.830	0.093	0.640	0.995	1.336	7595
Zimbabwe	0.772	0.830	0.069	0.650	1	1.314	1215

Note: English Proficiency is for immigrants with less than 24 months of residence.

7.7. Further Issues

7.7.1. Is Auckland different?

We have seen in Section 2.4. that Auckland attracts an over proportional share of immigrants. Are these immigrants different? In 1996, the average immigrant in Auckland was relatively unskilled (25 percent without qualifications in Auckland compared to 21 percent elsewhere) (Table 31). The proportion of immigrants with post-school qualifications was 6 percent lower in Auckland than elsewhere. Auckland's immigrants were less likely to be employed (62 percent in Auckland compared to 66 percent elsewhere) and more likely to be unemployed (14.3 percent in Auckland compared to 10.9 percent elsewhere).

Table 31: Qualification Levels and Labour Force Status of

[57] In both 1981 and 1986, Yugoslav employment rates were among the highest among all countries of origin. The drop in employment might be explained by the fact that in 1996, 66 percent of all Yugoslav immigrants were recent immigrants.

Immigrants for Auckland and the rest of New Zealand, 1996.

	Highest Qualification				Labour Force Status		
	None	School	Voc.	Uni	LFP	Emp	Unemp
			1. Auckland				
New Zealand	25.0	36.0	27.4	10.0	81.4	74.1	8.9
UK & Ireland	21.1	29.5	36.4	12.2	82.1	77.9	5.0
Australia	15.4	38.2	30.4	14.2	81.7	76.0	7.0
Europe & Nth Am.	10.9	31.5	34.2	22.1	78.3	68.7	12.3
Pacific Islands	45.9	32.4	17.6	3.0	69.8	56.2	19.3
Asia	18.6	38.9	16.3	22.5	56.8	42.9	24.4
Other	14.2	33.2	28.9	22.0	78.4	63.4	19.0
All Immigrants	25.0	33.4	25.6	14.4	72.0	61.7	14.3
			2. Rest of New Zealand				
New Zealand	31.1	34.1	25.6	7.2	78.4	70.2	10.4
UK & Ireland	22.0	27.0	36.0	14.4	78.6	73.1	7.0
Australia	18.4	37.2	28.8	13.2	78.3	70.6	9.7
Europe & Nth Am.	14.1	29.5	34.1	20.7	73.9	66.7	9.6
Pacific Islands	43.2	30.9	19.2	5.3	69.8	56.3	19.4
Asia	18.9	36.8	17.1	23.6	58.3	47.9	17.8
Other	14.1	28.7	28.7	26.2	74.4	63.1	15.1
All Immigrants	21.7	30.5	29.9	16.5	73.5	65.5	10.9

But these differences are, of course, strongly influenced by the immigrant composition since Auckland has a larger share of immigrants with below average characteristics and outcomes. In 1996, 51 percent of immigrants living in Auckland were born either in Asia or the Pacific Islands, compared to 39 percent for the rest of the country. 29 percent of immigrants were born in the UK or Ireland, compared to 36 percent for the rest of the country. As a consequence, one can expect that an "average" immigrant in Auckland compares unfavourably to the average immigrant in the rest of the country.

The next question then is whether additional selection (measured in terms of characteristics or outcomes) takes place *within* specific region of origin groups. For instance, it is possible that, for whatever reasons, Auckland attracts Pacific Islands with above average education levels and above average labour market outcomes. Or it may be the opposite? To answer this question, we decompose in Table 31 the immigrant characteristics and outcomes (in 1996) for Auckland and the rest of New Zealand by region-of-origin. We find that Auckland's immigrants from regions other than Asia and the Pacific Islands had higher qualification levels than immigrants from these regions in the rest of the country, whereas Asian and Pacific Island immigrants had lower qualification levels.

Similarly, Auckland's non-Asian and Pacific Island immigrants had above average employment rates and below average unemployment rates. For Pacific Islanders there was no differential effect, whereas Auckland's Asian immigrants had below average employment and above average unemployment rates. One possible explanation for the Asian differential might be that Auckland's Asian immigrants came, on average, more recently. A more detailed analysis of these issues will become possible once we introduce multivariate models of income and labour force status in the next part of the report.

7.7.2. Post-arrival improvements in labour market outcomes

In this section, we conduct a non-parametric analysis of the rates of income and employment convergence between immigrants and natives as immigrants' duration of stay in New Zealand accumulates. In the previous sections, we found that for most regions of origin, recent immigrants had a disadvantaged labour market position relative to both previous immigrants from that region and natives. The following analysis, based on Tables 32-35, will give some indication as to whether, and how fast, immigrants adjusted to the new social and working environment they encountered after migrating, and whether the speed and size of adjustments differed across the regions of origin. We control for the effect of age composition by computing the average income of immigrants relative to the average income of natives of the same age. [58]

Tables 32-34 contain relative income data for various age groups by period of arrival in New Zealand and Census year for Pacific Island, Asian and other immigrants, respectively. Age is grouped into 8 five-year intervals from 21 to 60 years. Period of arrival is grouped into 10 five-year intervals from 1945 to 1995. People in a particular age group (at a given Census) who arrived during the same period are referred to as an "age/period of arrival cohort", or simply "a cohort". Observation points for recent migrants are printed in Italics.

We will use these tables in order to study if, and by how much, immigrants' relative incomes improved as their time spent in New Zealand increased. The focus on relative incomes disregards improvements in incomes that are common to both immigrants and natives (as both groups age and hence accumulate labour market experience) but rather allows for a measurement of the difference in the returns to experience between immigrants and natives, i.e., of income convergence.

Assume we want to assess income convergence of a recent 36-40 year old immigrant from the Pacific Islands in 1986 over the next 10 years, between 1986 and 1996. In 1986, the average income of that group amounted to 58 percent of the average income of natives of the same age.

[58] An analysis that controls in addition for educational mix and other differences is conducted in Section 8.

Table 32: Income of Pacific Island Immigrants relative to Natives for different Age/Period-of-Arrival cohorts by Census Year

Age in	Period of Arrival								
	91-95	86-90	81-86	76-80	71-75	66-70	61-66	56-60	51-55	45-50
1996:21-25	*0.59*	0.77	0.82	0.80	0.96					
1996:26-30	*0.57*	0.66	0.80	0.82	0.90	0.99				
1986:21-25			*0.65*	0.79	0.84	0.91	1.08			
1996:31-35	*0.58*	0.67	0.69	0.78	0.81	0.97	1.06			
1981:21-25				*0.68*	0.79	0.87	0.91	0.99		
1986:26-30			*0.67*	0.73	0.82	0.90	1.02	1.05		
1996:36-40	*0.53*	0.70	0.64	0.68	0.74	0.84	0.96	1.05		
1981:26-30				*0.70*	0.73	0.82	0.90	0.89	0.95	
1986:31-35			*0.66*	0.71	0.75	0.84	0.94	0.98	0.93	
1996:41-45	*0.55*	0.65	0.64	0.64	0.65	0.75	0.87	0.94	0.87	
1981:31-35				*0.68*	0.72	0.77	0.75	0.95	0.86	0.95
1986:36-40			*0.58*	0.65	0.71	0.76	0.79	0.94	0.96	0.99
1996:46-50	*0.46*	0.61	0.56	0.59	0.61	0.65	0.69	0.81	0.90	1.08
1981:36-40				*0.65*	0.69	0.76	0.74	0.84	0.99	0.92
1986:41-45			*0.60*	0.62	0.70	0.76	0.78	0.92	1.02	1.09
1996:51-55	*0.34*	0.60	0.52	0.55	0.58	0.66	0.68	0.75	1.02	0.91
1981:41-45				*0.54*	0.62	0.69	0.76	0.82	0.75	0.93
1986:46-50			*0.57*	0.63	0.68	0.74	0.79	0.86	0.82	1.00
1996:56-60	*0.39*	0.51	0.55	0.59	0.59	0.64	0.66	0.79	0.77	1.03

The measurement of the change in relative income over the life cycle can be approached in three different ways.

- If we have only a cross-section, we can look at
    a) (same age, different duration) - a 36-40 year old immigrant in 1986 who has spent 10 years in New Zealand, i.e., arrived between 1971 and 1975 at the age of 26-30. In Table 32, this amounts to reading along a row, and we find that the implied relative income improvement is 13 percentage points, from 0.58 to 0.71.
    b) (different age, different duration) - a 46-50 year old immigrant in 1986 who has spent 10 years in New Zealand and thus arrived at the age of 36-40. This is what our recent immigrant might look like in the future. In Table 32, we move down by two boxes (or six rows) and two columns to the right to find a relative income of 0.68.
- If we have more than one time series, we can also see what our 36-40 year old immigrant looks like ten years later. In order to obtain a proper (panel) cohort comparison, we have to read down the column within the same block. The 1996 relative income of our now 46-50 year old immigrant was 0.56, suggesting a deterioration in relative income of -2 percentage points.

In this example, the three methods of measuring relative income growth yielded estimates not only of different magnitude, but even of different sign. In fact, if we browse through Table 32 for Pacific Island immigrants, we typically find that the cross-section estimates suggest relative income improvements whereas the cohort-panel estimates indicate falling relative incomes. (The changes in relative incomes based on the cohort-panel are summarised for convenience in Table 35). Hence, conclusions on Pacific Island income adjustments that are obtained from a cross-section only are likely to be misleading.

This is consistent with our discussion of cohort effects in section 4.1. In particular, the cross-section results in a) and b) were based on the assumption that successive cohorts are "similar". In the first comparison, we have implicitly assumed that the relative income of our currently 36-40 years old individual *had he/she been in New Zealand for the last 10 years* would be the same as the relative income of someone who actually came 10 years ago at the age of 26-30. In the second comparison, we have implicitly assumed that the *future* relative income of our currently 36-40 years old recent immigrant, *after 10 additional years in New Zealand*, will be the same as the cohort-specific relative income of a current 46-50 year old who entered New Zealand at the age of 36-40.

Either assumption is valid only if all individuals move along the same age-income profile, irrespective of age at arrival and arrival period, and the two comparisons are invalidated by cohort effects. For instance, the cross-section income growth for Pacific Island immigrants is likely to be spurious in the sense that those who came earlier had higher relative incomes not because they came earlier and converged but because their particular characteristics gave them an advantage in the labour market relative to later arrivals. [59] The cohort-panel estimates do not rely on comparisons between different cohorts and hence are unaffected by changing characteristics and "quality" of successive cohorts. Rather, they compare the actual change in relative incomes over time. [60] Based on these, we conclude that there was no income convergence to natives among Pacific Islanders between 1981 and 1996. Quite to the contrary, relative incomes diverged. Moreover, relative incomes of recent immigrants dropped for all age groups.

[59] Poot (1993a) comes to a similar conclusion, although he does not find actual income divergence. But his analysis is restricted to 1981 and 1986 data.

[60] A possible bias in the panel-cohort estimates can arise due to out-migration. This was discussed in Section 7.1.4. and will be considered again in Section 8.5.

Table 33: Income of Asian Immigrants relative to Natives for different Age/Period-of-Arrival cohorts by Census Year

Age in	Period of Arrival								
	91-95	86-90	81-86	76-80	71-75	66-70	61-66	56-60	51-55	45-50
1996:21-25	*0.43*	0.58	0.79	0.80	1.02					
1996:26-30	*0.57*	0.75	0.94	1.14	1.25	1.14				
1986:21-25			*0.59*	0.89	0.92	0.96	1.09			
1996:31-35	*0.58*	0.85	0.91	1.14	1.35	1.18	1.15			
1981:21-25				*0.57*	0.81	0.93	1.00	1.04		
1986:26-30			*0.73*	0.97	1.21	1.13	1.13	1.03		
1996:36-40	*0.55*	0.83	0.75	0.94	1.21	1.26	1.11	1.18		
1981:26-30				*0.77*	0.93	1.06	1.02	1.07	1.20	
1986:31-35			*0.77*	0.89	1.17	1.21	1.28	1.19	1.35	
1996:41-45	*0.53*	0.75	0.71	0.87	1.10	1.18	1.26	1.21	1.33	
1981:31-35				*0.79*	0.99	1.06	1.10	1.08	1.08	1.09
1986:36-40			*0.82*	0.92	1.10	1.14	1.18	1.16	1.15	1.16
1996:46-50	*0.54*	0.67	0.68	0.93	1.09	1.08	1.06	1.09	1.07	1.29
1981:36-40				*0.92*	1.27	1.08	0.87	1.00	1.07	1.17
1986:41-45			*0.94*	1.03	1.29	1.07	0.88	1.10	1.15	1.35
1996:51-55	*0.64*	0.74	0.73	0.97	1.34	1.05	0.84	0.96	1.11	1.31
1981:41-45				*0.83*	1.20	1.14	0.88	0.97	1.17	1.08
1986:46-50			*1.14*	1.01	1.43	1.17	1.10	1.12	1.20	1.20
1996:56-60	*0.53*	0.72	0.91	1.11	1.56	1.08	0.91	1.00	1.21	1.11

Table 33 gives the results for Asian immigrants. There was strong convergence and "overtaking" among Asian immigrants. Relative incomes increased by more than 10 percentage points on average (for cohorts that were observed both in 1981 and 1996, see also Table 35) and all but the must recent arrival cohort in 1981 had overtaken native incomes by 1996. The figures confirm that relative income growth was largest immediately after entry and then decreased. Asians arriving between 1976 and 1980 had on average an increase in relative incomes of almost 20 percentage points over the next 15 years. Asians arriving 10 years earlier, between 1966 and 1970, experienced an increase in relative incomes of "only" 8 percentage points between 1981 and 1996.

The figures in Table 34 show that the relative incomes of other immigrants (including immigrants from the UK and Ireland, Australia, Europe and North America) increased as well over the 15 year period, although with 7 percent on average at a smaller rate than those of Asians. But notice that these immigrants had much higher relative incomes than Asians and Pacific Islanders already on entry to New Zealand.

Table 34: Income of Other Immigrants relative to Natives for different Age/Period-of-Arrival cohorts by Census Year

Age in	Period of Arrival								
	91-95	86-90	81-86	76-80	71-75	66-70	61-66	56-60	51-55	45-50
1996:21-25	*0.96*	0.98	0.99	0.96	1.10					
1996:26-30	*1.11*	1.01	1.22	1.16	1.13	1.17				
1986:21-25			*0.94*	0.97	1.06	1.04	1.11			
1996:31-35	*1.12*	1.15	0.98	1.12	1.06	1.08	1.12			
1981:21-25				*0.93*	0.98	0.97	1.07	1.06		
1986:26-30			*1.04*	1.03	1.06	1.08	1.07	1.13		
1996:36-40	*1.08*	1.18	1.06	0.93	1.09	1.11	1.08	1.11		
1981:26-30				*1.02*	0.94	0.96	1.04	1.02	1.09	
1986:31-35			*1.10*	1.08	0.99	1.03	1.07	1.12	1.13	
1996:41-45	*1.09*	1.21	1.10	1.13	0.97	1.02	1.04	1.12	1.14	
1981:31-35				*1.01*	0.94	0.93	0.98	1.02	1.03	1.18
1986:36-40			*1.14*	1.18	1.03	1.00	1.09	1.15	1.12	1.17
1996:46-50	*1.16*	1.18	1.09	1.18	1.04	0.98	0.99	1.02	1.12	1.10
1981:36-40				*0.99*	1.00	1.00	0.97	1.09	1.11	1.19
1986:41-45			*1.17*	1.15	1.04	1.09	1.04	1.08	1.13	1.22
1996:51-55	*0.96*	1.26	1.26	1.17	1.09	1.07	0.99	1.02	1.24	1.18
1981:41-45				*1.07*	0.96	0.98	0.95	0.98	1.01	0.98
1986:46-50			*1.18*	1.17	1.13	1.13	1.10	1.08	1.14	1.14
1996:56-60	*1.11*	1.28	1.25	1.19	1.04	1.05	1.08	1.00	1.13	1.17

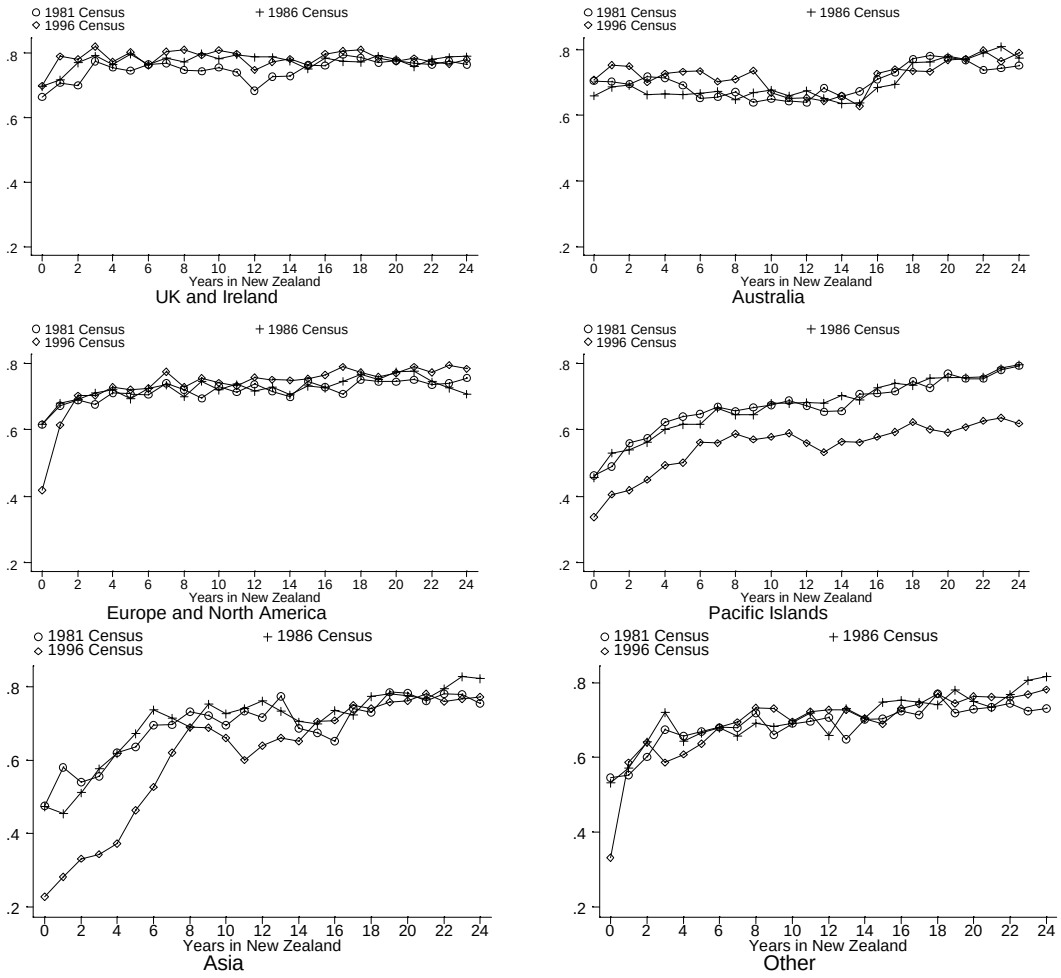
The figures can also be used to study the effect of age at arrival on relative income growth. The right most figures in many rows of Tables 32-34 include people who arrived in New Zealand as young children. Much of their adjustment to New Zealand would be likely to occur before they enter the labour market, and might be more rapid than the adjustment of those who arrived as adults. A direct analysis of the effect of age-at-arrival on adjustment profiles is possible by moving down columns. For a given period of arrival, a higher age in 1981 indicates that immigrants were older when they arrived. Hence, age at arrival increases as one moves down a column. From Table 35, we see that age at arrival had no clear-cut effect on relative income growth, except for Asian immigrants whose average relative income growth was larger for immigrants who arrived at a younger age. This differs from the finding of Borjas (1987) for the US where migrants who arrived at a younger age experienced less relative income growth.

Table 35: Panel based Relative Income Growth 1981-1996 for selected cohorts, Pacific Island, Asian, and Other immigrants (in percent)

	Period of Arrival						
	76-80	71-75	66-70	61-66	56-60	51-55	45-50
Age in	1. Pacific Island Immigrants						
1981:21-25	0	-5	-3	5	6		
1981:26-30	-6	-8	-7	-3	5	-8	
1981:31-35	-9	-11	-12	-6	-6	4	13
1981:36-40	-10	-11	-10	-6	-9	3	-1
1981:41-45	5	-3	-5	-10	-3	2	10
	2. Asian Immigrants						
1981:21-25	37	40	33	11	14		
1981:26-30	10	17	12	24	14	13	
1981:31-35	14	10	2	-4	1	-1	20
1981:36-40	5	7	-3	-3	-4	4	14
1981:41-45	28	36	-6	3	3	4	3
	3. Other Immigrants						
1981:21-25	0	11	14	1	5		
1981:26-30	11	3	6	0	10	4	
1981:31-35	17	10	5	1	0	9	-8
1981:36-40	18	9	7	2	-7	13	-1
1981:41-45	12	8	7	13	2	12	19

We next consider changes in relative employment (calculated as the difference between immigrant and native employment rates). Table A48 documents that employment adjustments were similar to those of relative incomes during the 1981-1996 period. As immigrants' time spent in New Zealand increased, relative employment rates diverged for Pacific Island immigrants. The employment rates for Asian and other immigrants increased relative to those of natives.

Figure 4: Employment Rates by Years in New Zealand

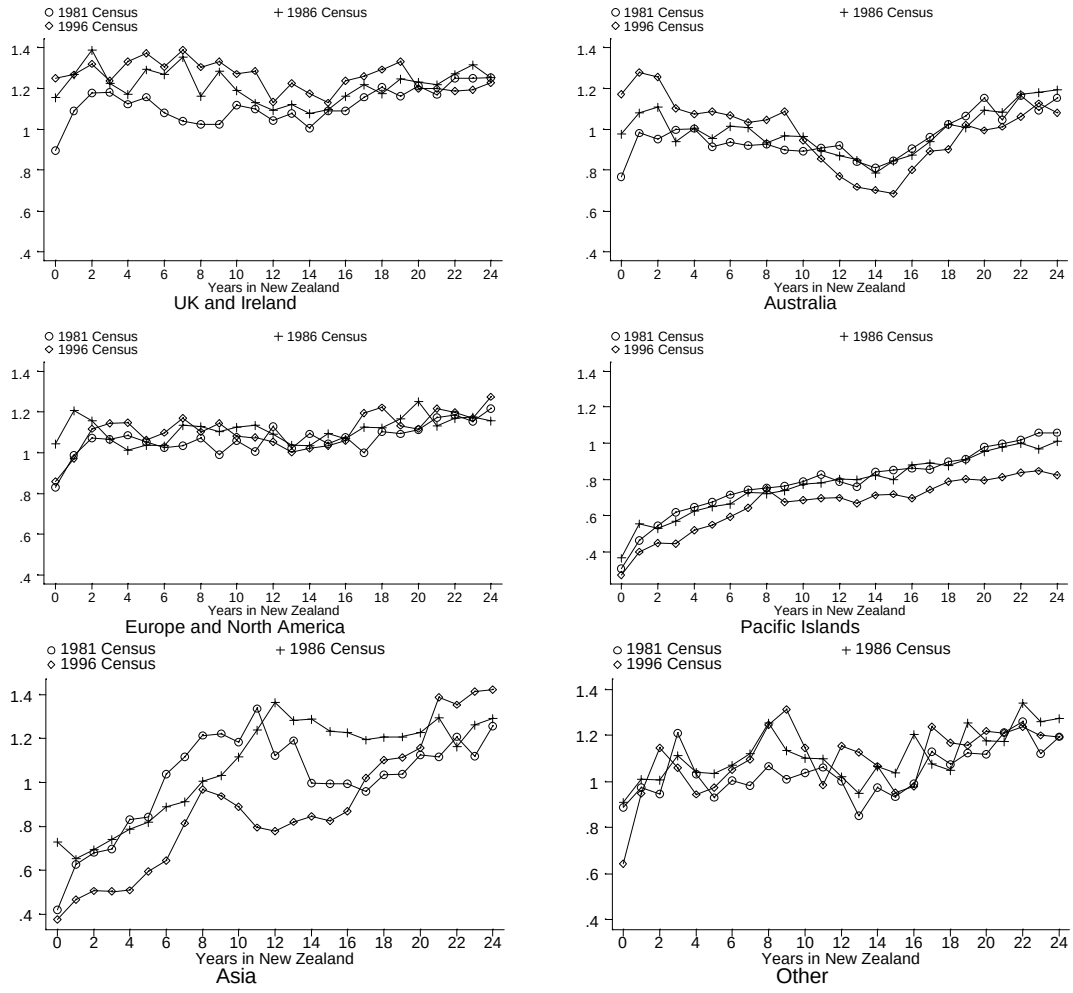


Similar conclusions with regard the effect of years spent in New Zealand on relative employment and income are obtained from Figures 4 - 7. Figure 4 displays, for the six region-of-origin groups and the three Census years, the average employment rate among immigrants with the same duration of residence, i.e. immigrants who arrived in the same year in New Zealand. Figure 5 plots incomes of immigrants relative to the average native income by years in New Zealand, Census year, and region-of-origin. These graphs are not age controlled.

Except for UK, Irish and Australian immigrants, employment rates tended to increase with increased years since arrival. For Pacific Islanders, for instance, the employment rates of immigrants with 24 years of residence exceeded those of immigrants who just arrived (0 years of residence) by about 30 percentage points in any of the years. Similar convergence rates are observed for relative incomes (Figure 5). The income improvements of up to 100 percentage points over the 24 years, or 4.2 percentage points per year, were particularly large for Asian

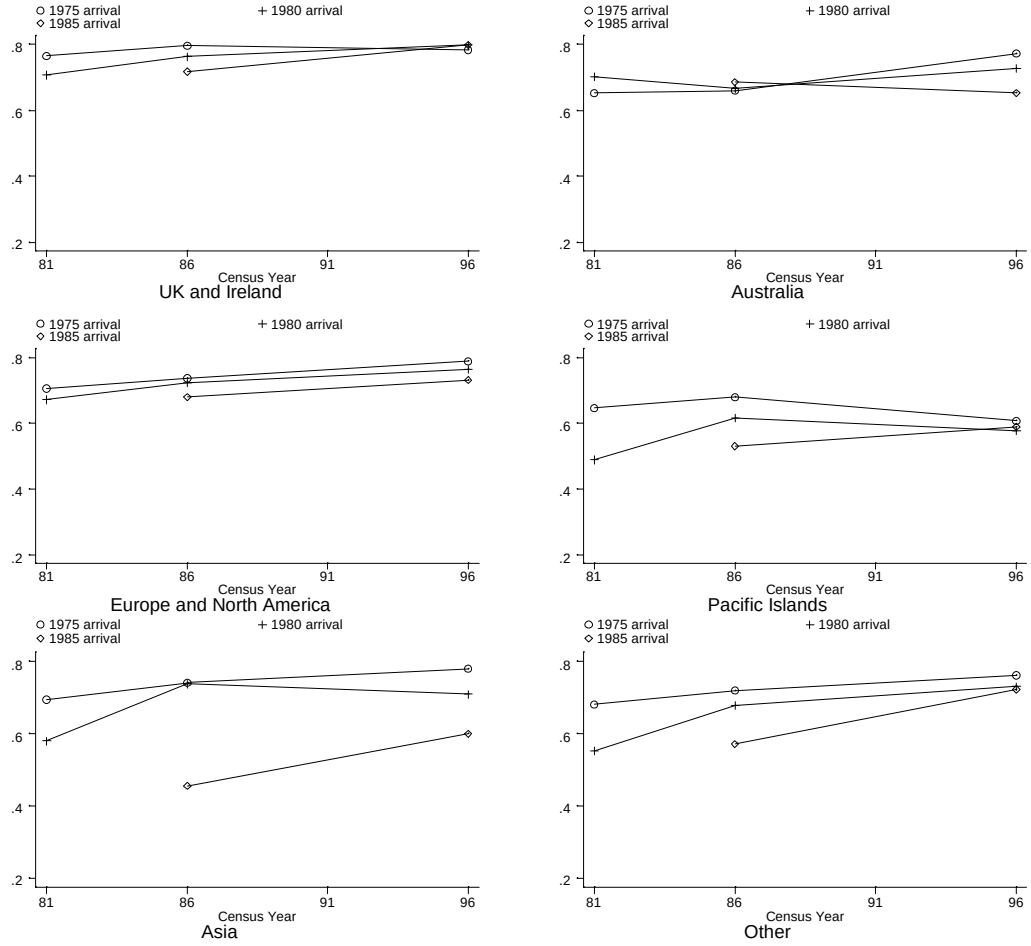
immigrants. But for reasons outlined above, these figures overestimate the employment and income growth rates that are experienced by a typical immigrant.

Figure 5: Relative Income by Years in New Zealand



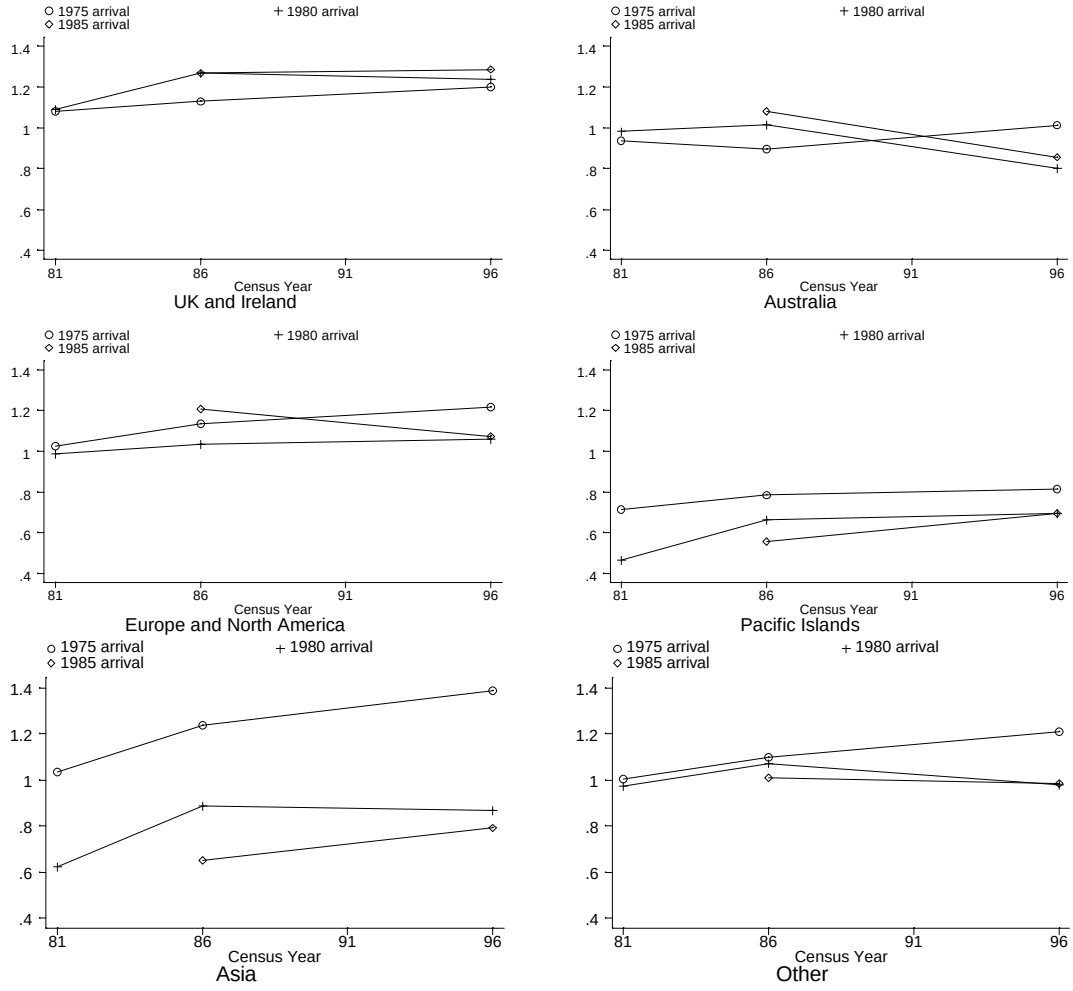
This becomes apparent in Figures 6 and 7, where we follow a particular arrival cohort over three consecutive Census years. The selected cohorts are 1975 arrivals, 1980 arrivals and 1985 arrivals. The last group of immigrants has not yet arrived in the 1981 Census, and hence there are only two observation points. The other two cohorts are observed at three points in time. Following the actual experience of specific cohorts over the fifteen years produces somewhat lower, though for Asian and Other immigrants still significant, growth rates.

Figure 6. Employment Rates for Arrival Years 1975, 1980, 1985



For instance, the employment rate of Asians arriving in 1980 increased by more than 10 percentage points over the next 5 years, as did the employment rate of immigrants arriving in 1985 over the next ten years. Slightly smaller increases were observed for Pacific Islanders after arrival. However, their employment rates actually fell between 1986 and 1996 for all but the most recent cohort. Similar patterns were observed for income.

Figure 7. Relative Income for Arrival Years 1975, 1980, 1985



The relatively fast assimilation rates of Asian immigrants do not imply that there is no reason for concern. In fact, Figure 7 shows the declining relative income of successive Asian immigration cohorts, comparing points where both cohorts had spent the same number of years in New Zealand. The 1986 relative income of the 1980 cohort is below the 1981 income of the 1975 cohort; the 1996 relative income of the 1985 cohort is below the 1986 relative income of the 1975 cohort; and the entry income in 1986 is below the entry income in 1981.

We conclude that while Asian immigrants had high rates of relative income growth over the period, the entry disadvantage increased over time, which makes it less likely that more recent Asian immigrants will reach the relative income levels of their predecessors, unless their relative income growth substantially exceeds the growth of previous cohorts.

8. Empirical Models and Results

8.1. Introduction

Before presenting the results of our econometric analysis, we introduce the econometric methods in some detail. We decided against relegating this part to an appendix since the question of the "right" methodology is far from settled and we feel that an accessible account of the advantages and limitations of the possible approaches is helpful for a valid interpretation of the regression results. The formally less inclined reader might skip this section.

8.2. Adjusted income differentials

In this part we describe how to conduct a cohort analysis of immigrants' relative incomes. This analysis answers the question of how much of the difference in incomes between immigrants and natives remains after we control for hours of work, gender, and productive characteristics (level of highest qualification and age, a proxy for potential labour market experience). An alternative way to pose the same question is to ask how much of the differences in incomes can be explained by differences in "endowments" and by differences in economic activity (hours worked), and how much is left unexplained.

As was the case for the descriptive analysis, the regression analysis is cohort based. A cohort comprises a group of immigrants who arrived during the same period of time. We use the following eight periods: pre1960, 1961-65, 1966-70, 1971-75, 1976-80, 1981-85, 1986-90, 1991-95.[61] In a cross-section-based analysis, earlier cohorts typically are "better" (relative to natives) than later cohorts because they had time to adjust to New Zealand labour market conditions. An additional reason for differences in the relative income position between

[61] In order to allocate individual migrants to cohorts, we compute the year of arrival as

Census Year - Years since Migration -1.

To see that the adjustment by -1 is necessary, note that individuals with YSM=0 are in the country for 0-11 months while the Census is usually held at the end of February or beginning of March. Hence (assuming equi-distribution of arrivals over the year) most migrants with YSM=0 arrived in New Zealand actually in the year prior to the Census.

successive cohorts might be changes in cohort quality. As long as the changing cohort quality is due to observable factors (such as changes in the proportion of immigrants with university degrees), the regression analysis picks this up. To deal with changes in unobservable factors, one needs repeated cross-sections in order to disentangled adjustment and cohort effects and identify the genuine amount of income convergence that took place.

The advantage of the regression approach is that it allows us to compare the incomes of immigrants with those of "like" natives, e.g., natives of same education, age and gender. Otherwise, it might be the case that the earnings of an immigrant cohort are below natives simply because immigrants are younger or less educated, for instance. In the descriptive analysis, a primitive control for age was introduced by looking at the relative incomes of migrants (and natives) of a certain age group.[62] While this approach is flexible and does not impose a tight parametric relationship between income and age, the flexibility comes at the price of complexity that makes it difficult to interpret results. Also, the approach becomes impractical if a variety of other factors, such as hours of work and education, are to be considered as well.

To implement the regression framework, we approximate the percentage gap in income by the log income differences.[63] Technically, the *unadjusted* wage differentials (together with their estimated standard errors) are obtained by regressing logarithmic income (y) on a constant and a full set of cohort indicator variables (C).[64] The *adjusted* wage differentials are obtained by regressing logarithmic income on a constant, a full set of cohort indicator variables *plus* hours, a male indicator, highest qualification level (indicators for school, vocational and university qualifications), age and age squared (X).

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[62] Another approach, frequently used in demography, is to age-standardise by computing the weighted sum of the age-specific average incomes of immigrants where the weights are the population shares of the respective age groups in a *standard* population (such as natives). This method can be extended to standardise by age *and* education, or any other characteristic.

[63] In instances where changes are large, the log approximation becomes somewhat imprecise. One can then use the formula e^b-1 (where b is the log differential) in order to obtain the correct percentage change.

[64] An alternative method not adopted by us is to include an indicator variable for immigrants and to drop one of the cohort dummies. Coefficients on the resulting remaining cohort dummies then measure the change in relative incomes over the base cohort.

$$(1)\quad \log(y_{it}) = X_{it}\beta_t + \sum_{k=1}^{8} \eta_k C_k + \varepsilon_{it}$$

Hence, the regressions control for immigrant/native differences in endowments and economic activity. We restrict the analysis to individuals who were employed (either full-time or part-time) at Census day. In this context, the coefficients on age and education can be interpreted as "returns", while η_k measures the relative difference between the incomes of immigrants of cohort k and natives that cannot be explained by differences in endowments or economic activity.

The following features of our specification deserve further comments. Firstly, the effect of qualifications is modelled as a step function. An alternative approach would postulate that the returns to schooling are proportional to the amount of investment it takes to acquire the qualification which, in turn, can be approximated under some simplifying assumptions by the number of years it typically takes to obtain the qualification. We do not impose this proportionality assumption but rather allow for "extra" returns of certain qualifications. While we could follow the same reasoning when considering the effect of age, we adopt here a more parsimonious parameterisation that allows for a non-linear relationship between age and income along a second-degree polynomial. For simplicity, we also pool men and women together at this stage and do only allow the intercept to vary between the two groups.

Secondly, separate regressions are run for each of the three Census cross-sections. [65] Thereby, coefficients are allowed to vary over time. For instance, the return to a university education is allowed to change over the fifteen-year period. At the same time, the coefficients are restricted to be the same for natives and immigrants. The rationale behind this restriction is that we are at this stage specifically interested in determining the part of the overall (i.e.: unadjusted) income differential that *cannot* be explained by differences in endowments (i.e., the adjusted wage differential). We are not interested in finding out the channels through which apparently similar endowment points might lead to different outcomes, the two possibilities being either a difference in the intercept, or cohort and time specific differences in the way that the

[65] This approach has been used in Borjas (1985), LaLonde and Topel (1991) and Baker and Benjamin (1994), among others.

endowments X are evaluated by the labour market (for instance, a university qualification might be less rewarded for immigrants than for natives if transferability is imperfect).[66]

Once we have established the adjusted cohort and Census specific log income differentials, we use those to provide answers to the two basic questions: Has there been any change in the "quality" of incoming cohorts? And how does the relative position of an arrival cohort improve as the duration of residence in New Zealand accumulates.

To answer the first question, one can directly compare the adjusted income differentials of recent immigrants, that is, 1976-80 arrivals in 1981, 1981-1985 arrivals in 1986, and 1991-1995 arrivals in 1996. All of these immigrants have spent roughly the same amount of time in New Zealand on Census night and, ceteris paribus, might be expected to be in a similar position relative to natives.[67] To answer the second question, we follow a given cohort over time.[68] All pre-1980 cohorts are observed in three consecutive census years. The returns to five years of residence in New Zealand are approximately equal to the difference between the log income differential in 1981 and the log income differential in 1986. The returns to fifteen years of residence are approximately equal to the differences in the 1981 and 1996 log income differentials. In this type of analysis, cohorts are captured during different stages of their career. Some have already spent a considerable amount of time in New Zealand when they are first observed, while others just arrived. Naturally, we expect a larger growth in relative income for the more recent arrivals.

In order to gain some further insights into the relative incomes of immigrants, we extend the analysis by allowing for differential cohort effects between English speaking migrants and non-English speaking migrants, and finally between migrants from the various regions-of-origin. These more detailed regressions restrict the returns to endowments to be the same for all region-of-origin groups of immigrants as well as natives (although, as before, they are allowed

[66] LaLonde and Topel (1991) provide an excercise in decomposing the adjusted income differential.

[67] As previously mentioned, a changing relative position of recent immigrants in this set-up might stem either from the fact that some unobservable characteristics changed, or from the fact that the returns to some observable characteristics changed. If, for instance, the return of an endowment relatively abundant among natives increases, the relative position of immigrants will decline even if their observable or unobservable characteristics have not changed.

[68] Note that we control for age and hence allow natives and immigrants to grow older simultaneously as time elapses.

to vary across the three Census years). Formally, this is achieved by regressing logarithmic income on the control variables (hours, male, endowments) and on a full set of interactions between the cohort dummies and indicator variables for English and non-English speakers, or a full set of interactions between the cohort dummies and region-of-origin indicator variables.

8.3. Results

The following results were obtained from regressions using all employed individuals aged 15-64 for whom income data are available. Table 37 shows the unadjusted and adjusted differentials for all immigrants controlling for include weekly hours of work, gender, a quadratic in age, and highest qualification (school, vocational or university qualification). Table 38 gives separate differentials by English speaking status, and Table 39 by region-of-origin. We start in Table 36 with a consideration of the estimated coefficients for the control variables.

Table 36: Log-Income Regressions, Natives and Immigrants .

	1981		1986		1996	
	(1)	(2)	(1)	(2)	(1)	(2)
Hours	.0214	.0215	.0170	.0170	.0172	.0170
Male	.3504	.3508	.3954	.3971	.2669	.2681
School Qual.	.1470	.1494	.1389	.1353	.1759	.1649
Vocational Qual.	.2819	.2795	.2684	.2599	.2886	.2623
University Qual.	.5126	.5175	.5554	.5495	.5858	.5762
Age	.0785	.0788	.0631	.0633	.1010	.1026
Age squared/100	-.0829	-.0833	-.0665	-.0670	-.1111	-.1131
Cohort dummies	Yes	No	Yes	No	Yes	No
Cohort * Region	No	Yes	No	Yes	No	Yes
F-test	19.2		27.3		103.8	
R-squared	0.332	0.334	0.321	0.324	0.367	0.379
Observations	159636		184777		214844	

For each Census year, two specifications were estimated, model (1) with control variables and cohort dummies, and model (2) with control variables and region-specific cohort dummies. Standard errors are omitted to save space. The largest standard error on any coefficient was

0.006. Hence, all effects are statistically significant at conventional levels of significance.[69] A F-test of model (1) against model (2) can be based on the statistic

$$F = \frac{(R2\_2 - R2\_1)/J}{(1 - R2\_2)/(n-k)}$$

where J is the number of restrictions (with 8 cohort dummies and 6 regions there are 40 restrictions), and (n-k) are the degrees of freedom of model (2). The F-tests rejects model (1) in all three years. Since the statistic increases from 19.2 in 1981 to 103.8 in 1996 there is some indication of increased heterogeneity. We further conducted tests for constancy of cohort dummies over time. We rejected this hypothesis both for the model with cohort dummies only ($F_{11,\infty} = 20.6$) and for the model with cohort and region interactions ($F_{66,\infty} = 7.7$).

The estimated coefficients are very similar in models (1) and (2). There were, however, significant changes over time. The male wage premium decreased from 35 percent in 1981 to 27 percent in 1996. Returns to qualifications were higher in 1996 than in 1981. For instance, the 1981 incomes of university graduates exceeded those of otherwise similar unqualified workers by about 51 percent. In 1996, the university income premium has increased to 59 percent. The coefficients reveal a typical life-cycle income pattern, with decreasing increases in income as workers age. The maximum income level was reached at the age of 48 years in 1981, and at the age of 45 years in 1996. The predicted income differences between two otherwise similar workers aged 20 and 40, respectively, were 58 percent in 1981 and 69 percent in 1996. Hence, the returns to experience increased as well. Age and education emerge as quantitatively the most important determinants of income. As Table 37 shows, adjusting for these factors has a substantial effect on the comparison between the income of immigrants and natives.

For example, the unadjusted income differential of recent immigrants in 1996 was -19.6 percent whereas the adjusted differential was -30.5 percent. In other words, the adjusted differential exceeded the actual differential (in absolute value), meaning that immigrants should have done better (by about 11 percent) relative to natives rather than worse, based on their endowments and the prevailing market valuation of these endowments (under the assumption that the valuation was the same for immigrants and natives).

[69] To test for statistically significant changes in coefficients over time, we compare the estimated difference to an upper bound for twice its standard error $2\sqrt{(0.006^2 + 0.006^2)} = 0.016$. If it exceeds this upper bound, we certainly can reject the hypothesis of no change.

Table 37: Unadjusted and Adjusted Immigrant/Native Differentials in Log Annual Income, by Immigrant Cohort and Census Year.

	1981		1986		1996	
Cohort	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
Pre-1960	.199	-.021	.216	.012	.237	.041
1961-65	.026	-.022	.128	.008	.187	.002
1966-70	-.013	-.057	.016	-.038	.177	-.005
1971-75	-.023	-.052	-.030	-.071	.111	-.012
1976-80	-.187	-.207	-.064	-.108	-.077	-.104
1981-85			-.094	-.153	-.127	-.137
1986-90					-.128	-.184
1991-95					-.196	-.305

A general result of Table 37 is that the adjusted income differentials were below the unadjusted ones (smaller if positive, and larger in absolute value if negative). This reflects the fact that New Zealand's immigrants always had relatively high levels of formal qualifications. The difference between adjusted and unadjusted differentials tended to be larger for earlier cohorts. One contributing factor is that earlier immigrant cohorts comprise older immigrants, on average. Much of their apparently superior incomes (relative to an average native and relative to later immigrant cohorts) therefore disappear once we control for age. [70]

Adjusting the income differentials for differences in endowments affects the quantitative but not the qualitative conclusions. As in the previous sections, the following three points can be made.

1. The relative position of recent immigrants decreased over time (from -21 percent in 1981 to - 31 percent in 1996).
2. The cross sectional income growth (reading down a column) suggests that parity with natives is reached after 20 - 30 years.
3. The panel comparisons (reading along a row) yield lower 15-year rates of income convergence than cross-section comparisons.

In the following table, the results are disaggregated by English speaking background. We define as migrants with English speaking background (ESB) those migrants who were born in a

[70]For this reason, it is misleading to compare unadjusted differentials for a given cohort over the three Census years, since the comparison confounds the effect of cohort ageing (relative to the average native) with the effect of genuine relative income growth. As a consequence, relative improvements in unadjusted differentials typically exceed relative improvements in adjusted differentials.

country whose immigrants to New Zealand on average had a high level of English proficiency (namely, if at least 95 percent of immigrants from that country declared themselves able to communicate in English in the 1996 Census. See Table A30). Migrants with non-English speaking background are referred to as NESB migrants.

Table 38: Unadjusted and Adjusted Immigrant/Native Differentials in Log Annual Income, by Immigrant Cohort, English Proficiency and Census Year.

	1981		1986		1996	
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
English speaking background (ESB)						
Pre-1960	.213	-.007	.222	.019	.252	.052
1961-65	.044	-.010	.166	.029	.208	.010
1966-70	-.014	-.067	.039	-.021	.212	.023
1971-75	.019	-.050	.002	-.053	.153	.017
1976-80	-.079	-.182	.056	-.073	-.055	-.070
1981-85			.022	-.115	-.092	-.102
1986-90					.055	-.081
1991-95					.099	-.089
Non-English speaking background (NESB)						
Pre-1960	.173	-.044	.204	.006	.214	.033
1961-65	-.002	-.043	.068	-.022	.152	-.005
1966-70	-.012	-.046	-.011	-.059	.131	-.039
1971-75	-.069	-.054	-.067	-.092	.056	-.052
1976-80	-.313	-.236	-.155	-.136	-.099	-.139
1981-85			-.208	-.189	-.157	-.168
1986-90					-.207	-.231
1991-95					-.443	-.489

The differences between the two groups of immigrants are large, even after we control for the highest level of qualification, age, hours of work, and gender. To give one example, the 1996 relative income of the 81-85 cohort was 90 percent for ESB and 83 percent for NESB. Thus, the estimated 1996 income difference between otherwise similar English and Non English speaking migrants of this cohort was approximately 7 percent. The cohort effects are estimated with standard errors of about 0.8 percent. Hence, the difference is statistically significant. For almost all cohorts and years, English speaking immigrants had higher adjusted relative incomes than non-English speaking immigrants, and the differences were statistically significant.

One might expect to find evidence for income convergence between ESB migrants and NESB migrants, as relative incomes of NESB migrants grow faster with period of residence (English proficiency increases and immigrants adjust any other attributes captured by the language

background classification, such as cultural values) than relative incomes of ESB migrants (who cannot improve their position by learning English). However, in the past this was not the case. If anything, the relative position of ESB migrants tended to improve faster than the relative position of NESB migrants and, as a consequence, the differences between ESB migrants and NESB migrants were permanent and increasing. For instance, the 1971-75 ESB migrant cohort improved by 7 percentage points between 1981 and 1996, whereas 1971-75 NESB migrant cohort had no change in the adjusted differential over the fifteen year period.

Another source of increasing income disparity between ESB and NESB migrants was the income trend of recent immigrants. While ESB migrants came with a decreasing disadvantage (-9 percent in 1996, down from -18 percent in 1981), NESB migrants came with an increasing income disadvantage (-49 percent in 1996, up from -24 percent in 1981). Thus, the relative income gap between recent ESB and NESB immigrants rose from only 5 percentage points in 1981 to 40 percentage points in 1996. This trend might signify an increasing importance of English speaking background, caused possibly by technological change or other factors, which puts NESB migrants at an increasing relative disadvantage.[71]

Table 39 shows the adjusted income differentials by region-or-origin. It does not come as a surprise that the trends in adjusted wage differentials of UK, Irish and Australian immigrants were very similar to those of English speaking migrants at large since these three countries constituted the major fraction of ESB migrants. UK & Irish immigrants in 1996 had higher incomes than similar natives for all cohorts. The improvement in the quality of recent immigrants was most pronounced for Australian immigrants (-1 percent in 1996, up from -18 percent in 1981).

In the following, we focus our discussion on the results for Pacific Island and Asian immigrants, both predominantly non-English speaking regions. Table 39 shows that the low relative incomes of Pacific Island immigrants can be partially explained by their low endowments (most importantly the relatively low proportion with formal qualifications). Accounting for different endowments cuts the income differential of recent Pacific Island immigrants by almost 40 percent in both 1981 and 1996, and by even more for some earlier cohorts. The Asian situation is different; the Asian income differential, like that of all other

[71] The improvement in the relative position of recent ESB in 1996 even meant that they looked "better" than previous ESB immigrants in that same year.

non-Pacific Island immigrants, widens once differences in endowments are accounted for. It is interesting to note that the adjusted income differentials were of the same magnitude for all cohorts of Europe & Nth American, Pacific Island, and Asian immigrants in both 1981 and 1986. In 1981, recent immigrants' incomes were between 23 and 27 percent below those of comparable natives, in 1986 the range was 18 to 20 percent below. Differences tended to be small for the pre-1970 cohorts.

Table 39: Unadjusted and Adjusted Immigrant/Native Differentials In Log Annual Income, by Immigrant Cohort, Region-of-Origin and Census Year.

	1981		1986		1996	
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
1. UK & Ireland						
Pre-1960	.235	.035	.260	.072	.283	.070
1961-65	.110	.032	.221	.077	.225	.029
1966-70	.061	-.011	.152	.053	.224	.039
1971-75	.051	-.009	.082	.019	.219	.066
1976-80	.058	-.074	.167	.029	.144	.012
1981-85			.132	-.010	.093	.023
1986-90					.239	.071
1991-95					.224	.009
2. Australia						
Pre-1960	.176	.015	.192	.044	.246	.076
1961-65	-.066	-.044	.087	.004	.170	.021
1966-70	-.126	-.097	-.109	-.074	.185	.039
1971-75	-.012	-.039	-.149	-.129	.070	.004
1976-80	-.148	-.175	-.002	-.058	-.229	-.092
1981-85			-.002	-.069	-.316	-.113
1986-90					-.022	-.041
1991-95					.096	-.014

3. Europe & Nth America						
Pre-1960	.215	-.057	.219	-.021	.230	.032
1961-65	.075	-.066	.159	-.050	.200	-.030
1966-70	.031	-.126	.078	-.080	.226	-.035
1971-75	.031	-.127	.054	-.105	.158	-.063
1976-80	-.086	-.262	.036	-.162	.008	-.112
1981-85			.024	-.178	-.028	-.149
1986-90					.057	-.143
1991-95					.033	-.186
4. Pacific Islands						
Pre-1960	.091	-.013	.106	.006	.118	.021
1961-65	-.058	-.033	-.004	-.028	.074	-.026
1966-70	-.086	-.029	-.093	-.066	.039	-.062
1971-75	-.147	-.046	-.151	-.104	-.037	-.075
1976-80	-.420	-.233	-.248	-.131	-.147	-.108
1981-85			-.375	-.197	-.206	-.132
1986-90					-.283	-.192
1991-95					-.675	-.444
5. Asia						
Pre-1960	.215	-.090	.272	-.005	.273	.019
1961-65	.005	-.065	.178	.032	.214	-.005
1966-70	.144	-.063	.145	-.053	.310	-.005
1971-75	.084	-.084	.168	-.061	.245	-.021
1976-80	-.302	-.270	-.067	-.140	-.094	-.196
1981-85			-.116	-.199	-.133	-.228
1986-90					-.163	-.277
1991-95					-.463	-.566
6. Other countries						
Pre-1960	.209	-.000	.238	.026	.274	.019
1961-65	.046	.015	.193	.055	.300	.043
1966-70	.009	-.034	.076	.020	.227	.020
1971-75	.011	-.054	.015	-.048	.179	.037
1976-80	.058	-.089	.075	-.078	.016	-.056
1981-85			.051	-.157	-.033	-.094
1986-90					.040	-.092
1991-95					-.027	-.216

The change in 1996 can be characterised as follows: while Europe & Nth American immigrants experienced a similar relative income position in 1996 as they did in 1986 (i.e., recent 1996 immigrants had a disadvantage of 19 percent, which decreased to 6 percent for cohorts with at least 20 years of residence), this was not the case for Pacific Island and Asian immigrants. The adjusted income differentials of Pacific Island and Asian immigrants increased to -44 and -57 percent, respectively. While the Asian decrease in 1996 relative incomes was severe for recent immigrants, it did not affect all cohorts. For instance, the three 1960-1975 cohorts experienced real relative income growth between 1981 and 1996. This was not the case for the same three Pacific Island cohorts, whose relative incomes decreased between .5 and 3 percentage points over the period.

In summary we find evidence for a substantial income disadvantage of arriving immigrants relative to natives after we account for differences in qualification levels and other personal characteristics. Evidence on economic progress is mixed. For most groups of immigrants who arrived before 1981, relative incomes increased over the next fifteen years but there were exceptions. Section 8.4 provides a more detailed analysis of the idiosyncratic assimilation patterns of the various immigrant groups by pursuing an alternative regression approach that pools the three Census years and imposes a tighter structure on the relative income dynamics.

How important are differences in characteristics in accounting for income differentials?

Controlling for differences in characteristics leads to a larger relative income disadvantage (or a smaller income advantage) for all immigrant groups except Pacific Islanders. In other words, non-Pacific Island immigrants look "better" when compared to an *average* native rather than when compared to a *similar* native. We now decompose the overall effects of the various characteristics (hours, age, education and gender) into its constituent parts in order to assess the individual importance of each variable for explaining native/immigrant income differentials.

We illustrate this approach using two example, the relative income position of recent Asian immigrants and recent Pacific Island immigrants in 1986 and 1996. Over that period, the average Asian income disadvantage among recent immigrants increased from -11.6 percent to -46.3 percent, while the average Pacific Island disadvantage increased from -36.9 to -63.3 percent. These numbers were already given in Table 39, but are repeated for convenience in the upper panels of Table 41.

To decompose these differentials, we proceed as follows. First, we run separate log-income regressions for immigrants and natives for each year. Second, using the respective average values for each variable, we can evaluate the differences in average characteristics at the estimated native coefficients. For instance, we see from Table 40 that recent immigrants from the Pacific Islands worked on average fewer hours than natives. The difference was 1.8 hours per week. The estimated income increase for one additional hour was 1.6 percent, based on the native coefficient. Hence, the specific hours effect suggest that the income of an average native should be 2.9 percent above the average income of a recent Pacific Island immigrant. This number can be compared to the overall 1986 income gap of 0.369. We conclude that the difference in average hours can explain about 8 percent of the total income gap.

Table 40: Log-income regressions, Natives and recent immigrants from the Pacific Islands and Asia, 1986 and 1996 (Average values for variables in parentheses).

	1986			1996		
	Natives	PI	Asia	Natives	PI	Asia
Hours	0.016	0.017	0.016	0.017	0.015	0.014
	[40.71]	[38.92]	[42.23]	[39.43]	[37.01]	[36.30]
Age	0.073	0.051	0.052	0.112	0.100	0.085
	[34.35]	[27.07]	[31.19]	[36.34]	[29.18]	[34.32]
Age squared/100	-0.079	-0.065	-0.043	-0.124	-0.127	-0.090
	[13.32]	[7.955]	[10.51]	[14.70]	[9.403]	[12.62]
School qual.	0.171	-0.005	0.007	0.179	0.099	0.080
	[0.278]	[0.310]	[0.260]	[0.352]	[0.421]	[0.290]
Vocational qual.	0.295	0.117	0.191	0.263	0.229	0.239
	[0.296]	[0.205]	[0.202]	[0.298]	[0.238]	[0.183]
University qual.	0.568	0.369	0.372	0.552	0.551	0.353
	[0.065]	[0.023]	[0.227]	[0.100]	[0.073]	[0.395]
Male	0.385	0.188	0.354	0.255	0.138	0.251
	[0.589]	[0.595]	[0.610]	[0.540]	[0.569]	[0.539]
Constant	6.940	7.424	7.162	6.674	6.801	6.844
Observations	57688	4382	3794	59619	2327	10511

The effect of the other variables can be studied in similar ways. For simplicity, we combine the effects of age and age squared, as well as the three qualification variables, into one measure for age and qualifications each. For recent Pacific Island immigrants in 1986, age differences explain 29 percent of the income gap, while education differences explain 12 percent. Taken together, about half of the total income difference is explained by differences in characteristics.

The next column of Table 41 gives a measure of the *overall* contribution of each variable to the total income gap. There are two ways in which a variable can be quantitatively important: the first are large differences in the average values, while the second are differences in the coefficients. For instance, natives and recent Pacific Island immigrants in 1986 had about the same proportion of males (59 and 60 percent, respectively). However, the native male income premium was estimated at 39 percent, while the Pacific Island premium was 19 percent. Hence, differences in the gender income differential account for almost one third (31.2 percent) of the overall income differential between natives and immigrants.

With this line of reasoning, we find that in 1986 for Pacific Island immigrants, age was the single most important factor for explaining the overall income differential. Age accounted for 159 percent of the overall differential. In other words, had it not been for other factors acting in the opposite direction, the differential would have been even larger than the one that was actually observed. There are two reasons why age is important. Firstly, recent immigrants were relatively young. And secondly, the fact that immigrants tended to have steeper age-income

profiles than natives means that younger immigrants were exposed to an additional disadvantage (relative to natives of the same age).

Between 1986 and 1996, the Pacific Island income differential increased substantially. At the same time, observed differences in characteristics accounted for a decreasing share of the overall differential. In terms of the overall effect of the variables, age was at 81 percent again the most important variable, while the contribution of qualifications remained below 10 percent.

Table 41. Accounting for the log-income differential of recent Pacific Island and Asian immigrants, 1986 and 1996.

I. Pacific Island Immigrants

	1986		1996	
Native log wage	9.487		9.962	
Immigrant log wage	9.118		9.329	
Unadjusted differential	0.369		0.633	
	a)	b)	a)	b)
Hours	8.1%	2.6%	6.7%	21.3%
Age	29.1%	158.8%	22.8%	80.6%
Qualifications	12.3%	38.4%	2.9%	9.6%
Male	-0.6%	31.2%	-1.1%	9.3%
Constant		-131.2%		-21.0%
Total	49.0%	100.0%	31.4%	100.0%

II. Asian Immigrants

	1986		1996	
Native log wage	9.487		9.962	
Immigrant log wage	9.371		9.501	
Unadjusted differential	0.116		0.463	
	a)	b)	a)	b)
Hours	-21.9%	0.0%	12.0%	37.4%
Age	7.7%	241.8%	-6.7%	100.6%
Qualifications	-52.7%	41.0%	-26.2%	-2.0%
Male	-6.6%	9.4%	0.0%	0.5%
Constant		-192.4%		-36.6%
Total	-73.6%	100.0%	-20.9%	100.0%

Note: a) give decomposition by characteristics alone, b) by characteristics and returns.

The second part of Table 41 performs similar decompositions for Asian immigrants. As far as differences in characteristics are concerned, the estimates confirm that qualifications act in favour of Asian immigrants. The qualification related income *premium* amounts to 52 percent of the actual income disadvantage. The premium decreased to 26 percent of the actual unadjusted differential by 1986. However, in absolute terms the contribution actually increased from 0.06 to 0.12. In terms of the overall effect of differences in both characteristics and

returns, we find again that age is the single most important variable. The other variables do not display a robust pattern.

This is not to say that other variables do not matter. Quite to the contrary, they are very important in predicting individual income levels. For instance, the difference between having no qualification and a university degree is large and certainly statistically significant. Also, within each group, variations in the characteristics explain a substantial fraction of the overall variation in income. Take, for example, natives income in 1986. 16 percent of the variation is explained by variation in hours, 9 percent by age, 6 percent by education, and 13 percent by gender.[72] Similar numbers are observed for the other groups. However, when it comes to explaining the *difference* between native and immigrant income levels, we find that differences in age-income profiles and in average age account for most of the overall income differentials.

8.4. The pooled regression approach

The previous cohort analysis had (at least) two serious limitations, limitations that can be overcome by an alternative regression framework using data that are pooled over the three Census years. The first limitation is that we can follow immigrants during at most the first 15 years of integration, and that only one such observation point is available, namely the cohort of immigrants arriving between 1976 and 1980. Secondly, one cannot derive any results on changes in the quality of incoming cohorts other than for the three cohorts that arrive just previous to the three Census years, i.e. it is not possible to establish longer-term trends in cohort quality. Nor is it possible, based on these regressions, to predict the future relative position of immigrants arriving in the early 1990's in, say, fifteen years time.

In order to overcome these limitations, one has to impose a tighter parametric structure on the integration process. In particular, the limitations disappear if one is willing to assume a common functional relationship, for instance a polynomial function or a step function (to name but two possibilities used in the previous literature) between years since migration and the relative income of immigrants.[73] The essential requirement is that this functional relationship be

[72] These figures are based on the R-squared of separate regressions, in which the other characteristics were excluded. The combined expanatory power is at 32 percent somwhat lower than the sum of the components as the characteristics are correlated.

[73] A linear relationship, i.e. with $\ln(y) = \alpha+\beta YSM$, implies that the cohort differences estimated by the independent cross sections in the previous part should be stable over time (A linear relationship is

independent of the arrival cohort (whereas the previous approach allowed each cohort to have its own assimilation pattern). Under such an assumption, it becomes possible to determine the entry position of any arbitrary pre-1976 cohort as well as the future income path of the 1991-1995 cohort.

The approach does not require that income adjustment profiles are identical for all immigrants. In fact, the functional form determining relative income growth may include interactions of any type that enable profiles to vary as a function of immigrant characteristics such as qualifications or region-of-origin. In this sense, this approach that has been previously used by Borjas (1985), Funkhouser and Trejo (1995), and Schoeni (1997), among others, retains a substantial amount of flexibility as will be detailed below.

Practically, we proceed by regressing logarithmic income on a set of cohort dummies *and* years since migration. In order to estimate this model we need to pool data from at least two census years. To see this point, observe that had we data from a single Census, 1981, say, then it must hold true that *year of entry* + *years since migration* = 1981. But this means that we cannot estimate separate effects of *year of entry* (=cohort) and *years since migration* since the variables are collinear.[74] The basic adjustment model can be written as follows:

$$(2) \qquad \log(y_{it}) = X_{it}\beta + \sum_{k=1}^{8} \eta_k C_k + \delta YSM + \phi YSM^2 + \gamma YEAR86 + \lambda YEAR96 + \varepsilon_{it}$$

As in Model (1), *y* is income, X a vector of control variables including weekly hours of work, gender, age, age squared, and three indicator variables for the highest qualification (school, vocational, and university; no qualification is the reference group). C is a set of indicator variables indicating the cohort from which an immigrant is drawn. These cohort indicators are set to zero for natives. Note that we include a full set of indicators variables. Hence, η_k now measures the *initial* percentage difference in income between otherwise similar immigrants of

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sufficient but not necessary). The restriction of stable cohort differences can be tested using a simple F-test. While it is rejected by the data, the F-statistics are not overwhelmingly large, given the sample sizes, and we feel justified in the following to assume that cohort differences evolve along a slightly more general second order polynomial.

[74] In the seminal study by Chiswick (1978) this problem was "solved" by excluding cohort effects *a-priori* and regressing logarithmic income on years since migration only.

cohort k and natives (i.e., for *YSM*=0), while h_k - h_j measures the percentage difference in income between otherwise similar immigrants of cohort k and cohort j. Alternatively, we could have included an overall immigrant dummy and omitted one of the indicators as reference cohort - the material results would be the same. *YSM* are the years since migration. Again, this variable is set to zero for natives. The variables YEAR86 and YEAR96 are included to indicate from which Census year the observations are drawn in order to allow for period effects. [75] 1981 is the reference year.

A typical income adjustment path for cohort k would feature an initial income disadvantage upon entry (i.e. $\eta_k<0$), combined with subsequently faster income growth for foreign-born (i.e. $\delta>0$)[76]. δ literally measures the relative income growth attributable to the first year of residence. If, as we expect, ϕ is estimated to be negative, then income growth slows by -2 ϕ percentage points in each subsequent year. In this framework, income convergence occurs, if at all, after $\left(-d+\sqrt{d^2-4fh_k}\right)/2f$ years. The model assumes that while the speed of assimilation is the same for all cohorts, the entry points depend on cohort specific quality.

This basic model can be extended and generalised in various directions. For example, one might allow the effect of education to vary between foreign- and New Zealand born workers by including simple interactive terms. If, for example, skills are imperfectly transferable then the returns to a university qualification should be lower for immigrants than for natives (i.e., the entry-penalty relative to like natives is the larger, the more educated the immigrant). As an offsetting factor, skilled immigrants might have faster subsequent income growth relative to unskilled immigrants. In order to allow for differences in the speed of the income dynamics, we interact the years since migration polynomial with the highest qualification. One implication of this more general approach is that the number of years required for reaching parity with natives now depends on qualification level (i.e., the previously given formula for the years until convergence no longer applies). In order to interpret the regression results it will be useful to plot age-qualification profiles for various education levels.

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[75] These period-effects *inter alia* take account of the fact that we measure income in nominal rather than real terms. Furthermore, in order to identify the period effects γ and λ we have to assume that that immigrants and natives, and immigrants arriving in different years, are similarly affected by exogenous labour market changes that cause the period effects.

[76] Note that the model postulates a common income growth for natives and immigrants of equal age due to the second order polynomial in age.

There are further possibilities to relax the restrictiveness of model (2). For instance, the effects of all covariates can be allowed to vary between 1981, 1986 and 1996 in order to reflect possible changes in the returns to endowments. [77] A three-way interaction between immigrant status, qualifications, and census years allows the trends in the returns to those qualifications to vary between immigrants and natives. For instance, such interactions would allow an increasing disadvantage of qualified immigrants relative to similarly qualifies natives as the transferability of degrees might have decreased over time. All differential effects can be put to test within this simple parametric framework. Also, we estimate the models separately for men and women, for English speakers and for non-English speakers, and for immigrants of different region-of-origin. [78]

In order to implement model (2), we generate first a pooled data set for employed natives and immigrants. This file includes indicator variables for the Census years 1986 and 1996, for the 8 arrival cohorts etc. We start out experimenting with successively more general specifications.

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[77] This excludes the cohort effects and the years since migration variables. The model is not identified if both of them are allowed to vary over time. In fact, the identification problem is more serious and fundamental. If any of the two effects, cohort variable or years since migration, is allowed to vary over time, then it follows that the other variable has to be excluded in order to estimate the model. A full set of time varying coefficients and exclusion of the YSM variable led to regression (1) in the previous section. The alternative approach, excluding cohort effects but letting the coefficient of the YSM variable vary over time, was pursued by Beggs and Chapman (1988) in a model that implicitly restricted cohort effects to be proportional for succeeding cohorts. Beggs and Chapman computed assimilation rates for like individuals by comparing the predicted earnings in the two census years for foreigners $(\hat{y}_{F,2} - \hat{y}_{F,1})$ and natives $(\hat{y}_{N,2} - \hat{y}_{N,1})$, respectively, in practice for immigrants who came in 1965 and were observed in 1973 and in 1981.

[78] Allowing for separate regressions for the various regions-of-origin introduces a slight methodological inconsistency. In the general model, the effects of some variables, namely the year effect, hours and age, are assumed to be the same for the foreign- and New Zealand-born. But if one adheres strictly to this specification, these variables must be the same for all country-of-origin regressions as well. Technically, therefore, one should not just run separate regression for each region-of-origin/native pair but rather implement a pooled regression with a large number of regional interactions. Unfortunately joint estimation proved to exceed the available computational capacities. With separate estimation, the question of the "true" native baseline performance arises. In practice, this turned out to be less of the problem since the estimated (unrestricted) effects for natives were very similar across the regional regressions.

These include: additional regional dummies (the UK is the reference region), time varying parameters, time varying regional dummies, interactions between qualification levels and an immigrant indicator and years since migration.[79]

8.5. Limitations

The cohort approach can give misleading answers about the actual amount of relative income growth if immigrants leave the country between Censuses, either back to their country of origin or onwards to another host country. This may lead to so-called "weeding-out" where over time only (economically) successful migrants stay in the country while unsuccessful migrants return to their home country. A similar effect might result if outmigration rates vary across residency categories. For instance, migrants in the social categories (family reunification and refugee) are probably more likely to remain in New Zealand (given the reasons for their migration) than migrants who are selected for their economic characteristics. Since social migrants are not screened for their skills, thay are likely to be economically less succesful than selected migrants.

In either case, it follows that recent immigrant cohorts contain the whole mix of immigrants and therefore are of lower average quality than earlier cohorts that have been reduced in size. As a consequence the amount of relative income growth for those immigrants who actually stayed in the country tends to be overstated. Of course, it might be also the other way around that the more successful immigrants leave, in particular in the case of step migration. The problem is compounded by changes in the composition of the native population benchmark due to emigration. While this phenomenon has, to the best of our knowledge, not received any attention in the literature, it is clear that the effects are similar to those of immigrant outmigration. For instance, if more talented natives leave their country, then the relative improvement in the economic position of immigrants over time is overstated by our analysis. In

[79] We also contemplated to interact the immigrant indicator with all main effects including age; however the interpretation of the results in the fully interacted model with respect to the relative income dynamics is possible only via simulation (i.e., plots of age-income profiles under various scenarios), whereas our adopted specification with a limited set of interactions still allows for a meaningful interpretation (and tests) of individual effects/coefficients.

the New Zealand context there is substantial international mobility, and this might be a quantitatively important factor.[80]

While out-migration poses problems for the valid interpretation of historical data, it equally limits our ability to predict future adjustment patterns. If there are substantial changes in out-migration patterns in the future (i.e. after 1996), this could modify the observed adjustment profiles of the migrant who do stay in New Zealand, and reduce their resemblance to the adjustment profiles that are estimated in the following Sections using historical data.

Whether or not outmigration is a substantive factor is in the end an empirical question. Unfortunately, Census data are ill suited to address the issue. There are many reasons why immigrants are not counted in the first place, including non-response and temporary absence. The previous evidence in section 7.1.4. suggested that five-year outmigration might be as high as 30 percent. It is almost impossible, from Census data, to determine whether outmigrants were more or less successful than those who remain, since the labour market outcomes prior to departure are not observed (in order to compare them, for instance, with the outcomes of immigrants with "similar" characteristics). The only proxy measure is to equate "success" with qualification levels and attempt to study the distribution of education levels of a cohort over time. Bar all classification problems associated with such an endeavour, the general evidence suggests that differential emigration by qualification may not be substantial. However, this does not preclude differential emigration rates of the least successful immigrants *within* a qualification group, which again would cause the cohort approach to overstate relative income growth.

Another factor that might cause biased estimation of the relative income growth profiles is a violation of the assumption that immigrants and natives are similarly affected by exogenous labour market changes, i.e., that the period effects are the same for the two groups. In fact, there is some evidence that this assumption is questionable, in particular for Pacific Island immigrants. For instance, Figure 5 showed that 1996 relative income of Pacific Island immigrants dropped for all arrival cohorts, not only the most recent ones. But a decline in the relative position of Pacific Island immigrants between 1986 and 1996 would, everything else

[80] This issue is discussed in some detail in Poot (1993b) where the analysed data suggest positive self selection of New Zealand emigrants to Australia.

the same, lead to an upward bias in the estimated relative income growth, since imposing a common period effect makes them "look too good". [81]

A final limitation of our approach is that we measure income, not earnings. [82] Our interpretation of the results here follows the standard human capital - earnings function framework of Becker and Mincer. However, the Census information is on income from all sources including government transfers. To bring our estimates in line with the earnings function literature, we restrict all regressions of this part to employed individuals, i.e. individuals for whom earnings could be observed in principle. This adjustment is less than ideal, since employment status refers to Census day, while income refers to the previous twelve months. Hence, we include people who just entered the workforce, as we exclude people who worked for most of the twelve month but happened to be without a job on Census day. However, this is the best we can do with Census data,

Two facts suggest that the Census income measure might be indeed a useful proxy for earnings. Firstly, for most workers earnings constitute the largest part of their income. Secondly, we correlated industry specific hourly wages obtained from the income information with official QES industry wages and found a surprisingly good match. The rankings were the same and the coefficient of correlation was 0.83 (for the 1981 data) and 0.87 (for the 1986 data). However, one should keep in mind that, strictly speaking, we analyse income rather than earnings, and hence that the interpretation of coefficients as "returns to productive characteristics" has to be understood as an approximation.

8.6. Results

In this section, we report on the results from a total of 25 regressions that we ran. The discussion is organised around three questions:

1. What is the most appropriate specification? What interpretations do the different models offer with respect to the integration process of immigrants?

[81] This caveat does not apply if the decline in the relative position of Pacific Island immigrants in 1996 can be fully be explained by changes in the returns to endowments (that affect natives and Pacific Islands differently). Our specification allows for such changes and the assumption of a common period effect would still be permissible.

[82] This limitation is not specific to the pooled regression approach but extends to the entire income related analysis of this report.

2. Does relative income growth vary by education level?
3. What is the importance of English speaking background and region-of-origin?

Most of this section is retrospective, i.e., deals with the period covered by the Census years. However, we also explore the implications of our results for the possible future outcomes of the latest pre-1996 arrivals.

The most basic model in Table 42, column 1, regresses logarithmic income on cohort dummies, period effects, a quadratic in years in New Zealand, hours of work, and a quadratic in age. The standard errors are given next to the coefficients. For ease of reading, only *insignificant* coefficients (at the 5 percent level) are marked with an asterix.

Table 42: Pooled Log-Income regressions: Various Specifications (Number of Observations: 559257)

	(1)		(2)		(3)		(4)	
	Coef.	StdErr	Coef.	StdErr	Coef.	StdErr	Coef.	StdErr
Cohort Pre-1960	-.1761	.0103	-.2328	.0098	-.1497	.0100	-.2015	.0098
Cohort 1961-65	-.1448	.0089	-.1872	.0085	-.1155	.0087	-.1607	.0086
Cohort 1966-70	-.1350	.0078	-.1829	.0075	-.1042	.0078	-.1635	.0076
Cohort 1971-75	-.1122	.0063	-.1609	.0060	-.0845	.0064	-.1460	.0061
Cohort 1976-80	-.1556	.0052	-.2157	.0050	-.1196	.0056	-.2046	.0051
Cohort 1981-85	-.1265	.0050	-.1941	.0047	-.0929	.0054	-.1945	.0047
Cohort 1986-90	-.1579	.0052	-.2246	.0049	-.1040	.0057	-.2266	.0049
Cohort 1991-95	-.1659	.0048	-.2989	.0046	-.1916	.0054	-.3053	.0047
1986 Census	.4270	.0026	.3932	.0025	.3954	.0025	.8302	.0231
1996 Census	.8742	.0036	.8238	.0034	.8259	.0034	.5787	.0226
Years in NZ	.0062	.0005	.0090	.0004	.0088	.0004	.0079	.0005
Y in NZ sq/100	-.0004*	.0008	-.0054	.0008	-.0049	.0008	-.0047	.0008
Hours of work	.0226	.0000	.0183	.0000	.0183	.0000	.0214	.0001
" * 1986							-.0044	.0001
" * 1996							-.0041	.0001
Age	.0851	.0005	.0822	.0004	.0829	.0004	.0781	.0008
" * 1986							-.0128	.0011
" * 1996							.0235	.0011
Age squared/100	-.0921	.0006	-.0889	.0006	-.0900	.0006	-.0830	.0011
" * 1986							.0133	.0014
" * 1996							-.0288	.0014
School qual.			.1532	.0024	.1480	.0024	.1459	.0043
" * 1986							-.0057*	.0060
" * 1996							.0293	.0060
Vocational qual.			.2764	.0024	.2647	.0024	.2813	.0045
" * 1986							-.0113*	.0060
" * 1996							.0062*	.0061
University qual.			.5597	.0032	.5604	.0033	.5117	.0069
" * 1986							.0472	.0091
" * 1996							.0718	.0085
Male			.3331	.0019	.3327	.0019	.3503	.0038
" * 1986							.0458	.0052
" * 1986							-.0831	.0049
Australia					-.0527	.0038		
" * 1986								
" * 1986								
Europe & Nth Am.					-.1064	.0034		
" * 1986								
" * 1986								
Pacific Islands					-.1059	.0036		
" * 1986								
" * 1986								
Asia					-.1832	.0039		
" * 1986								
" * 1986								
Other					-.0420	.0051		
" * 1986								
" * 1986								
R-squared	0.3764		.4396		.4421		.4427	

The pre-1960 cohort coefficient of -0.176 means that immigrants of this cohort entered New Zealand with an estimated initial income disadvantage of approximately 18 percent. By the time of the 1996 Census, those who were still in the labour market had experienced at least 36 years of income convergence. By that time they had comfortably "overtaken" similar natives, since it took this cohort, based on the estimates, about 29 years to reach parity with natives. [83]

Table 42 (cont'd): Pooled Log-Income regressions: Various Specifications (Number of Observations: 559257)

	(5)			(6)		(7)	
	Coef.	StdErr		Coef.	StdErr	Coef.	StdErr
Cohort Pre-1960	-.2042	.0121	Cohort Pre-1960	-.1899	.0110	-.2209	.0135
Cohort 1961-65	-.1600	.0103	Cohort 1961-65	-.1494	.0098	-.1742	.0116
Cohort 1966-70	-.1460	.0091	Cohort 1966-70	-.1526	.0089	-.1730	.0102
Cohort 1971-75	-.1182	.0073	Cohort 1971-75	-.1347	.0076	-.1502	.0085

[83] The formula was provided in the previous section. The calculation included the squared years since migration term although it was statistically insignificant in this particular regression.

Cohort 1976-80	-.1410	.0061	Cohort 1976-80	-.1919	.0068	-.2016	.0072
Cohort 1981-85	-.1083	.0055	Cohort 1981-85	-.1818	.0069	-.1863	.0070
Cohort 1986-90	-.0808	.0058	Cohort 1986-90	-.2112	.0070	-.2095	.0070
Cohort 1991-95	-.1652	.0058	Cohort 1991-95	-.2864	.0076	-.2779	.0079
1986 Census	.8393	.0231	1986 Census	.8319	.0231	.8260	.0233
1996 Census	.5733	.0226	1996 Census	.5786	.0226	.5623	.0229
Years in NZ	.0120	.0005	Y in NZ	.0078	.0006	.0093	.0007
Y in NZ sq/100	-.0092	.0008	" * School	.0024	.0007	.0022	.0007
Hours of work	.0215	.0001	" * Vocational	-.0021	.0006	-.0022	.0006
" * 1986	-.0045	.0001	" * University	.0009*	.0008	.0008*	.0008
" * 1996	-.0043	.0001	Y in NZ sq/100	-.0046	.0012	-.0063	.0013
Age	.0785	.0008	" * School	-.0041	.0016	-.0034	.0016
" * 1986	-.0128	.0011	" * Vocational	.0022*	.0015	.0025*	.0015
" * 1996	.0255	.0011	" * University	.0023*	.0019	.0028*	.0019
Age squared/100	-.0837	.0011	Hours of work	.0214	.0001	.0214	.0001
" * 1986	.0132	.0015	" * 1986	-.0044	.0001	-.0044	.0001
" * 1996	-.0311	.0014	" * 1996	-.0041	.0001	-.0041	.0001
School qual.	.1489	.0044	Age	.0781	.0008	.0779	.0008
" * 1986	-.0120*	.0061	" * 1986	-.0130	.0011	-.0129	.0011
" * 1996	.0122	.0061	" * 1996	.0234	.0011	.0236	.0011
Vocational qual	.2809	.0046	Age squared/100	-.0829	.0011	-.0829	.0011
" * 1986	-.0177	.0061	" * 1986	.0136	.0015	.0135	.0015
" * 1996	-.0212	.0063	" * 1996	-.0287	.0014	-.0286	.0014
University qual	.5220	.0071	School qual.	.1595	.0055	.1426	.0070
" * 1986	.0322	.0093	" * 1986	-.0062*	.0060	.0050*	.0091
" * 1996	.0534	.0087	" * 1996	.0299	.0060	.0653	.0095
Male	.3502	.0038	" * Immig.	-.0461	.0084	-.0204*	.0107
" * 1986	.0469	.0052	" * Immig. * 1986			-.0167*	.0099
" * 1986	-.0838	.0049	" * Immig. * 1996			-.0517	.0107
Australia	-.0514	.0063	Vocational qual.	.2922	.0057	.2887	.0075
" * 1986	-.0157*	.0080	" * 1986	-.0108*	.0060	-.0082*	.0093
" * 1986	.0092*	.0085	" * 1996	.0059*	.0062	.0158*	.0099
Europe & Nth Am	-.1075	.0054	" * Immig.	.0135*	.0085	.0185*	.0112
" * 1986	-.0029*	.0068	" * Immig. * 1986			-.0036*	.0103
" * 1986	-.0094*	.0075	" * Immig. * 1996			-.0146*	.0113
Pacific Islands	-.0443	.0059	University qual.	.5173	.0091	.5234	.0144
" * 1986	-.0558	.0071	" * 1986	.0458	.0091	.0321*	.0182
" * 1986	-.1276	.0080	" * 1996	.0707	.0085	.0714	.0173
Asia	-.1174	.0074	" * Immig.	-.0282	.0104	-.0347*	.0177
" * 1986	.0236	.0093	" * Immig. * 1986			.0169*	.0202
" * 1986	-.1641	.0091	" * Immig. * 1996			-.0036*	.0192
Other	-.0166*	.0101	Male	.3507	.0038	.3506	.0038
" * 1986	-.0280	.0134	Male * 1986	.0458	.0052	.0458	.0052
" * 1986	-.0618	.0122	Male * 1996	-.0832	.0049	-.0832	.0049
R-squared	.4462			.4428		.4429	

This was not particularly fast and other cohorts converged in less time. For instance, the 71-75 cohort came with an estimated entry disadvantage of 11 percent only, which reduced their estimated convergence time to 18 years. Since we assume a common assimilation profile for all cohorts, the differences in convergence time between cohorts is a full reflection of the differences in their initial entry disadvantage, which was estimated at 15 percent for the average cohort.

The next model in column (2) controls in addition to age and period of residence for highest qualification level and gender. The main change is a substantial increase in the estimated entry disadvantage, together with a steeper assimilation profile. This change had to be expected since, as previously seen, immigrants always were more educated than natives, causing the income gap to increase once that factor is taken into account. The average entry disadvantage now is estimated at 21 percent, with 28 years of residence to convergence. The estimated entry points for the 91-95, 81-85 and 76-80 cohorts (-22, -19, -30 percent, respectively) are similar

to the separate cross-section estimates given in Table 37 for the same cohorts of recent immigrants (-21, -15, -31 percent, respectively). [84]

Interestingly, while the differences between cohorts were statistically significant, there was no explicit trend in cohort quality over the long term. Here, one of the limitations of the analysis in 8.3. becomes evident. While both approaches correctly suggest that the immigrant "quality" decreased over the more recent 1986-1996 period, only the pooled regression analysis is able to reveal that the long term trend over the last 40 odd years is much less obvious. Cohort quality at times increased and at times decreased. The most recent 1991-95 cohort is different from the previous average only once we take its relatively high level of formal qualifications into account. It is safe to conclude, then, that the New Zealand data do not support the hypothesis of a long-term trend of declining cohort quality that was for instance found for the U.S. [85] The data support, however, a decline in cohort quality over the recent decade.

Column (3) of Table 42 provides a first pass at the idiosyncrasies of region-of-origins. The regression includes, apart from the variables used in (2), a set of region-of-origin dummies. UK & Ireland is the omitted reference category. The model allows only entry points to differ across regions but imposes joint convergence rates as well as a joint cohort structure. For example, the difference between the 1981-85 and 1991-95 cohorts must be the same for all regions. Clearly, based on what we know from Section 8.3., this restriction appears highly questionable and we will give it up later when we estimate models for regional subsamples only. Based on model (3), we find that UK & Irish immigrants had the best income position among all immigrants. Asian immigrants had an estimated 18 percent entry disadvantage relative to the British. This translates into an estimated time to convergence of 15 years for British and Irish immigrants, and of 46 years for Asian immigrants.

Model (4) in the next column attempts to highlight the possibility of time-varying parameters. The results in 8.3 had suggested, among other things, a decrease in the male income premium

[84] The controls in Table 37 are the same as in Column 2; Table 37 is based on separete regression without any direct estimation of a Years since Migration (YSM) effect. But for recent immigrants, the YSM values are small (0-5) and the results therefore should be of similar order of magnitude, as they indeed are.

[85] Note that the lack of a downward trend in cohort quality is also incompatible with systematic outmigration of less successful immigrants. Whether this conclusion stands up when we disaggregate by region-of-origin will be seen later.

and an increase in the university income premium between 1981 and 1996. Similar results are obtained in Model 4. The university income premium increased by an estimated 7 percent between 1981, the base period, and 1996 (the coefficient of the interaction term Uni*1996 is 0.07). The estimated male income premium fell by 8 percent. Recall that immigrants in 1996 were well educated relative to natives. Allowing for a higher return therefore will increase the relative entry disadvantage of the 1991-95 cohort, which is the case, although the effect is not large.

In Model (5), the census year interactions are extended to the region-of-origin variables. The most interesting results here are that Pacific Island incomes gradually fell relative to UK & Irish incomes, by about 5 percent between each Census, whereas the relative incomes of Asians first improved between 1981 and 1986, but then dropped by 19 percent between 1986 and 1996.

Do income differentials vary by education level?

Models (6) and (7) follow up on the above question. To that end, we include interactions between qualification levels and an immigrant dummy variable, and between qualification levels and YSM and YSM^2. One plausible hypothesis is that the human capital of a highly qualified migrant is less transferable than that of a less qualified migrant. One reason is the need to obtain a professional license. Eventually, a qualified migrant may reach a position that corresponds to his or her training, but this process takes time. This scenario has two empirical consequences: the initial entry point should be below those of less trained immigrants (always measured relative to similarly qualified natives), and the subsequent income growth should be higher.

The evidence in support of this hypothesis is weak at best. For instance, we find in Model (6) that relative to unskilled immigrants, the estimated entry disadvantage (indicated by the coefficient on School qual. * Immig.) increases by 5 percent for immigrants with school qualification, decreases by 1 percent for vocational trainees (insignificant) and increases by 3 percent for university graduates. Hence, there seems to be a small effect for immigrants with university qualification but it is smaller than the effect of a school qualification. However, income growth is not significantly different between university graduates and immigrants without qualification.[86] The results do not become more conclusive once we allow in Model (7) a three-way interaction between qualification, immigrant status and Census year. In this way, the differential effect of qualifications is allowed to vary over the three years.

Despite these weak results, we take Model (7) as our basic model for the following more detailed analysis in which we disaggregate by gender, English speaking status, and region-of-origin. The main reason is that we are particularly interested in any differential effect of schooling and keen not to exclude it *a priori*. It may be the case that the aggregate analysis cannot reveal aspects that are present at the disaggregate level. The preliminary analysis has pointed out that there are important region-of-origin effects (models (3), (4)), and these might interact with qualifications. With more than half a million of observations, there is no immediate need for a parsimonious parameterisation. We feel more confident in estimating a

[86] Our model specifies common age profiles for qualification groups. If anything, we'd expect steeper profiles for more qualified workers. But this would tend to upward bias the coefficient on the YSM * Uni qual. Interaction, whereas we do not find any effect at all.

fully interacted model (by region-of-origin, Census year, gender, qualification level etc., keeping in mind the necessary identifying restrictions) and let the data be free to determine the factors that are important for measuring immigrants' entry position and their relative position by period of residence.

The preliminary analysis of Table 42 has set the scene for the next step. While each of the models in Table 42 had its own interest and interpretation, we end this part by pointing out that formal hypotheses tests can be conducted in order to isolate the model that is "best" in a statistical sense. Table 43 provides the relevant F-statistics.

TABLE 43: F-TESTS

Model	Number of Restrictions	F-stat	p-value
(1)(2)	4	15767.2	0
(2)(3)	5	501.7	0
(2)(4)	14	222.0	0
(4)(5)	15	238.0	0
(4)(6)	9	18.6	0
(6)(7)	6	4.4	0.0002

Generally speaking, any restriction imposed on the model is rejected by the data, which does not surprise given the available amount of data. Therefore, in the remainder of this section we feel vindicated to estimate the most general model only, that is, Model (7) disaggregated by gender and region-of-origin or English language.

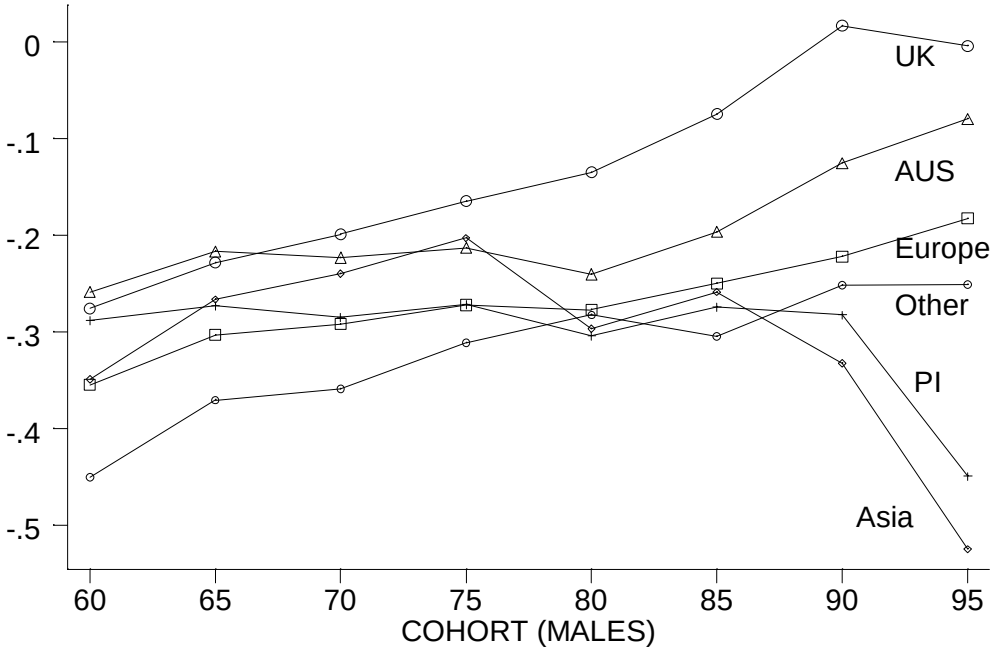
The importance of English speaking background and region-of-origin for entry position and adjustment.

In order to analyse whether or not entry disadvantage and subsequent income growth are affected by English language and by region-of-origin, we run separate regressions for the following eight sub-samples of workers: English speaking background (ESB), Non-English speaking background (NESB), UK&Irish, Australian, European & Nth American, Pacific Island, Asian, and Other migrants. In each case, the full sample of native workers is included in order to provide a comparison group. Furthermore, the samples are split by gender. The sample sizes are smaller now. In some cases, they decline below 10,000 immigrants, for instance in a regression for female migrants from Other regions. The standard errors for the specific

immigrant effects tend to be accordingly larger. The full set of regression results is reported in Tables B1-B3.

We start with an analysis of the relative entry position over time. The pooled regressions estimate the entry effects for eight distinct cohorts, and the values for male immigrants are plotted in Figure 8 for the various regions-of-origin. The Figure corroborates what was said before in the context of English versus non-English speaking migrants. While the former group of immigrants improved relative to natives over most of the period, the relative position of the latter group of immigrants (Asians and Pacific Islanders) declined. However, it is interesting to observe that the decline was entirely restricted to the to the 1990's. Cohort entry differentials were surprisingly similar between -25 to -35 percent, both between region-of-origins (with the exception of the UK) and over time, up to, and including, the 1986-1990 cohort. The most recent Pacific Island and Asian cohorts are, in a historical perspective, genuine outliers.

Figure 8. Estimated cohort effects, 1960-1995, male immigrants, by region-of-origin.



Next, based on the regression parameters in Tables B2 and B3, Figures 9-12 summarise the relative income position of immigrants over the life cycle. The figures show "age-income" profiles for natives and immigrants of a group, separately for workers with school qualification only and for workers with university qualification. The incomes of both native and foreign-born workers increase as workers become older and gain general labour market experience.

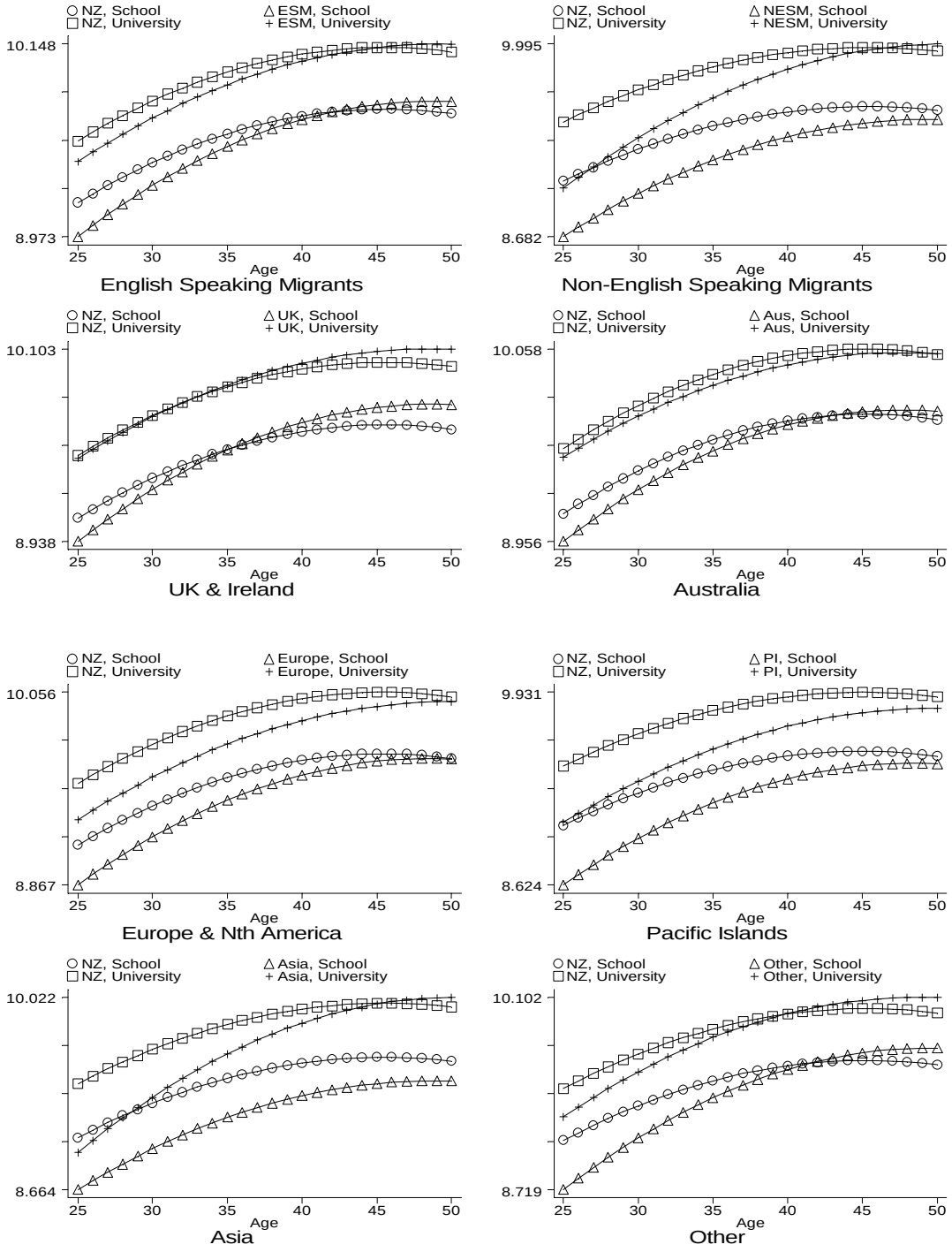
Typically the increases are larger for younger workers and smaller for older workers. Thus, the experience effect is concave for both immigrants and natives. Foreign-born workers have an additional gain as they become integrated into the host labour market and adjust. The figures show whether, and how fast, income convergence occurred for different groups of immigrants.

The income adjustment paths are drawn for immigrants who came to New Zealand at the age of 25 and same aged natives. The workers are followed over the next 25 years, up to the age of 50. We assume that they work full-time (40 hours per week). In general, the profiles are affected by when a migrant came (the cohort effect) and by historical time (since period effects and returns to endowments vary over the three Census years). We address this issue in two alternative scenarios.

Firstly, we consider the average migrant (and native) over the period. This means that the entry disadvantage is set to the arithmetic average of the eight cohorts, and that the returns to endowments are set to the arithmetic average of the three Census estimates. In the same spirit, the profiles are drawn in real terms and anchored at the average period effect. Secondly, we adopt a forward looking scenario for immigrants arriving in the early 1990's, predicting their income profiles over the next 25 years. We have a direct estimate of the entry disadvantage for the 1991-95 immigrant cohort. While we do not know the future returns to endowments, we use the 1996 estimates as the best available predictor. Finally, we anchor the profiles at the 1996 period level (i.e., incomes are in 1996 New Zealand dollars).

For example, the upper left graph of Figure 9 shows the age-income profiles of male English speaking migrants. For both natives and immigrants, the returns to a university qualification was substantial. The vertical distance between the two lines gives the approximate percentage difference in income between school graduates and university graduates of a given age. For English speaking immigrants, the estimated difference decreased with age, from 46 percent at the age of 25 to 35 percent at the age of 50.

Figure 9. Projected Age-Income Profiles, Male Immigrants and Natives



In other words, the assimilation profile was steeper for less qualified male English speaking migrants.[87] Moreover, the age-income profiles of immigrants (i.e., the sum of the experience

[87] By construction, the returns to qualifications are constant for natives, here at 37 percent. Therefore, English speaking migrants are estimated to have a higher return than natives over most of their career.

and assimilation effects) were steeper than the native profiles for both qualification levels, leading to convergence between the age of 40 and 45 (i.e., after 15-20 years of residence). In the following, we mostly refrain from giving detailed percentage estimates of income differentials between immigrants and natives and between the two qualification groups. Rather, we use the Figures to point out broad trends.

Comparing the upper left and upper right panels of Figure 9, we find a substantial difference in relative income dynamics between English and Non-English speaking migrants. NESB migrants had a much larger entry disadvantage. This was partly compensated for by faster subsequent income growth, in particular for university graduates. As a consequence, NESB migrants with university qualification eventually reached parity with similar natives, although it took about 20 years. By contrast, NESB migrants with school qualification did not reach native income levels within the time horizon of this analysis.

Therefore, the more disaggregated analysis provides indeed evidence for differential effects by qualification levels that was not found in the aggregate regressions. In particular, we find that more qualified English speaking migrants (literally, we mean university graduates versus school graduates) had a *smaller* entry disadvantage and *slower* subsequent income growth than less qualified migrants, whereas more qualified Non-English speaking migrants had a *larger* entry disadvantage and *faster* subsequent income growth. [88] One possible interpretation is that the transferability of skills is higher for ESB migrants than for NESB migrants, giving them a higher return to skills upon arrival (46 percent for ESB migrants, 33 percent for NESB migrants). Apparently, these opposed effects did offset each other in the aggregate, falsely suggesting that the level of qualification did not affect the relative economic position of immigrants.

The six lower panels give the age-income profiles by region-of-origin. Rapid convergence occurred for UK& Irish, Australian and Other immigrants. For all those groups of migrants, the entry disadvantage as well as the subsequent income growth was larger for the less qualified migrants. There are two regions for which both entry disadvantage and growth were about the same for school graduates and university graduates. Europeans reached parity after 25 years, whereas Pacific Islanders did not reach parity. The panel for Asia tells a third kind of

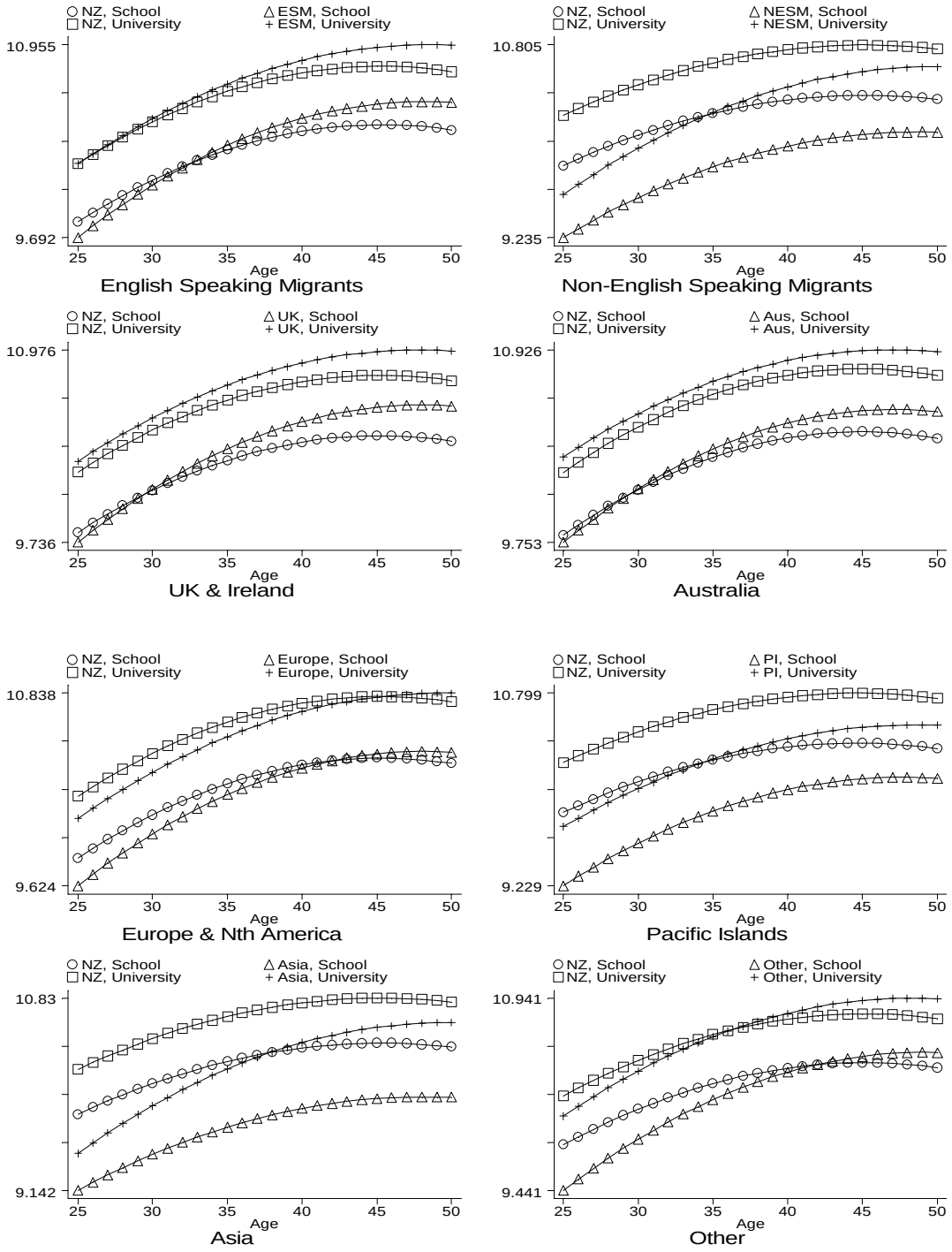
[88] The differential effects by qualification levels are statistically significant. See Table B1 in Appendix B.

story. Skilled Asian migrants had a very large initial disadvantage. The income of a 25 year old university graduate even fell short of the income of a native school graduate. However, income growth was very fast, and parity was reached within 20 years. Asian migrants with school qualification, by contrast, had very slow convergence rates, leaving them with a 14 percent income gap even after 25 years of residence.

Figure 10 shows age-income profiles for 1991-95 male immigrants, based on the 1996 regression parameters. There were several changes in the relative age-income profiles of an average immigrant relative to a typical 1991-95 immigrant. The most significant development was that among recent immigrants the difference between English speaking migrants and Non-English speaking migrants became much more pronounced, and there is no indication that the gap will narrow down over time. For instance, ESB migrants with university qualification had higher incomes than comparable natives almost from day one, whereas NESB migrants with university qualification will not reach parity with natives even after 25 years of residence. Furthermore, recent ESB migrants with school qualifications can be expected to reach parity with similarly qualified natives after a mere 5-10 years, compared to the more than 20 years to parity that it took for previous cohorts, while recent NESB migrants with school qualification will be left with a 26 percent income gap after 25 years of residence. The disadvantage associated with being less skilled was more pronounced in Figure 10 than in Figure 9. For a 25-year old worker, the 1996 income gap between a university graduate and a school graduate increased to 48 percent for a recent ESB migrant and to 35 percent for a recent NESB migrant.

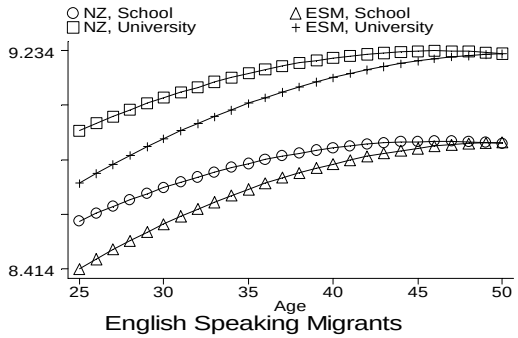
The region-of-origins of origin for which the economic outlook for the next twenty years looks better than what was experienced by previous cohorts include UK&Ireland, Australia, Europe & Nth America, and Other regions. Recent immigrants from those regions can expect incomes either above native incomes (British, Irish and Australian immigrants with university qualification) or close to native incomes, first below, then above. For recent Pacific Island immigrants, the regression results predict a large and persistent income gap independently of qualification.

Figure 10. Projected Age-Income Profiles, 1991-95 Male Immigrants and Natives

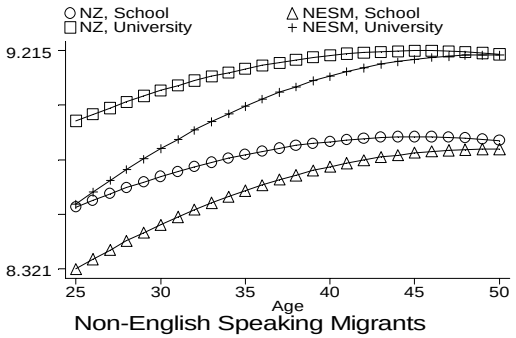


Recent Asian immigrants, and those with a university qualification in particular, can be expected to have fast rates of relative income growth. However, the initial income gap for a 25 year old arrival is so substantial that parity with natives is unlikely. Among immigrants with school qualification, the income gap is even larger than for Pacific Island migrants, without any substantial reduction over time (67 percent initially, 44 percent after 25 years).

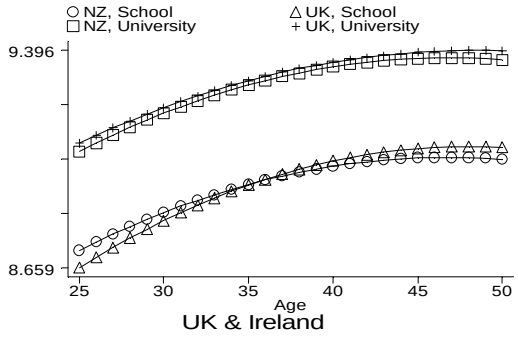
Figure 11. Projected Age-Income Profiles, Female Immigrants and Natives



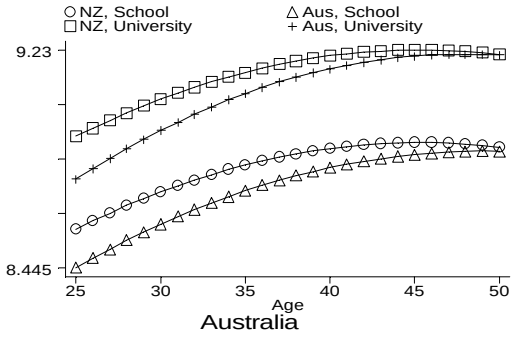
English Speaking Migrants



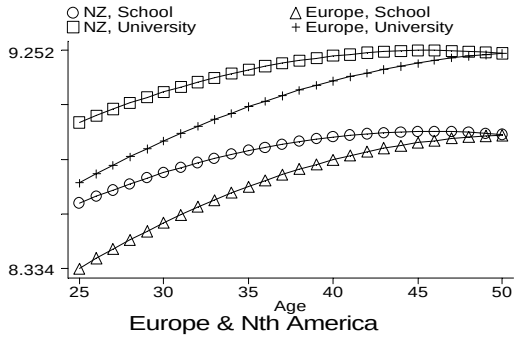
Non-English Speaking Migrants



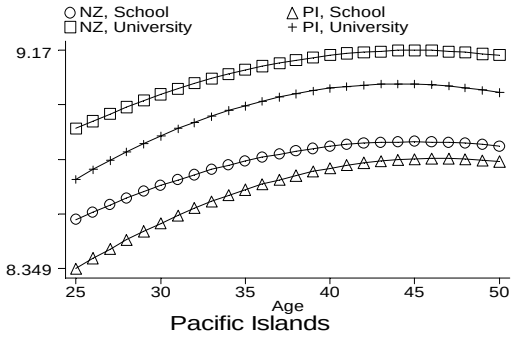
UK & Ireland



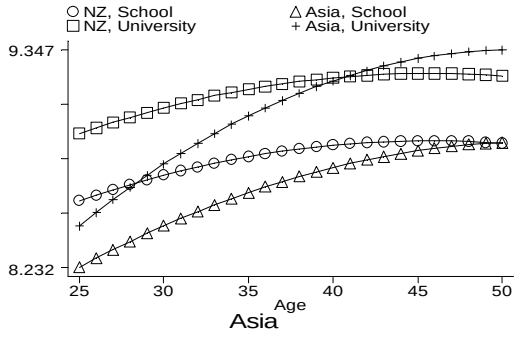
Australia



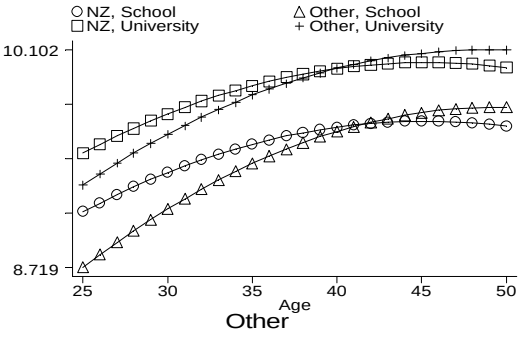
Europe & Nth America



Pacific Islands



Asia



Other

Are women different?

The answer is "definitely yes". Figures 11 and 12 repeat the previous kind of analysis for female immigrants, average and recent, respectively. We first concentrate on the average immigrant over the period, comparing the female results in Figure 11 and the male results in Figure 9. Take, for instance, the age-income profiles of English speaking migrants. Female profiles were substantially flatter than male ones.[89] There were two contributing factors. Firstly, the female returns to experience were smaller. Female native incomes increased by 35 percent over the 25 year period, male native incomes by 54 percent. Secondly, female immigrants had slower rates of assimilation. For instance, female income convergence over 25 years was 15 percentage points for university graduates, and 14 percentage points for school graduates. By contrast, the incomes of English speaking immigrant men converged by 18 and 26 percentage points, respectively. [90] By the same token, female incomes were less responsive to qualification levels. The university-school income differential was 34 percent for native women and 32 percent for immigrant women (aged 25). The male returns were 38 and 46 percent for natives and immigrants, respectively.

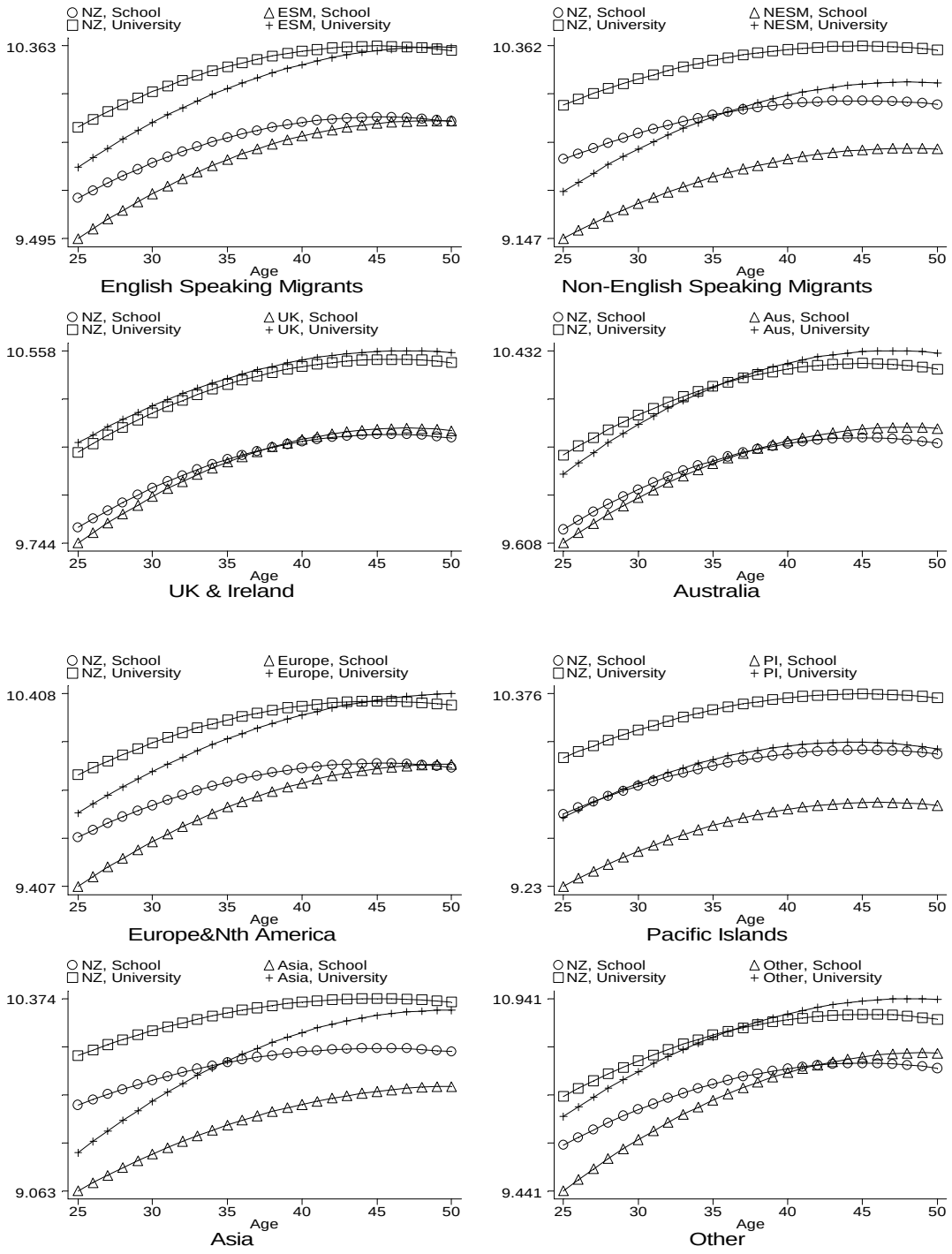
On a related point, the differences between the outcomes between ESB migrants and NESB migrants were less pronounced for women than for men. Neither ESB migrants nor NESB migrants overtook natives during the 25 year period. Both groups of immigrants just reached parity at the end (a small income differential is left for NESB school graduates). The relatively sluggish economic progress was insufficient in order to overcome the initial disadvantage. Although age-income profiles of female NESB migrants looked much like those of male NESB migrants - relatively large initial disadvantage in particular for university graduates, but also relatively larger subsequent growth rates - its constituent group, mostly Asian and Pacific Island immigrants, had a much more diverse experience than was the case for men.

---

[89] The income levels are not directly comparable between the female and male graphs due to the different normalization. However, relative incomes (between natives and immigrants or over time) can be meaningfully compared.

[90] Lower convergence rates for women have been found in previous studies using U.S. data as well. One possible explanation is that in the context of a household with credit constraint, the women may take a low-wage growth secondary job immediately after arrival in order to finance the human capital investment of her husband. Subsequently, the male investment will pay off in form of higher returns and faster convergence rates. Strictly speaking this argument only applies to married (or partnered) women, whereas our results include both married and unmarried women.

Figure 12. Projected Age-Income Profiles, 1991-95 Female Immigrants and Natives



In a nutshell, Pacific Island women experienced no income convergence *at all* over a 25 year period. Asian women, by contrast, had a very substantial growth and reached, despite a large initial gap, parity with natives after 15 years in the case of university graduates, and after 25 years in the case of school graduates.

Figure 12 gives the age-income profiles for recent 1991-95 female immigrants, again evaluated at the 1996 regression coefficients. As for men, there was a divergent experience between migrants and NESB. While ESB migrants kept their relative position (without improving it, though, as seen for men), the profiles of NESB migrants fell below those of natives. Based on the large entry disadvantage and the past evidence on convergence, it is unlikely that these migrants will reach parity with native women. As for men, the relative decline was fuelled by the experience of recent Pacific Island and Asian immigrants who both developed an increasing income disadvantage, Pacific Island immigrants again without any sign of relative income improvements.

THE EFFECT OF AGE-AT-ARRIVAL

Previous overseas research has suggested that age at arrival may be a significant factor for explaining the relative labour market position of immigrants. One argument is that immigrants who arrive at young ages are more likely to be educated at host country schools, and the skills they learn there are more highly valued in the host country labour market, and overall they are more likely to "look like natives". Translated into relative age-income profiles, this would suggest a smaller initial entry disadvantage combined with smaller subsequent relative income growth for immigrants who arrived at younger ages relative to immigrants who arrived at older ages. Of course, to make this a valid comparison, one has to account for the fact that there tends to be a negative correlation in the sample between age-at-arrival and period of residence.

In order to single out the specific effect of age at arrival on relative incomes, we augment our previous specification by the variable age at arrival (and drop the interaction between adjustment profiles and qualifications for simplicity). Since

age-at-arrival (aaa) + years since migration (ysm) = age,

we are effectively allowing a different age-earnings profile for immigrants and natives. The coefficient on age is identified from native workers. The sum of coefficients on aaa and ysm gives the difference between native and immigrant earnings, comparing a native of a certain age with an immigrant of the same age ($=aaa+ysm$) [91].

[91] Since we allow for a quadratic age polynomial for natives, we include for immigrants (aaa+ysm) and (aaa+ysm)^2. Since our main interest lies in disentangling the separate contributions of aaa and ysm, we effectively include the following set of regressors: aaa, ysm, aaa^2, ysm^2, and aaa*ysm.

Based on our regression results, we compute the entry differential (i.e., ysm=0) of someone arriving at the ages of 15, 25, and 35, respectively, and the relative income position after 10 years of residence for those immigrants (as well as the relative position of an immigrant who arrived ten years earlier at the age of 5). The complete set of regression coefficients is given in Table B8 while the comparisons are summarized in the next Table.

Table 44: Log-Income differential between immigrants and natives of same age, by age-at-arrival and years in New Zealand.

	ALL	ESB	NESB
1. Male results			
Arrival at age 15:	-0.1613	-0.1700	-0.1139
Arrival at age 25:	-0.2586	-0.1843	-0.3143
Arrival at age 35:	-0.2988	-0.1715	-0.4252
Arrival at age 5 after 10 years:	-0.0283	-0.0541	0.0469
Arrival at age 15 after 10 years:	-0.1417	-0.0861	-0.1663
Arrival at age 25 after 10 years:	-0.1980	-0.0910	-0.2900
Arrival at age 35 after 10 years:	-0.1971	-0.0688	-0.3239
2. Female Results			
Arrival at age 15:	-0.0942	-0.0752	-0.0948
Arrival at age 25:	-0.1605	-0.1435	-0.1554
Arrival at age 35:	-0.2081	-0.1876	-0.2064
Arrival at age 5 after 10 years:	-0.0381	-0.0172	-0.0472
Arrival at age 15 after 10 years:	-0.0935	-0.0757	-0.0962
Arrival at age 25 after 10 years:	-0.1303	-0.1101	-0.1356
Arrival at age 35 after 10 years:	-0.1483	-0.1205	-0.1654

Note: 1. Regressions include cohort dummies, period effects, sch, voc, uni hours, age, agesq, aaa, ysm, aaaysm, aaasq and ysmsq.
2. Interactions with qualification levels were not included for simplicity.
3. The differentials are evaluated at the average cohort effect.

The results confirm that age-at-arrival is an important factor. The male entry income disadvantage is 16 percent for a 15 year old, but 30 percent for a 35 year old. Similarly, the relative income of a 15 year old is predicted to increase by 2 percentage points over the next ten years, compared to 10 percent for the 35 year old. As a result, relative incomes of immigrants who arrived at different ages do converge over time. The effect of age-at-arrival is substantially more pronounced for immigrants from non-English speaking countries, which suggests that they have more to gain from an "early" integration.

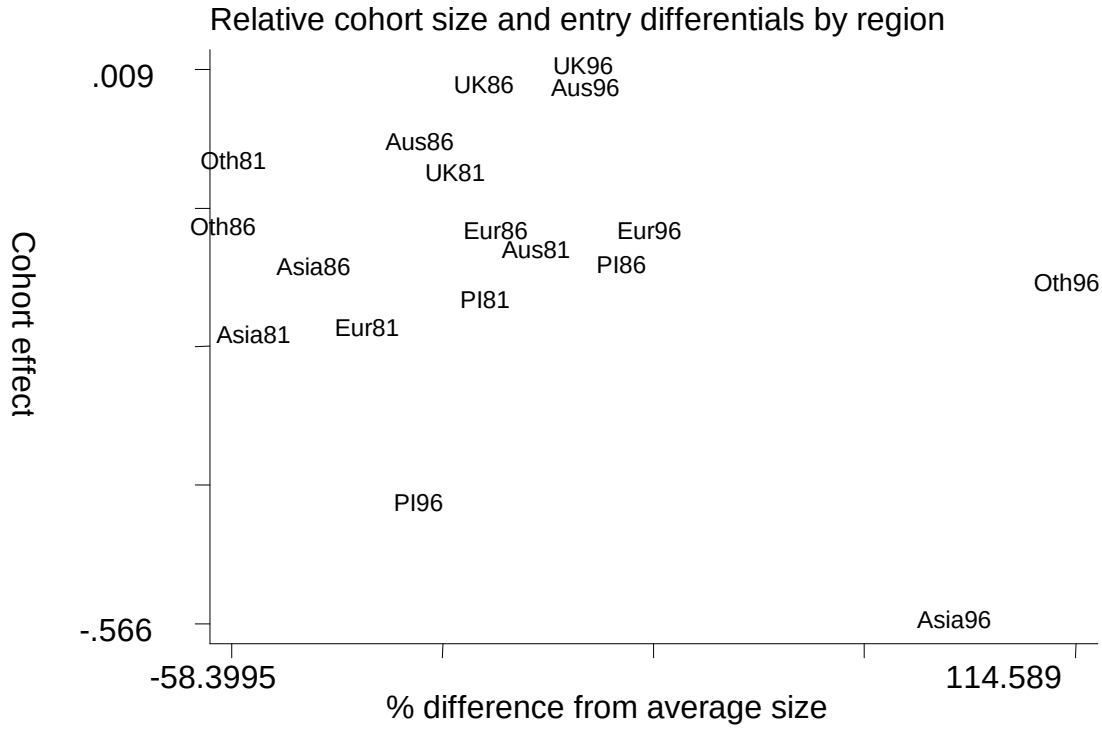
While we do not observe children under the age of 15 directly in our sample of working-age immigrants, we observe them when they become of working age. It turns out that a five year old arrival looks pretty much like a native after 10 years of residence. In the case of male immigrants from non-English speaking countries, the predicted relative income exceeds the income of a 15 year old native by 4 percent. This finding suggest a particular benefit from

arriving in New Zealand as a child. It also suggests the absence of persistent income differentials along the lines of ethnicity or region of origin as the labour market outcomes of immigrant children, once they are adults, are similar to those of natives.

The effect of cohort-size

It has been suggested that the size of an arrival cohort might be negatively related to its relative labour market outcome. For instance, if labour markets are segmented and there is a shortage of jobs, a larger number of immigrant arrivals might ceteris paribus reduce the labour incomes for this cohort. This argument, if correct, could provide a partial explanation for the large income entry differential of the relatively large cohort of recent Asian immigrants in 1996. Also, it has an important policy implication as the immigration intake in each year can be influenced by policy settings.

However, the following Figure shows that there is apparently no direct relation between income differentials after arrival and the cohort size. The figure combines information on the cohort sizes of 76-80 arrivals in the 1981 Census, 81-85 arrivals in the 1986 Census, and 91-95 arrivals in the 1996 Census, by region of origin, with the estimated log-income differentials for those cohorts from Table 39. The cohorts in this Figure only include employed individuals (the same samples that were used to compyute the entry differentials). Sizes are measured relative to the average number of immigrants over the 3 Census years, separately for each region. It is apparent that there was no simple relation ship between relative cohort size and income differential. In particular, there appears to be no negative relationship. The Asian observation point for 1996 is an outlier. Similar results are obtained, if we plot income differentials against the relative cohort sizes of all immigrants (rather than employed immigrants only).



8.7. An extended analysis of the 1996 Census

A number of questions have been left unanswered so far. What does the classification by ESB and NESB capture, English proficiency or some other characteristics such as culture? Does it matter whether immigrants obtained their degree overseas or in New Zealand? Do incomes differ between workers in Auckland and workers in the rest of New Zealand? Is the classification of school qualifications into four categories too crude? Does the field of tertiary study matter? And how important is the occupation of a worker?

In order to shed light on these questions, we take advantage of the fact that the 1996 Census provided more detailed information on several variables than was the case in previous Censuses. The drawback is that with a single cross-section only, we have to give up the pooled regression approach and estimate regression models along the line of Section 8.2. As a separate analysis of cohort effects and income convergence is not possible, and we drop the years since migration variable. With this limitation in mind, we focus on studying the partial effects of the additional explanatory variables, and on their impact on the relative entry disadvantage of the most recent 1991-95 arrival cohort.

Tables 43 and 44 provide some insights into the effects of English proficiency on relative incomes for men and women, respectively. A first regression extends the basic model of Section

8.2. by extending the standard set of variables by a measure of English proficiency (based on the self-assessment question), residence in Auckland or elsewhere, and the presence of a New Zealand degree. This variable was derived by comparing the year in which a tertiary qualification was obtained to the year of arrival in New Zealand. In 1996, 17 percent of immigrants possessed a New Zealand degree.

We find that English proficiency had a large effect on the relative incomes of immigrants. Proficient immigrants' incomes exceeded those of otherwise similar non-proficient male immigrants by 37 percent. The estimated effect was somewhat smaller for female immigrants (26 percent). Whether a degree was obtained in New Zealand or abroad made little difference (3 percent). The income differential between Auckland and the rest of New Zealand for otherwise similar workers was 6 percent.

In order to correctly interpret the large estimated effect of English proficiency on relative incomes we next investigate the possibility that proficiency, through its correlation with country of origin, picks up the differences in unobserved characteristics of immigrants with different countries of birth. The next column of Table 45 includes "Born in an English-speaking country" (i.e., ESB) in addition to actual proficiency. The coefficient on proficiency now measures the specific effect of language proficiency, holding the immigrant's background constant. The coefficient is somewhat reduced in size but remains at about 30 percent large.

Table 45. Effects of English language skills, 1996 Census, male immigrant

	(1)		(2)		(3)		(4)	
	Coef	StdErr	Coef	StdErr	Coef	StdErr	Coef	StdErr
Immigrant Cohort:								
pre60	.001	.009	-.128	.009	-.127	.009	.107	.010
1961-65	-.025	.009	-.165	.010	-.164	.010	.060	.011
1966-70	-.042	.009	-.169	.009	-.168	.009	.061	.010
1971-75	-.050	.007	-.182	.008	-.182	.008	.048	.009
1976-80	-.124	.008	-.242	.008	-.241	.008	.005	.010
1981-85	-.158	.008	-.267	.008	-.267	.008	-.017	.010
1986-90	-.221	.006	-.299	.006	-.299	.006	-.037	.009
1991-95	-.301	.006	-.410	.007	-.409	.007	-.160	.009
Hours	.013	.000	.012	.000	.012	.000	.012	.000
Age	.128	.001	.131	.001	.131	.001	.132	.001
Age squared /100	-.001	.000	-.001	.000	-.001	.000	-.001	.000
New Zealand degree	.025	.006	.031	.006	.031	.006	.034	.006
Auckland	.064	.004	.091	.004	.091	.004	.091	.004
Highest qualification								
School qual.	.152	.005	.132	.005	.131	.005	.136	.005
Vocational qual.	.252	.006	.211	.006	.211	.006	.212	.006
University qual.	.570	.007	.538	.006	.538	.006	.555	.007
Proficient in English	.370	.010	.298	.010	.305	.010	.277	.010
ESB			.212	.004	.435	.059		
Proficient * ESB					-.224	.060		
Australia							-.006	.008
Europe & Nth America							-.101	.007
Pacific Islands							-.229	.008
Asia							-.319	.008
Other							-.062	.009
(UK and Ireland as reference)								
Constant	6.420	.022	6.460	.022	6.452	.022	6.471	.022
Number of observations	116326		116326		116326		116326	
R-squared	0.3512		0.3613		0.3613		0.3637	

In addition, ESB has an independent effect of 21 percent. The ESB coefficient picks up effects that are unrelated to actual proficiency but rather reflect differences in other performance factors that are associated with country-of-birth. Those other factors might include cultural characteristics, differences in educational quality, "Western" style education, differences in linkages to the New Zealand labour market, and other characteristics that aid or hinder labour market integration. Are the effects of proficiency and ESB cumulative? The next column of Table 45 includes an interactive term for those immigrants who are both proficient and have ESB. The interactive term is negative, indicating that the returns to proficiency are larger for NESB migrants than for ESB migrants, or equivalently, that the returns to being an ESB are larger for non-proficient migrants than for proficient migrants. Hence, proficiency and ESB status have some degree of substitutability. Overall, proficient ESB migrants are predicted to have incomes that exceed those of non proficient NESB migrants by more than 50 percent.

The fourth column of Tables 45 and 46 replaces the ESB dummy by a full set of region-of-origin dummies. The region "UK and Ireland" is the omitted reference group. For instance, the

coefficient of -0.32 for Asia indicates that Asian immigrants have predicted incomes that are 32 percent below those of otherwise similar UK&Irish immigrants. In order to compare Asian immigrants with natives, one has to add the cohort effect to the region specific effect. Based on this measure, the Asian immigrant arriving between 1991 and 1995 had an income disadvantage of -48 percent in 1996 relative to similar natives. Controlling for region of origin rather than ESB status has no substantial effect on the English proficiency coefficient, with an estimated 28 percent difference in incomes between otherwise similar proficient and non-proficient male workers (21 percent for female workers).

Table 46. Effects of English language skills, 1996 Census, female immigrants

	(1)		(2)		(3)		(4)	
	Coef	StdErr	Coef	StdErr	Coef	StdErr	Coef	StdErr
Immigrant Cohort:								
pre60	.029	.010	-.025	.011	-.024	.011	.094	.012
1961-65	-.020	.011	-.077	.011	-.076	.011	.036	.012
1966-70	-.016	.010	-.068	.011	-.068	.011	.045	.012
1971-75	-.027	.008	-.081	.009	-.081	.009	.033	.010
1976-80	-.124	.009	-.172	.010	-.171	.010	-.042	.011
1981-85	-.143	.009	-.190	.009	-.189	.009	-.053	.011
1986-90	-.172	.007	-.207	.007	-.207	.007	-.060	.010
1991-95	-.326	.007	-.372	.008	-.371	.008	-.230	.010
Hours	.020	.000	.020	.000	.020	.000	.020	.000
Age	.080	.001	.081	.001	.081	.001	.081	.001
Age squared /100	-.000	.000	-.000	.000	-.000	.000	-.000	.000
New Zealand degree	.043	.007	.047	.007	.048	.007	.047	.007
Auckland	.097	.004	.109	.004	.109	.004	.107	.004
Highest qualification								
School qual.	.166	.006	.156	.006	.156	.006	.158	.006
Vocational qual.	.261	.007	.246	.007	.246	.007	.247	.007
University qual.	.502	.008	.484	.008	.484	.008	.499	.008
Proficient in English	.256	.012	.225	.012	.231	.012	.208	.012
ESB			.084	.005	.227	.060		
Proficient * ESB					-.144	.061		
Australia							-.017	.009
Europe & Nth America							-.082	.009
Pacific Islands							-.109	.009
Asia							-.184	.009
Other							-.065	.011
(UK and Ireland as reference)								
Constant	6.941	.025	6.968	.025	6.962	.025	6.967	.025
Number of observations	97382		97382		97382		97382	
R-squared	0.3177		0.3193		0.3193		0.3212	

While English proficiency is certainly important at the individual level, there is another question, namely whether proficiency can partially explain the decline in the performance of the latest arrival cohort. If Model (1) in Table 45 is re-estimated without the proficiency variable, the 1991-95 cohort effect increases in absolute value to 33 percent (full regression output not shown). Hence, proficiency explains about 10 percent of the cohort effect. However, one can also follow a different interpretation. Ideally, the cohort effect measures the income differential

in 1996 for a particular immigrant cohort relative to *similar* natives. However, natives are virtually 100 percent proficient. Hence, a more meaningful comparison would distinguish between proficient and non-proficient cohort members. Using this approach, we find that, the 1991-95 male cohort effect was -30 percent for those non-proficient in English, but + 7 percent for those who were proficient. In this sense, English proficiency matters a lot.

It certainly is both possible and plausible that a lower proficiency rate of 1996 recent immigrants, relative to previous cohorts immediately after arrival, contributed partially to the decline their relative labour market outcomes. However, we have no way of empirically validating this possibility, as the proficiency question was only asked once in the 1996 Census.

An a next set of regressions we look at a more detailed classification of school qualifications, add the field of tertiary study, and control for the occupation of a worker. The first column of Table 47 adds the field in which a tertiary qualification was obtained. The 13 categories range from Maori and Business Administration to Miscellaneous Fields. The fields are exhaustive, i.e., every worker with a tertiary qualification (vocational or university) is allocated to one of the fields. As a consequence, one has now to add the effect of the field to the effect of a qualification in order to obtain the overall returns that accrue to the holder of a tertiary qualification in a specific field. The second regression replaces the crude qualification roster by a finer one that distinguishes, for instance, between four different levels of vocational qualifications (basic, skilled, intermediate, advanced) and between Bachelor and post-graduate degrees.[92] A third regression adds a set of occupation related indicator variables, based on the first digit of the 1968 New Zealand occupational classification.

The overall return to a university qualification was estimated at 57 percent. However, as the first column of Table 47 shows, these returns varied substantially by field. At the lower end were Maori studies and Agriculture, Forestry and Fishing, with 20 and 38 percent, respectively. At the higher end of the spectrum were Health, Computing and Information Technology and Business Administration with 86, 71 and 71 percent, respectively. Column 2 shows that the male returns to a basic vocational qualification differed from those of an advanced vocational qualification by 15 percentage points. The jump between the advanced

[92] These labels are provided by Statistics New Zealand. Their usage of the word "skilled" (relative to basic, intermediate, and advanced) is not directly compatible with our usage, nor with that common in the labour economics literature.

vocational qualification and a Bachelor degree was 12 percentage points, while a post-graduate qualification added another 20 percentage points. The inclusion of occupational dummies in Column 3 tended to reduce the estimated returns to qualifications since there was a positive correlation between tertiary qualifications and high-income occupations.

Table 47. Extended regression results for 1996 Census, male immigrants and natives

	(1) Coef.	StdErr	(2) Coef.	StdErr	(3) Coef.	StdErr
Immigrant Cohort:						
pre60	.0104*	.0090	.0170*	.0094	.0116*	.0090
1961-65	-.0158*	.0098	-.0071*	.0102	-.0110*	.0098
1966-70	-.0342	.0093	-.0238	.0097	-.0266	.0094
1971-75	-.0456	.0075	-.0401	.0078	-.0440	.0076
1976-80	-.1228	.0085	-.1215	.0090	-.1194	.0086
1981-85	-.1580	.0083	-.1575	.0088	-.1501	.0084
1986-90	-.2270	.0067	-.2300	.0072	-.2155	.0069
1991-95	-.3084	.0068	-.3228	.0075	-.3142	.0072
Hours	.0131	.0001	.0131	.0001	.0129	.0001
Age	.1275	.0010	.1269	.0011	.1159	.0011
Age squared /100	-.0013	.0000	-.0013	.0000	-.0012	.0000
English speaker	.3600	.0104	.3469	.0109	.2888	.0106
New Zealand degree	-.0010*	.0069	-.0197	.0074	-.0293	.0071
Auckland	.0610	.0041	.0615	.0042	.0373	.0041
Highest qualification						
School qual.	.1535	.0056				
Vocational qual.	.1697	.0090				
University qual.	.4592	.0107				
Sixth form qual.			.0700	.0104	.0317	.0100
Higher school qual.			-.0011*	.0120	-.0483	.0116
Basic vocational qual.			.0605	.0167	.0242*	.0160
Skilled vocational qual.			.0812	.0150	.0672	.0144
Intermediate voc. qual.			.1284	.0183	.0627	.0177
Advanced voc. qual.			.2129	.0156	.0838	.0151
Bachelor degree			.3349	.0150	.1744	.0146
Higher degree			.5324	.0161	.3282	.0158
Overseas qual.			.0073*	.0100	-.0133*	.0097
No qualification			-.1305	.0085	-.0877	.0082
(School certificate is reference)						
Field of study:						
Maori	-.2611	.1085	-.3834	.1123	-.3496	.1077
Business and Adminstration	.2483	.0116	.1785	.0142	.1497	.0138
Health	.4007	.0148	.2771	.0172	.1903	.0167
Education	-.0398	.0159	-.1504	.0181	-.1355	.0178
Social Sciences & Humanities	-.0315	.0144	-.1270	.0164	-.1023	.0159
Science	.0724	.0142	-.0374	.0163	-.0559	.0157
Engineering & Technology	.1259	.0096	.0636	.0128	.0115*	.0124
Architecture & Construction	.0396	.0129	-.0085*	.0162	-.0011*	.0156
Agriculture, For. & Fish.	-.0793	.0161	-.1702	.0187	-.0181*	.0182
Computing & Inf. Technology	.2506	.0186	.1656	.0208	.0986	.0200
Manufacturing	.0916	.0161	.0333*	.0200	.0353*	.0192
Arts & Craft	-.0602	.0241	-.1742	.0272	-.1683	.0263
Miscellaneous Fields	.1311	.0133	.0941	.0165	.1356	.0159
Occupation (1-digit 1968 ISCO)						
Accountants, Teachers, Artists					-.1562	.0094
Administrators & Managers					.0814	.0090
Clerical workers					-.2795	.0099
Sales workers					-.4013	.0088
Service workers					-.5608	.0095
Agriculture & related workers					-.6216	.0101
Production workers 1					-.3025	.0109
Production workers 2					-.3281	.0091
Production workers 3					-.4313	.0084
Constant	6.4430	.022	6.6061	.0247	7.2691	.0253
Number of observations	116326		104875		104253	
R-squared	0.3607		0.3832		0.4322	

Table 48. Regression results for 1996 Census, female immigrants and natives

	(1) Coef.	StdErr	(2) Coef.	StdErr	(3) Coef.	StdErr
Immigrant Cohort:						
pre60	.0348	.0105	.0326	.0108	.0383	.0104

1961-65	-.0190* .0110	-.0061* .0115	.0038* .0111
1966-70	-.0147* .0104	.0004* .0109	.0125* .0105
1971-75	-.0237 .0084	-.0073* .0089	.0045* .0085
1976-80	-.1222 .0095	-.1050 .0100	-.0754 .0097
1981-85	-.1429 .0091	-.1281 .0096	-.0942 .0093
1986-90	-.1744 .0075	-.1595 .0081	-.1186 .0078
1991-95	-.3273 .0077	-.3191 .0086	-.2819 .0083
Hours	.0207 .0001	.0207 .0001	.0200 .0001
Age	.0794 .0012	.0795 .0013	.0699 .0012
Age squared /100	-.0008 .0000	-.0008 .0000	-.0007 .0000
English speaker	.2484 .0121	.2462 .0127	.1739 .0124
New Zealand degree	.0319 .0079	.0228 .0084	-.0042* .0081
Auckland	.0982 .0046	.0961 .0048	.0732 .0046
Highest qualification			
School qual.	.1669 .0063		
Vocational qual.	.1555 .0112		
University qual.	.4131 .0129		
Sixth form qual.		.0817 .0106	.0478 .0102
Higher school qual.		-.0401 .0132	-.0584 .0127
Basic vocational qual.		-.0369* .0190	-.0328* .0183
Skilled vocational qual.		-.0019* .0198	-.0098* .0191
Intermediate voc. qual.		.0919 .0330	.0502* .0318
Advanced voc. qual.		.1512 .0178	.0599 .0173
Bachelor degree		.2482 .0176	.1398 .0172
Higher degree		.4432 .0193	.2979 .0189
Overseas qual.		-.0140* .0101	-.0078* .0098
No qualification		-.1568 .0090	-.0716 .0088
(School certificate is reference)			
Field of study:			
Maori	.1163* .1059	.1096* .1092	.1370* .1051
Business and Adminstration	.1902 .0126	.1727 .0170	.1356 .0164
Health	.2182 .0124	.1236 .0168	.0064* .0167
Education	.0349 .0130	-.0604 .0171	-.0545 .0168
Social Sciences & Humanities	.0471 .0152	-.0195* .0184	-.0178* .0178
Science	.1169 .0179	.0364* .0208	-.0186* .0201
Engineering & Technology	.0639 .0302	.0364* .0334	-.0103* .0323
Architecture & Construction	.0732 .0349	.0214* .0381	-.0414* .0367
Agriculture, For. & Fish.	-.0743 .0319	-.1685 .0348	-.0629* .0337
Computing & Inf. Technology	.2433 .0254	.2141 .0288	.1363 .0278
Manufacturing	-.0128* .0346	.0350* .0456	.0692* .0440
Arts & Craft	-.0671 .0213	-.1408 .0253	-.1249 .0245
Miscellaneous Fields	.0691 .0152	.0579 .0198	.1078 .0191
Occupation (1-digit 1968 ISCO)			
Accountants, Teachers, Artists			-.1961 .0108
Administrators & Managers			.0622 .0139
Clerical workers			-.2315 .0101
Sales workers			-.4739 .0111
Service workers			-.5995 .0106
Agriculture & related workers			-.5963 .0135
Production workers 1			-.4912 .0141
Production workers 2			-.3818 .0213
Production workers 3			-.4900 .0127
Constant	6.9664 .0257	7.1138 .0283	7.7549 .0293
Number of observations	97382	88452	87974
R-squared	0.3228	0.3409	0.3886

Table 48 gives the results for females. Interestingly, the income distribution over tertiary study fields was substantially more compressed for women than for men (i.e., more equal). The difference between the top and bottom fields, based on the second column, was 66 percentage points for men, but only 32 percentage points for women.

The list of top fields was similar for men and women, except that for women health qualifications were topped by Computing, likely, because there was a higher proportion of nursing rather than medical qualification among women with a health qualification.

WHAT CAUSED THE DECLINE IN THE PERFORMANCE OF THE LATEST ARRIVAL COHORT?

Throughout Section 8 we have found evidence for a systematic difference between the cohort of immigrants who arrived between 1991 and 1995, and previous cohorts. Basic differences in age and education were not able to explain the large income gap between recent immigrants and similar natives. Nor was an extended set of regressors that included English proficiency, country in which a qualification was obtained, location of residence, field of study and occupation; the entry disadvantage of this particular cohort remained, on average, at about 30 percent. Recent 1996 immigrants did not worse because they happened to be in the "wrong" occupation, or happened to have studied the "wrong" subject. Nor did they poorly because they didn't have time yet to pick up the language. While speaking English is important for the individual immigrant, raising expected incomes by about 30 percent, it fails to be an important explanatory variable at the aggregate cohort level. In the absence of other explanations, one has to conclude that either the unmeasured characteristics of the most recent immigrant cohort, or the returns to those unmeasured characteristics, have changed.

1 In the aggregate, it is clear that a change in the region-of-origin mix of recent immigrants towards Asian and Pacific Island immigrants had such an effect. However, there is also ample evidence that the residual gap has increased *within* the Asian and Pacific Island communities. One question that arises in this context is whether whether the decline in the relative labour market outcomes of Asian and Pacific Island immigrants was in turn associated with shifts in the country-of-origin mix of the migrant inflows from those regions.

Considering the case of Asia, there appears to be some empirical support for this hypothesis. There was an increase in the share of immigrants coming from North Asian nations in the 1990s. Migrants from those countries had relatively low employment rates and incomes in 1996. Consider the following decomposition exercise: There were 14 Asian origin countries with at least 1000 immigrants in one of the Census years. Table 49 gives the adjusted income differentials for recent immigrants from each country in both 1986 and 1996. As previously, the adjustment controls for age, age squared, qualification and gender. x gives the number of immigrants from a specific country as a proportion of all recent Asian immigrants.

Table 49. Adjusted income differentials for recent Asian immigrants, 1996, by country.

	1986			1996		
	coeff	std.err	x	coeff	std.err	x
Kampuchea	-.089	.026	.180	-.239	.060	.012
Indonesia	-.205	.067	.031	-.445	.057	.014
Malaysia	-.361	.038	.086	-.437	.026	.065
Phillipines	-.449	.037	.091	-.551	.023	.076
Singapore	-.189	.057	.038	-.285	.051	.015
Thailand	-.202	.103	.012	-.421	.048	.024
Vietnam	-.114	.037	.085	-.390	.054	.016
China	-.256	.033	.122	-.721	.014	.209
Hong Kong	-.222	.047	.056	-.476	.022	.083
Japan	.208	.033	.113	-.197	.022	.104
Korea	-.922	.059	.040	-.732	.017	.167
Taiwan	-.034	.151	.005	-.652	.030	.057
India	-.253	.033	.111	-.500	.019	.113
Sri Lanka	-.055	.067	.025	-.386	.031	.039

2

Using these regression results, two decompositions of the change in the overall recent Asian-native income differential are possible. The overall change in the differential is given by

$coeff_{96}*x_{96} - coeff_{86}*x_{86} = -.545 - (-.201) = -.344$

How much of that is dues to changes in composition, and how much due to changes in differentials? We can rewrite

$coeff_{96}*x_{96} - coeff_{86}*x_{86} = coeff_{96}*(x_{96}- x_{86}) + x_{86}*(coeff_{96} - coeff_{96})$

The first term give the effect due to a change in composition, evaluated at the1996 differential. With the above numbers, $coeff_{96}*x_{86} = -.431$. Hence, the change in composition explains an increase in the (recent) Asian income differential of .114 percentage points, or about one third of the actual increase. Alternatively, we could evaluate the change in composition using the 1986 differentials. With $coeff_{86}*x_{96} = -.310$ we find that .109 percentage points of the actual change, or again about one third, are explained by compositional effects.

3 The other two-thirds of the increase was caused by increases in the entry income differentials for recent immigrants from specific countries. Note that the income differentials of recent immigrants (adjusted for native-immigrant demographic differences, and partially adjusted for level of economic activity) increased for *every* Asian country, with the exception of Korea. Yet the rank order of Asian nations, ordered in terms of size of the income differentials,

did not change all that much. Thus, the influence of unmeasured or uncontrolled country-specific factors on labour market outcomes had some important persistent components.

8.8. Participation and Employment Logit Models

Income is only one among several indicators of relative labour market performance. While income is an important indicator, and a frequently used one, it is likely to understate the true gap between native and immigrant performance since it looks only at immigrants who have passed already a big hurdle in the integration process, namely to find a job. But employed immigrants are likely to be positively selected.

Therefore, we now spend some time to analyse the relative participation and employment rates of immigrants in a multivariate framework. The analysis is very similar to the previous pooled regression approach, except that the modelling of labour force status has to be conducted within a binary choice framework. The four possibilities, full-time, part-time, unemployed, non-participation, are viewed as a 2-stage decision process. Firstly, we model participation versus non-participation. Secondly, for participants only, we model employment versus unemployment. No allowance is made to distinguish between full-time and part-time work.

The most widely used econometric approach in situations where the dependent variable is a binary 0/1 variable is the logit model. As before, we consider a linear expression of the type

$$x_{\mathrm{it}} = \mathrm{X}_{\mathrm{it}} b + \sum_{k=1}^{8} h_k C_k + dYSM + fYSM^2 + gYEAR86 + lYEAR96$$

In the logit model, we model the probability that the outcome takes the value 1 (i.e., that a working age individual participates, or that a participant is employed) as

$$P(y_{\mathrm{it}} = 1) = \frac{\mathrm{e}^{x_{\mathrm{it}}}}{1 + e^{x_{\mathrm{it}}}}$$

The functional form ensures that the expression on the right is between 0 and 1 (as a probability should) for all possible values of x_{it}. The model parameters are estimated by the method of maximum likelihood (See Greene, 1995). Our specification is a slight modification

of the full model (with Census year interactions and differential intercept and assimilation effects for immigrants with different qualification levels) of the previous section. The modification relates to a changes set of control variables X. We drop the hours variable which is meaningless in the present context, and include three dummy indicator variable that describe aspects of the current family status. These are: living with a partner, sole parenthood, and joint parenthood. Parenthood is defined in relation to dependent (i.e. non adult) children living at home. The reference category is a single non-parent for whom all three dummy variables would be set to zero. A total of 32 regressions were estimated for participation and employment, by gender, and by English language status and region-of-origin.

8.9. Logit Results

As for the income results, we start with a comparison of adjusted and unadjusted participation and employment differentials between immigrants and natives. Tables 47 and 48 lists those differentials for male and female immigrants, respectively, by cohort, Census year and ESB/NESB. Differentials are expressed as percentage point differences in immigrant/native rates. The computation of these differentials is not as straightforward in the logit model as it is in the linear model. Technically, we first estimated a logit model with age, education, and family variables as regressors. Then, we computed the predicted probability of participation and employment for each individual in the sample, based on the actual characteristics. Finally, we compared the average predicted probabilities of the various immigrant cohorts with those of natives.

Table 50: Unadjusted and Adjusted Male Immigrant/Native Differences in Labour Force Participation Rates and Employment Rates, by Census Year (in percentage points).

	1981		1986		1996	
	unadj.	adj.	unadj.	adj.	unadj.	adj.
1. Participation						
All						
Pre-1960	.036	-.018	-.022	-.057	-.107	-.104
1961-65	.033	.019	.048	.004	-.031	-.036
1966-70	.006	.027	.018	.017	.001	-.009
1971-75	.025	.033	.011	.032	.004	-.007
1976-80	-.041	.015	.013	.031	-.006	-.013
1981-85			-.060	.011	-.034	-.045
1986-90					-.056	-.069
1991-95					-.219	-.203
English Speaking Migrants						
Pre-1960	.030	-.023	-.030	-.065	-.094	-.092
1961-65	.028	.012	.044	-.001	-.006	-.008
1966-70	-.002	.020	.007	.012	.027	.017
1971-75	.024	.032	.001	.037	.038	.029
1976-80	.025	.022	.021	.037	.018	.017
1981-85			.003	.024	-.011	-.020
1986-90					.030	.016
1991-95					-.016	-.003
Non English Speaking Migrants						
Pre-1960	.046	-.008	-.007	-.043	-.125	-.121
1961-65	.041	.029	.055	.013	-.068	-.075
1966-70	.015	.034	.030	.022	-.027	-.037
1971-75	.025	.035	.021	.027	-.033	-.042
1976-80	-.101	.007	.007	.026	-.027	-.036
1981-85			-.108	-.006	-.050	-.061
1986-90					-.080	-.094
1991-95					-.293	-.279
2. Employment						
All						
Pre-1960	.015	-.001	.028	-.002	.026	.026
1961-65	-.003	-.007	.018	-.003	.016	.017
1966-70	-.012	-.014	-.005	-.007	.006	.009
1971-75	-.019	-.023	-.010	-.012	-.006	-.007
1976-80	-.028	-.025	-.011	-.018	-.028	-.027
1981-85			-.025	-.025	-.038	-.048
1986-90					-.056	-.069
1991-95					-.173	-.226
English Speaking Migrants						
Pre-1960	.019	.002	.030	-.001	.036	.037
1961-65	.005	.001	.020	-.002	.034	.038
1966-70	-.001	-.002	.001	0	.028	.033
1971-75	.005	-.002	-.002	.002	.025	.031
1976-80	-.008	-.010	.004	-.003	-.001	.007
1981-85			.005	-.010	.002	-.010
1986-90					.017	.012
1991-95					.004	-.014
Non English Speaking Migrants						
Pre-1960	.009	-.007	.025	-.004	.011	.013
1961-65	-.015	-.019	.014	-.005	-.012	-.011
1966-70	-.023	-.027	-.012	-.014	-.019	-.016
1971-75	-.042	-.045	-.017	-.024	-.041	-.045
1976-80	-.050	-.046	-.021	-.026	-.051	-.053
1981-85			-.050	-.044	-.066	-.074
1986-90					-.080	-.094
1991-95					-.269	-.332

Table 50 reveals quite important differences between the participation and employment results. In particular, differences in observable characteristics can explain practically the entire difference in participation rates between recent immigrants and natives in both 1981 and 1986. For instance, the 10 percentage points difference in participation rates between recent immigrants from non-English speaking countries and natives is fully explained by differences in characteristics. Although not apparent from these tabulations, the biggest factor is here the relative youthfulness of recent immigrants. By contrast, our models fail to explain the widening

participation gap in 1996, or the differences in employment rates between immigrants and natives. As for income, the adjusted employment differentials tended to be even larger than the unadjusted ones.

For female immigrants, the models explained even less of the observed immigrant/native participation and employment differentials. Recent immigrants in particular had lower participation and employment rates than natives at all time. As for men, the adjusted employment differences tended to be larger than the unadjusted ones.

Table 51: Unadjusted and Adjusted Female Immigrant/Native Differences in Labour Force Participation and Employment Rates, by Census Year (in percentage points).

	1981		1986		1996	
	unadj.	adj.	unadj.	adj.	unadj.	adj.
			1. Participation			
All						
Pre-1960	.007	.027	-.070	-.042	-.132	-.118
1961-65	.082	.101	.059	.066	-.055	-.051
1966-70	.030	.063	.050	.061	-.010	-.011
1971-75	.012	.032	.027	.047	.012	.007
1976-80	-.036	-.045	-.020	-.014	.004	-.001
1981-85			-.098	-.080	-.029	-.031
1986-90					-.074	-.075
1991-95					-.239	-.223
English Speaking Migrants						
Pre-1960	.027	.003	-.083	-.058	-.119	-.104
1961-65	.084	.095	.053	.056	-.034	-.032
1966-70	.033	.065	.053	.062	.022	.019
1971-75	.026	.051	.051	.076	.051	.042
1976-80	.001	-.027	-.011	0	.057	.051
1981-85			-.055	-.054	.025	.019
1986-90					.022	.014
1991-95					-.048	-.054
Non English Speaking Migrants						
Pre-1960	.029	.071	-.047	-.013	-.151	-.139
1961-65	.078	.109	.069	.081	-.086	-.077
1966-70	.026	.060	.045	.059	-.045	-.044
1971-75	-.003	.009	.002	.016	-.031	-.031
1976-80	-.074	-.068	-.027	-.026	-.039	-.041
1981-85			-.135	-.115	-.066	-.066
1986-90					-.107	-.107
1991-95					-.310	-.288

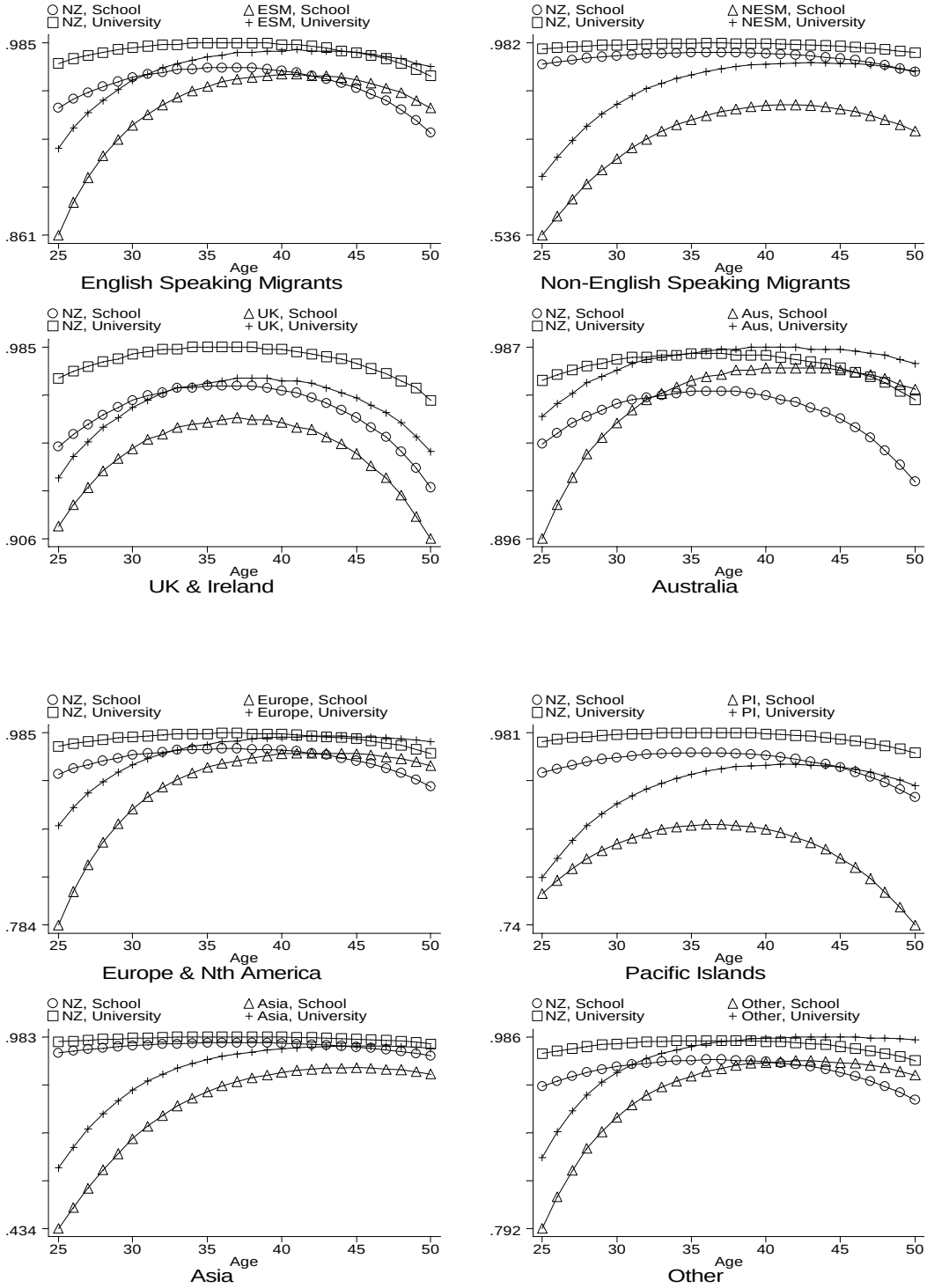
	2. Employment					
All						
Pre-1960	.033	.003	.042	.029	.049	.058
1961-65	.017	-.003	.036	.016	.040	.042
1966-70	.005	-.006	.011	.007	.026	.028
1971-75	-.002	-.012	-.010	-.011	.008	.002
1976-80	-.048	-.046	-.019	-.024	-.023	-.019
1981-85			-.051	-.053	-.044	-.051
1986-90					-.064	-.072
1991-95					-.190	-.235
English Speaking Migrants						
Pre-1960	.033	.004	.042	.030	.059	.070
1961-65	.021	.001	.037	.016	.057	.062
1966-70	.010	-.004	.019	.018	.050	.054
1971-75	.015	-.001	-.001	.006	.042	.044
1976-80	-.029	-.035	.001	0	.010	.025
1981-85			-.013	-.026	.011	.013
1986-90					.016	.014
1991-95					-.026	-.040
Non English Speaking Migrants						
Pre-1960	.032	0	.042	.027	.032	.040
1961-65	.010	-.007	.034	.016	.013	.011
1966-70	-.001	-.009	.001	-.007	-.004	-.001
1971-75	-.019	-.025	-.021	-.033	-.034	-.046
1976-80	-.071	-.059	-.035	-.046	-.054	-.057
1981-85			-.087	-.093	-.088	-.099
1986-90					-.098	-.107
1991-95					-.287	-.336

The direct interpretation of the parameters is somewhat more complicated in the logit model than in the linear regression model. One possible interpretation makes use of odds-ratios. They can be directly derived from the logit output and have a clear interpretation: e^{β} is the odds ratio in favour of the "1" outcome (participation or employment, respectively) as the value of the independent variable increases by one unit.[93] By way of example, assume that male and female employment rates are 80 and 50 percent, respectively. The male odds (in favour of employment) are then 80:20=4 and the female odds are 50:50 =1; Hence, the male/female odds ratio is 4, and the estimated coefficient in an logit model with a male indicator variable only would be log(4) = 1.39 (Hypothesis for statistical significance are cast against the null hypothesis of "no effect" which is an odds ratio of one). A complete set of odds ratios is provided in Tables B4-B7 in the appendix.

For instance, we find in Table B4 that the odds for participation of a recent male English speaking migrant relative to the odds for participation of a male native were estimated at 0.5. The estimated employment odds ratio for the same group of people was 0.8 (see Table B5). These odds ratios can be compared for the different cohorts in order to establish whether or not the odds ratios changes over successive cohorts. We find, consistently with our previous results on income, that the odds ratios between recent immigrants and natives increased over time for both participation and employment among English speakers.

[93] e^{β}-1 gives the percentage change in the odds.

Figure 13. Projected Age-Participation Profiles, 1991-95 Male Immigrants and Natives



In fact, we cannot reject the null-hypothesis of no entry disadvantage in employment rates for the most recent 1991-95 cohort (The odds ratio is not significantly different from one). For Non-English speakers we find substantially lower odds ratios, in particular for employment. The decline in the relative entry position is recent.

While the 1986-90 NESB migrant cohort did well judged by historical levels, the 1991-95 NESB migrant cohort had much a lower participation odds ratio than previous cohorts. The employment odds ratio, however, was still higher than those of pre-1980 cohorts.

The major problem with the odds approach is that some readers may not be used to think in "odds-ratios" and hence might find it difficult to grasp the magnitude of the effects. Furthermore, as before, this approach becomes cumbersome and even uninformative once we include a variety of interactions. As an alternative, we focus here on simulated age-participation and age-employment profiles that show how the probabilities change over the life cycle for immigrants aged 25 on arrival and similarly aged natives. These profiles generally vary as a function of highest qualification and parental status. They also vary as a function of the time benchmark.

Figures 13-16 plot the profiles for recent immigrants in 1996, using the 1991-95 cohort estimate and the 1996 parameter values in order to predict the expected future progress for the most recent immigrants.[94] The profiles are drawn for a joint parent (i.e., a parent who lives together with a partner) with either university or school qualification. The left axis literally gives the probability that a randomly selected person with certain characteristics (e.g., native, aged 35, with university qualification) is employed or participates. Differences between two profiles can be interpreted as the marginal effect (measured in percentage points) of a variable, either university qualification versus school qualification, or native versus immigrant, on the employment or participation probability *given that everything else is held constant.*

Some caution has to be exercised in reading the figures since the scale of the left axis varies from panel to panel. Hence, the first visual impression without consultation of the scale might give the misleading impression that profiles look quite similar for all regions-of-origin, when they truly aren't since the left axis may cover a range of .8 to .9 in one panel, but .4 to .9 in another.

MALE PARTICIPATION RESULTS

With these remarks in mind we first analyse the predicted age-participation profiles of 1991-95 male immigrants. We find that a 25 year old native with a university qualification had a

[94] As was the case for income, the patterns for earlier cohorts look similar, although the predicted intial gap is smaller in general. Also, the substantive findings regarding the entry differentials and growth rates of the different regional groups are not substantially changed, if a different starting age is picked.

predicted participation probability of 97 percent. The participation probability of a similar migrant was 92 percent for English speakers but only 67 percent for non-English speakers. As individuals age, participation rates are predicted to increase up to the age of 40 - 45, and to decrease thereafter. Such concave profiles are observed for all groups. The increases in participation rates are generally faster for foreign-born men, leading to convergence in participation rates. For English speaking migrants, parity with native participation rates is reached after about 20 years. Non-English speaking migrants, by contrast, are predicted to have permanently lower participation rates, and the gap never falls below 4 percentage points for university graduates and 12 percentage points for school graduates.

Generally speaking, participation rates of university graduates are always above those of school graduates, and the difference tends to be larger for migrant men than for native men. The largest initial relative participation gap is predicted for Asian immigrants (about 50 percentage points for school graduates and 36 percentage points for university graduates). However, they also have very fast growth rates and after 15 years the gap for university graduates is predicted to narrow down to 3 percentage points, while the gap for school graduates is predicted to narrow down to 8 percentage points. A picture of very slow, if any, convergence emerges for Pacific Island immigrants, corroborating the previous findings for income. A Pacific Island immigrants with school qualification is actually predicted to "diverge", from a 15 percentage point gap at the age of 25 to a 16 percentage point gap at the age of 50. University graduates increase their labour market attachment relative to natives but the predicted gap after 25 years of residence is at 4 percentage points larger than that predicted for Asian immigrants (1 percentage point).

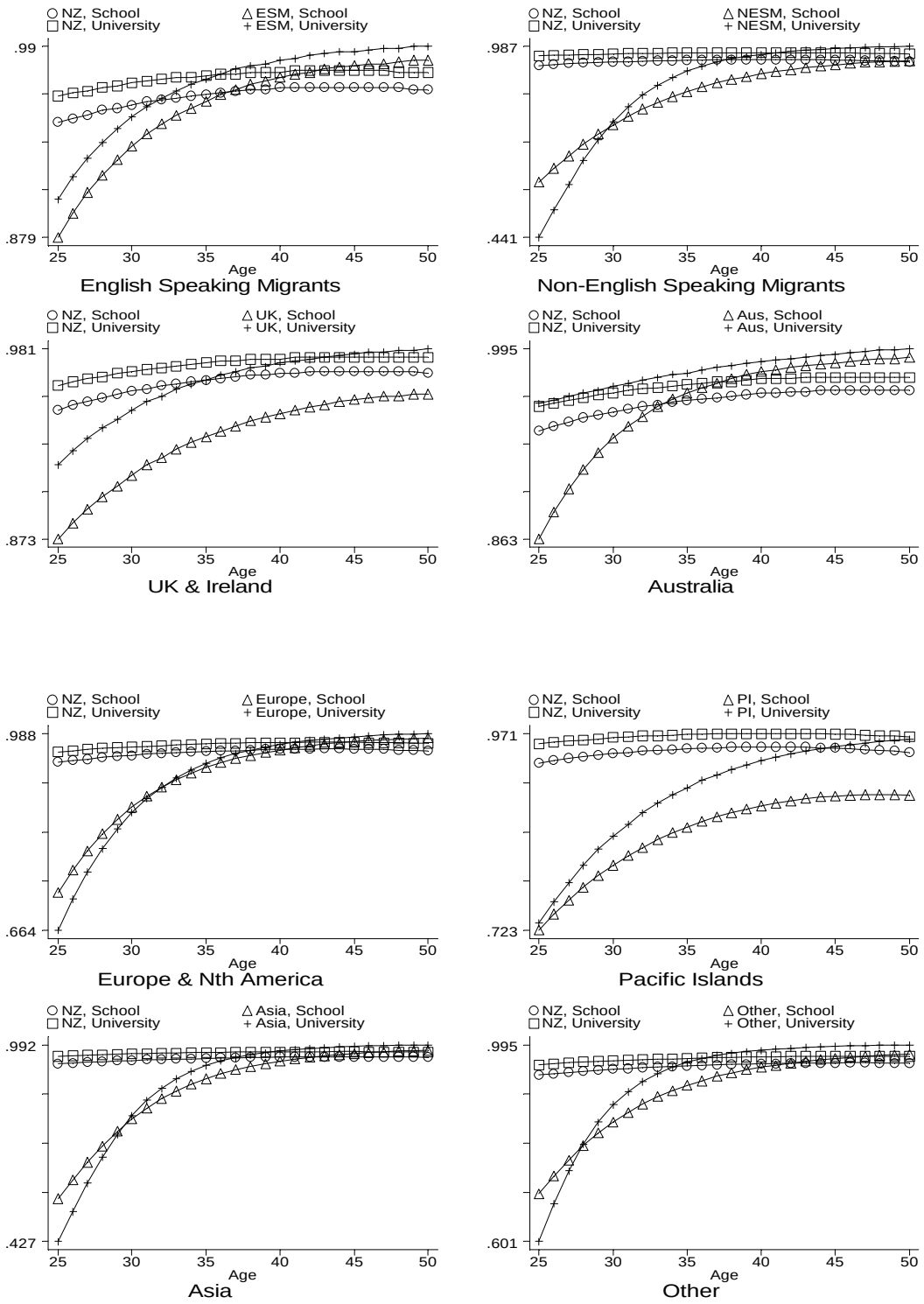
Male Employment Results

The estimated male age-employment profiles are shown in Figure 14. Recall that employment rates are modelled here conditional on participation. Therefore, the "employment rates" are not directly comparable to the employment/population rates given in the descriptive section of this report. Also, note that in this definition, the estimated unemployment rates are computed as 1 – estimated employment rate.

As for participation, employment rates are higher for more highly qualified individuals. The native employment rates of a 25 year old are predicted to be 95 and 96 percent for participating school and university graduates, respectively. Unemployment rates are estimated as 5 and 4 percent, respectively. While unemployment tends to be somewhat higher for younger

participants, the age differences are small. Migrant employment rates were typically below those of natives when they entered the country (the only exception were Australian immigrants with a university qualification). However, adjustment was fast. English speaking migrants had an initial gap of about 10 percentage points. They are predicted to reach parity with natives after 10 years of residence, and to have higher employment rates than natives thereafter.

Figure 14. Projected Age-Employment Profiles for Participants, 1991-95 Male Immigrants and Natives



Non-English speaking migrants had a much larger initial gap that, moreover, differed by qualification. School graduates entered with a gap of 33 percentage points, while university

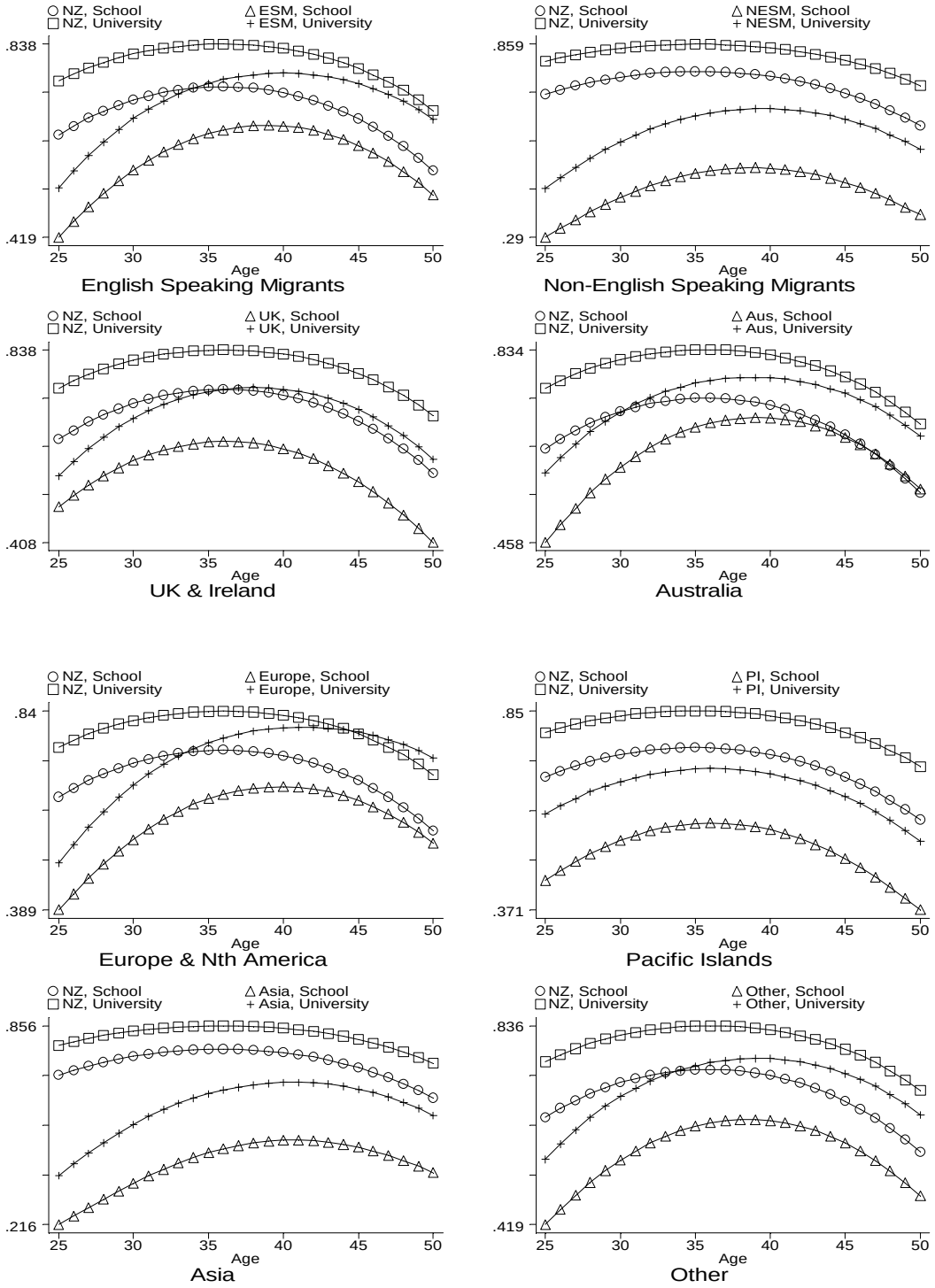
graduates entered with a staggering gap of 52 percentage points. The implicit unemployment rate for university graduates was 56 percent! This high unemployment rate reflects the apparent problem of Non-English speakers to transfer the skills that they acquired in their home country, as did the large income gap for those who work. As for income, subsequent (future) growth in relative employment rates is predicted to be very fast, much faster than for English speaking migrants, so that university graduates come within 5 percentage points of natives within 10 years and overtake after a further 6 years. The predicted growth for school graduates is less spectacular, but even this group of migrants will reach parity with natives within 25 years.

Female Participation Results

Looking at the profiles for the different regions-of-origin, we find that the results for Non-English speaking migrants are mainly driven by Asian immigrants who had a large initial gap for the more skilled immigrants and very fast adjustment thereafter. (A similar pattern is observed for the group of Other immigrants). Finally, we notice that the only group of immigrants that is predicted not to converge to native male employment rates are Pacific Island immigrants with school qualification only. Based on the logit estimates, they will have a persistent employment gap of 6 percentage points after 25 years of residence.

Female participation patterns differ quite substantially from the male ones. Firstly, women have a more pronounced life cycle participation pattern. Native women with school qualification had a participation rate of 64 percent at the age of 25. Over the next 25 years, this rate is predicted to increase first by 11 percentage points to 75 percent, before dropping back by 19 percentage points to 56 percent. The male changes, by contrast were contained within a 4 percentage points interval.

Figure 15. Projected Age-Participation Profiles, 1991-95 Female Immigrants and Natives



Secondly, the female differential effects by qualification exceeded those of otherwise similar males. For instance, the participation rates of women with university qualification exceeded those of same aged school graduates by up to 13 percentage points. For men, the gap did not exceed 3 percentage points. This is a reflection of the well documented result that female labour supply is more elastic than male labour supply which means that a given difference in potential

wage prospects (between skilled and unskilled individuals) is associated with a larger change in participation rates for women than for men.

Thirdly, immigrant women had much lower relative participation rates than immigrant men. Figure 15 shows that with one exception (European and North American university graduates), the immigrants participation rates never reach the participation rates of native women over the 25 year period. One possible explanation is that most women are "tied movers" (notice that the profiles in this part are drawn for joint parents) who might have not migrated on their own initiative for labour market reasons but rather accompanied their husband (See Baker and Benjamin, 1997). However, this still begs the question why a married (or, more precisely, "partnered") immigrant women with dependent children would have a so much lower participation probability than a married native women with children.

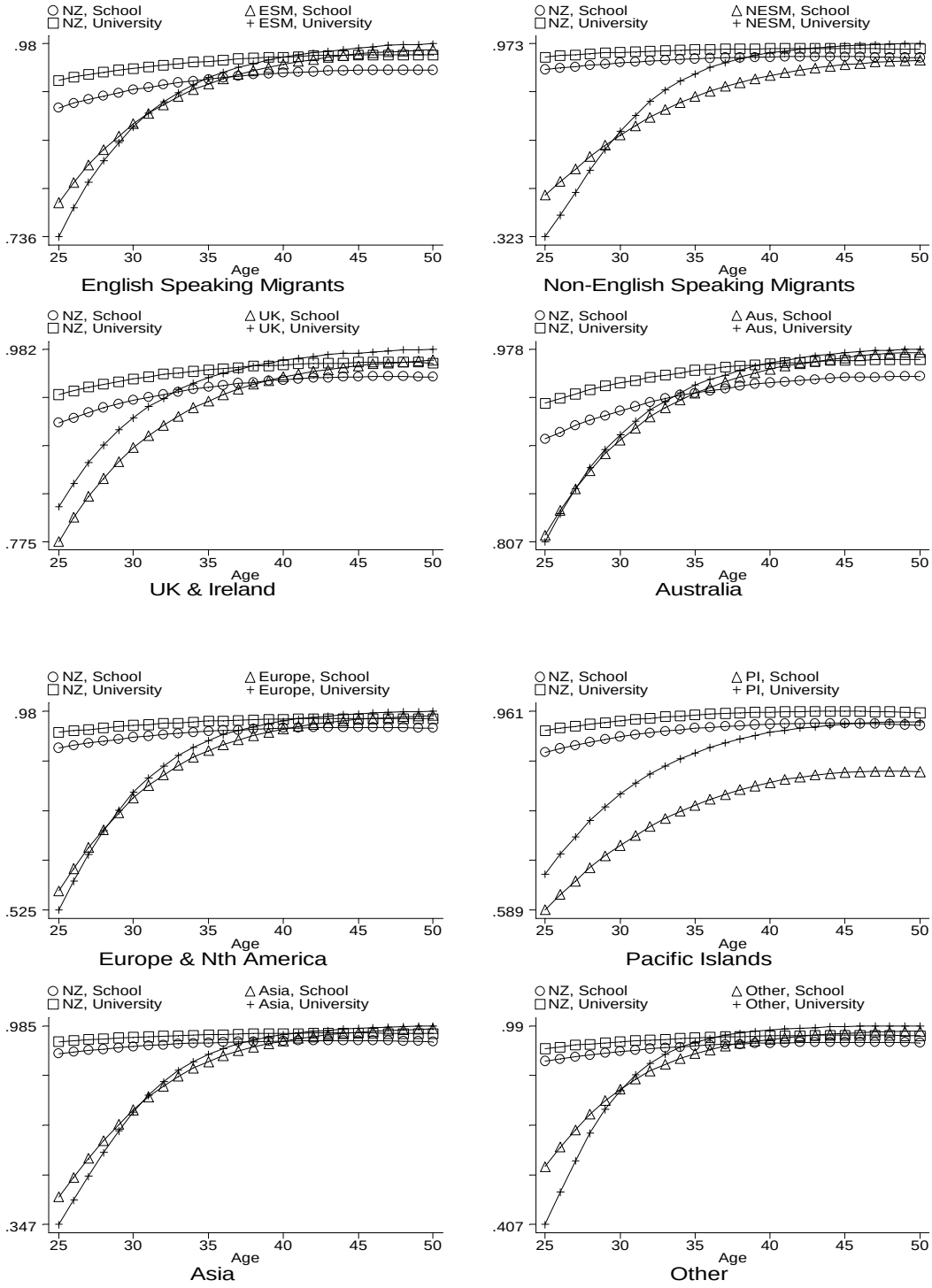
The differences are substantial. Convergence tends to be more pronounced for English speaking than for non-English speaking migrants. However, there are exceptions. For instance, female immigrants from the UK and Ireland have participation rates that stay below those of natives by 16 percentage points (for university graduates) and 10 percentage points (for school graduates) for most of their careers. The two regions with the largest relative differences are Asia and the Pacific Islands, with gaps of up to 60 percentage points. While some convergence takes place for Asian women, no convergence is predicted for Pacific Island immigrants.

Female Employment Results

Finally, Figure 16 graphs the female age-employment profiles. These are quite similar to the male ones. The main difference between women and men is in the participation outcomes. Conditional on participation, female immigrants have, as male immigrants, much higher initial unemployment rates than natives. However, convergence happens fast, and after 10 years, immigrants look much like natives. As for men, there are three notable patterns. Firstly, employment rates are in general higher for women with university qualification than for women with school qualification only. Secondly, in particular among non-English speaking migrants, the entry disadvantage is larger for university graduates, but subsequent growth is faster as well, so that in the end, university trained immigrants catch-up faster with the native rates than less skilled migrants. The skill-transferability problem looms up again. Thirdly and finally, female Pacific Island immigrants with school qualification display a lack of convergence.

Unemployment rates are at least 21 percentage point higher than native rates over the entire 25 year period. A similar trend was already noted for less skilled male Pacific Island immigrants.

Figure 16. Projected Age-Employment Profiles for Participants, 1991-95 Female Immigrants and Natives



9. Concluding Remarks

This study used the 1981, 1986, and 1996 Population Censuses as observation points in order to (i) compare the labour market outcomes of immigrants immediately after arrival in New Zealand and in subsequent years with those of similar New Zealand born individuals, (ii) identify the factors associated with differences in labour market outcomes, and (iii) identify and explain changes in the relative labour market outcomes of immigrants between 1981 and 1996. We distinguished between immigrants from the UK and Ireland, Australia, Europe and North America, Asia, the Pacific Islands, and other regions, and found that the labour market experiences of these region-of-origin groups had large idiosyncratic components. However, there was also ample evidence for substantial diversity in outcomes and convergence times across different countries within regions.

Labour market outcomes of immigrants and natives were closely linked to age and education. Both employment rates and incomes tended to increase as individuals became older. However, the employment and income growth varied substantially among immigrants born in different countries, and between immigrants and the New Zealand born. British and Australian immigrants entered with relatively high employment rates and incomes, and had outcomes similar to, or better than, those of natives over their careers. Asians entered with lower incomes but caught up relatively quickly with native workers, while the economic progress of Pacific Island immigrants was more sluggish. Less skilled Pacific Island immigrants in particular consistently failed to show signs of relative improvements in labour market outcomes over time.

Education was an important factor in explaining individual differences in incomes. Over the period, workers with a university qualification had incomes that exceeded those of unqualified workers by about 50 percent. Immigrants had relatively high levels of formal qualifications throughout the period. However, there was ample evidence that migrants, and migrants from non-English speaking countries in particular, needed time to reap the full benefits of their qualifications. Among migrants from non-English speaking countries, more highly educated workers tended to have a larger initial entry disadvantage relative to similar natives, but also faster subsequent adjustment rates. Overall, they tended to reach parity with natives faster than less educated migrants of the same origin.

English proficiency was certainly one of the main determinants in explaining the relative labour market outcomes of individual immigrants. A direct comparison of otherwise similar English speaking and non-English speaking workers gave an estimated "return" of about 30 percent. However, even after adjusting for differences in age, qualification levels and English proficiency, there remained disparities in incomes (and employment rates) between Asians, Pacific Islanders, and other country-of-origin groups. There are many potential explanations for these disparities, among them differences in the quality of education and cultural differences, or "ethnic capital", that should be explored in further analysis.

Perhaps the most intriguing finding of this study was the changing fortune of the most recent observable cohort of immigrants, those who arrived in the first half of the 1990s. After controlling for the various factors that potentially affect relative incomes, we find that British, Irish and Australian immigrants improved their position relative to previous arrivals, whereas Asian and Pacific Island immigrants arriving between 1991 and 1995 had substantially lower relative incomes than previous arrivals. While it is too early to assess whether these changes reflect a longer-term trend or a one-time "outlier" we notice that one possible explanation for this development would be changes in the labour market (such as a decline of the manufacturing sector and an increasing importance of personal and business services) that might favour immigrants from countries that share both language and cultural background of the New Zealand society.

We conclude by noting some unresolved questions that should be addressed by future research. These include a more detailed analysis of the country outcomes and country effects that are currently hidden by the regional aggregation; a more detailed analysis of factors that influence post-arrival outcomes, such as the geographic or occupational concentration/dispersion of particular national/ethnic groups; a more detailed analysis of the role of push factors; an analysis of the extent of variation in outcomes among "like" migrants; an analysis of occupational outcomes in relation to the "occupational downgrading" hypothesis; and an analysis of labour market adjustment using alternative reference groups - an analysis of how immigrant labour market outcomes compare with those of natives of the same ethnicity.

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LIST OF TABLES

Table A1. Country groupings and Census concordance (Countries of origin with more than 1000 residents in at least one of the Census years)

		1996 Code	1986 Code	1981 Code
UK & Ireland	1			
Australia	2			
Pacific Islands				
Cook	3	1601	196	4
Fiji	4	1602	268	8
Niue	5	1604	588	5
Samoa	6	1606	698	3
Tokelau	7	1607	796	7
Tonga	8	1608	800	6
Europe & Nth America				
Western Europe				
Germany	9	2305	296/955/300	89/90/91
Netherlands	10	2309	552	106
Switzerland	11	2310	772	115
Eastern Europe				
Poland	12	2504	644	110
Yugoslavia	13	2220 2221 2222 2223 2226 2233	904	121
Nth America				
Canada	14	7102	148	19
USA	15	7104	844	119
Asia				
Southeast Asia				
Kampuchea	16	4102	418	100
Indonesia	17	4103	376	94
Malaysia	18	4105	488	26
Phillipines	19	4107	636	109
Singapore	20	4108	732	30
Thailand	21	4109	788	116
Vietnam	22	4110	872	120
Northeast Asia				
China	23	5101	180	80
Hong Kong	24	5102	360	22
Japan	25	5103	412	99
Korea	26	5105	432	101
Taiwan	27	5108	780	81
Southern Asia				
India	28	6104	372	23
Sri Lanka	29	6108	752	31
Other				
Iran	30	3103	380	172
Iraq	31	3104	384	173
South Africa	32	9220	740	112
Zimbabwe	33	9225	668	43

Table A2: Sample and Population Composition, Resident Working Age Population, 1981, 1986 and 1996.

	1981		1986		1996	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Sample Composition						
New Zealand born (5%)	82234	31.95	87540	30.68	90484	23.24
UK and Ireland born (20%)	35965	13.97	35761	12.53	30323	7.79
Other country of birth (100%)	139211	54.08	162002	56.78	268521	68.97
Total	257410	100.00	285303	100.00	389328	100.00
Population Size, New Zealand						
New Zealand born	1644680	83.75	1750800	83.71	1809680	81.16
UK and Ireland born	179825	9.16	178805	8.55	151615	6.80
Other country of birth	139211	7.09	162002	7.75	268521	12.04
Total	1963716	100.00	2091607	100.00	2229816	100.00
Population Size, Auckland						
New Zealand born	380600	74.55	423320	74.72	456360	68.81
UK and Ireland born	68640	13.44	69285	12.23	59520	8.97
Other country of birth	61308	12.01	73902	13.05	147324	22.21
Total	510548	100.00	566507	100.00	663204	100.00

Table A3: Number of Immigrants, by country of origin and Gender, 1981, 1986 and 1996.

Country of Origin	1981 Female	1981 Male	1981 Total	1986 Female	1986 Male	1986 Total	1996 Female	1996 Male	1996 Total
Australia	14899	12588	27487	15852	13337	29189	17068	14467	31535
UK and Ireland	84955	94870	179825	83415	95390	178805	73830	77785	151615
Cook Islands	4891	4862	9753	5460	5239	10699	5338	4666	10004
Fiji	2315	2648	4963	2789	3021	5810	7459	7057	14516
Niue	1769	1787	3556	1884	1852	3736	1993	1820	3813
Samoa	8932	8750	17682	12678	12047	24725	17082	14777	31859
Tokelau	436	474	910	512	503	1015	571	530	1101
Tonga	1754	1899	3653	2543	2654	5197	5410	5039	10449
Germany	1403	1294	2697	1814	1709	3523	2707	2520	5227
Netherlands	7660	10910	18570	8519	11677	20196	7163	7990	15153
Switzerland	501	771	1272	609	855	1464	850	991	1841
Poland	658	693	1351	698	751	1449	624	537	1161
Yugoslavia	836	1146	1982	741	1014	1755	1797	2011	3808
Canada	1913	1852	3765	2308	2066	4374	2790	2419	5209
USA	1937	2489	4426	2499	2873	5372	4020	4015	8035
Kampuchea	236	262	498	953	904	1857	1614	1427	3041
Indonesia	633	814	1447	678	870	1548	954	953	1907
Malaysia	1159	1686	2845	1485	1648	3133	5288	4698	9986
Phillipines	247	81	328	874	159	1033	4067	1292	5359
Singapore	655	460	1115	854	579	1433	1560	1041	2601
Thailand	128	61	189	227	88	315	1331	807	2138
Vietnam	660	864	1524	786	982	1768	1351	1431	2782
China	1393	1533	2926	1729	1834	3563	7735	7233	14968
Hong Kong	502	452	954	695	685	1380	4650	4151	8801
Japan	356	193	549	598	519	1117	3223	1750	4973
Korea	31	16	47	77	197	274	4406	4226	8632
Taiwan	40	32	72	64	51	115	4333	3438	7771
India	2205	2514	4719	2351	2689	5040	4370	5236	9606
Sri Lanka	334	375	709	404	466	870	1489	1570	3059
Iran	29	55	84	70	106	176	427	644	1071
Iraq	18	28	46	39	59	98	791	995	1786
South Africa	1451	1220	2671	1628	1339	2967	3915	3680	7595
Zimbabwe	272	252	524	346	334	680	640	575	1215
Total	145208	157931	303139	156179	168497	324676	200846	191771	392617

Table A4: Number of Recent Immigrants, by country of origin and Gender, 1981, 1986 and 1996.

Country of Origin	1981 Female	1981 Male	1981 Total	1986 Female	1986 Male	1986 Total	1996 Female	1996 Male	1996 Total
Australia	3362	3039	6401	2883	2441	5324	3675	3256	6931
UK and Ireland	7445	8015	15460	6635	7615	14250	7945	8575	16520
Cook Islands	985	1025	2010	725	672	1397	324	305	629
Fiji	547	883	1430	671	898	1569	2032	1630	3662
Niue	331	317	648	267	259	526	99	107	206
Samoa	1957	1758	3715	3570	2903	6473	2138	1768	3906
Tokelau	70	60	130	72	52	124	82	78	160
Tonga	685	665	1350	789	677	1466	765	625	1390
Germany	236	287	523	541	590	1131	922	741	1663
Netherlands	881	1044	1925	1323	1478	2801	590	646	1236
Switzerland	128	208	336	170	210	380	261	252	513
Poland	40	34	74	129	204	333	166	139	305
Yugoslavia	48	48	96	36	46	82	1265	1239	2504
Canada	402	339	741	598	457	1055	741	569	1310
USA	749	980	1729	966	1055	2021	1594	1563	3157
Kampuchea	227	242	469	815	733	1548	426	293	719
Indonesia	107	131	238	184	210	394	445	420	865
Malaysia	540	929	1469	650	748	1398	2638	2162	4800
Phillipines	203	49	252	688	102	790	1714	667	2381
Singapore	283	203	486	284	188	472	379	261	640
Thailand	75	39	114	118	52	170	862	621	1483
Vietnam	617	802	1419	396	472	868	564	501	1065
China	291	280	571	485	429	914	4955	4298	9253
Hong Kong	126	156	282	203	258	461	3303	2936	6239
Japan	182	130	312	369	423	792	2527	1413	3940
Korea	22	13	35	51	176	227	4206	4024	8230
Taiwan	13	11	24	35	24	59	3394	2621	6015
India	364	462	826	374	460	834	1842	1741	3583
Sri Lanka	81	88	169	85	105	190	814	839	1653
Iran	11	34	45	50	75	125	225	372	597
Iraq	9	14	23	31	38	69	739	915	1654
South Africa	332	297	629	243	237	480	2022	1950	3972
Zimbabwe	80	78	158	87	61	148	232	206	438
Total	21429	22660	44089	24523	24348	48871	53886	47733	101619

Table A5: Population Sizes by Gender, Auckland or Rest of New Zealand (RoNZ) and Region of Origin, 1981, 1986 and 1996.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female RoNZ						
New Zealand	625380	656760	687720			
UK & Ireland	52615	51155	44910	4405	3945	4495
Australia	9590	10251	11178	2321	1945	2288
Europe & Nth America	12566	14101	15440	1988	2933	4090
Pacific Islands	6853	8476	11271	1544	1904	1791
Asia	5475	7372	19503	2144	3028	10292
Other	2402	2644	5829	612	513	2277
Female Auckland						
New Zealand	195480	216060	234560			
UK & Ireland	32145	32110	28915	3015	2655	3450
Australia	5254	5566	5889	1020	921	1387
Europe & Nth America	6149	6986	9090	1002	1491	3253
Pacific Islands	13780	17891	27923	3163	4292	4113
Asia	3500	4845	28321	1080	1874	18553
Other	1766	1928	5842	340	327	2788
Male RoNZ						
New Zealand	626580	664960	665120			
UK & Ireland	58025	57925	47170	4880	4490	4925
Australia	7815	8267	9271	2008	1550	2034
Europe & Nth America	16400	17437	15955	2376	3135	3679
Pacific Islands	7807	9012	10700	1877	1838	1451
Asia	6064	7435	15932	2387	2984	7981
Other	2387	2592	6112	579	546	2448
Male Auckland						
New Zealand	185120	207260	221800			
UK & Ireland	36495	37175	30605	3055	3075	3650
Australia	4690	4997	5195	1002	873	1222
Europe & Nth America	7621	8337	9527	1199	1629	3062
Pacific Islands	13118	16751	24297	2960	3735	3448
Asia	3734	4742	25131	1295	1635	15757
Other	1696	1859	6109	382	393	3108
Total						
New Zealand	1632560	1745040	1809200			
UK & Ireland	179280	178365	151600	15355	14165	16520
Australia	27349	29081	31533	6351	5289	6931
Europe & Nth America	42736	46861	50012	6565	9188	14084
Pacific Islands	41558	52130	74191	9544	11769	10803
Asia	18773	24394	88887	6906	9521	52583
Other	8251	9023	23892	1913	1779	10621

Tables A6, Population Sizes by Gender, Auckland or Rest of New Zealand (RoNZ), Region-of-Origin, Year and age group (15-24, 25-54, 55-64).

ALL IMMIGRANTS

RECENT IMMIGRANTS

	1981			1986			1996		
1981	1986		1996						
Female	15-24	25-54	55-64	15-24	25-54	55-64	15-24	25-54	55-64
15-	25-	55-	15-	25-	55-	15-	25-	55-	
RoNZ									
New Zealand	189580	351520	84280	188380	384140	84240	160900	441860	84960
UK & Ireland	6540	33885	12190	6670	32940	11545	2810	30630	11470
720	3315	370	715	3015	215	480	3815	200	
Australia	1877	6590	1123	1970	6991	1290	2396	7421	1361
908	1353	60	545	1343	57	580	1666	42	
Europe & Nth America	1458	8783	2325	1662	9086	3353	1938	10438	3064
496	1413	79	642	2213	78	796	3134	160	
Pacific Islands	1837	4612	404	2068	5851	557	2016	8063	1192
812	693	39	956	876	72	828	846	117	
Asia	1376	3559	540	1699	4965	708	5358	12684	1461
898	1172	74	1089	1852	87	4145	5782	365	
Other	559	1537	306	522	1826	296	1077	4193	559
166	428	18	109	392	12	558	1650	69	
Female									
Auckland									
New Zealand	62080	108280	25120	65480	124620	25960	58300	152580	23680
UK & Ireland	4650	20750	6745	4440	21410	6260	2170	20765	5980
570	2175	270	495	2005	155	385	2910	155	
Australia	972	3634	648	1122	3684	760	1210	3962	717
331	652	37	265	632	24	319	1047	21	
Europe & Nth America	791	4209	1149	901	4640	1445	1107	6665	1318
231	744	27	284	1170	37	510	2636	107	
Pacific Islands	3571	9294	915	4571	12029	1291	5018	20220	2685
1567	1439	157	2165	1890	237	1805	1971	337	
Asia	720	2321	459	930	3339	576	6933	19706	1682
389	652	39	568	1222	84	5367	12457	729	
Other	429	1116	221	408	1303	217	1023	4402	417
96	234	10	75	230	22	584	2109	95	
Male									
RoNZ									
New Zealand	197500	348500	80580	199040	383240	82680	164460	420360	80300
UK & Ireland	7515	37675	12835	7065	36560	14300	2985	31455	12730
860	3810	210	755	3585	150	505	4135	285	
Australia	1570	5266	979	1874	5279	1114	2316	5824	1131
557	1393	58	343	1145	62	470	1512	52	
Europe & Nth America	1637	11649	3114	1656	10772	5009	1802	10281	3872
563	1724	89	582	2466	87	668	2816	195	
Pacific Islands	2057	5378	372	1943	6506	563	1774	7680	1246
942	910	25	836	960	42	672	696	83	
Asia	1613	3889	562	1745	4860	830	4795	9749	1388
1093	1238	56	1091	1805	88	3492	4216	273	
Other	601	1536	250	565	1769	258	1157	4352	603
151	413	15	135	404	7	600	1787	61	
Male									
Auckland									
New Zealand	62180	100780	22160	64540	118380	24340	58060	141160	22580
UK & Ireland	4980	24015	7500	4790	24060	8325	2120	21070	7415
570	2345	140	460	2485	130	365	3110	175	
Australia	903	3187	600	1126	3156	715	1149	3413	633
224	752	26	201	650	22	243	949	30	
Europe & Nth America	864	5317	1440	946	5433	1958	1135	6726	1666
248	919	32	302	1291	36	486	2470	106	
Pacific Islands	3158	9157	803	3967	11571	1213	4282	17595	2420
1370	1491	99	1740	1849	146	1489	1708	251	
Asia	792	2563	379	928	3257	557	6883	16570	1678
507	764	24	529	1039	67	5175	9854	728	
Other	448	1095	153	381	1290	188	1104	4591	414
94	283	5	70	311	12	626	2403	79	
Total									
New Zealand	511340	909080	212140	517440	1010380	217220	441720	1155960	211520
UK & Ireland	23685	116325	39270	22965	114970	40430	10085	103920	37595
2720	11645	990	2425	11090	650	1735	13970	815	
Australia	5322	18677	3350	6092	19110	3879	7071	20620	3842
2020	4150	181	1354	3770	165	1612	5174	145	
Europe & Nth America	4750	29958	8028	5165	29931	11765	5982	34110	9920
1538	4800	227	1810	7140	238	2460	11056	568	
Pacific Islands	10623	28441	2494	12549	35957	3624	13090	53558	7543
4691	4533	320	5697	5575	497	4794	5221	788	
Asia	4501	12332	1940	5302	16421	2671	23969	58709	6209
2887	3826	193	3277	5918	326	18179	32309	2095	

Other	2037	5284	930	1876	6188	959	4361	17538	1993
507	1358	48	389	1337	53	2368	7949	304	

Table A7: Number of Natives, Immigrants and Recent Immigrants by Region-of-Origin , Age Group, Gender and Census Year.

1. All Immigrants

	1981			1986			1996		
Age	15-24	25-54	55-64	15-24	25-54	55-64	15-24	25-54	55-64
Female									
New Zealand	254580	461440	109920	254900	509780	110220	219240	594620	108640
UK & Ireland	11250	54700	19005	11160	54430	17825	4980	51400	17450
Australia	2869	10254	1776	3101	10697	2054	3606	11384	2078
Europe & Nth America	2275	13039	3483	2581	13766	4802	3045	17103	4382
Pacific Islands	5432	13918	1320	6663	17917	1850	7034	28285	3877
Asia	2109	5890	1001	2637	8315	1285	12291	32391	3143
Other	999	2663	532	938	3140	514	2100	8595	976
Male									
New Zealand	263820	451880	103040	265320	503400	107180	222620	561640	102920
UK & Ireland	12560	61915	20395	11925	60790	22675	5105	52535	20145
Australia	2494	8505	1589	3028	8479	1830	3465	9238	1764
Europe & Nth America	2536	17054	4567	2635	16282	6976	2937	17007	5538
Pacific Islands	5238	14558	1178	5928	18119	1776	6056	25275	3666
Asia	2413	6474	944	2685	8136	1388	11678	26320	3066
Other	1057	2640	404	958	3075	447	2261	8943	1017

2. Recent Immigrants

	15-24	25-54	55-64	15-24	25-54	55-64	15-24	25-54	55-64
Female									
UK & Ireland	1305	5495	645	1225	5040	370	865	6725	355
Australia	1249	2016	97	813	1988	82	899	2713	63
Europe & Nth America	734	2176	108	935	3400	117	1306	5770	267
Pacific Islands	2393	2137	196	3132	2775	309	2633	2819	454
Asia	1294	1831	113	1661	3082	171	9512	18239	1094
Other	264	663	28	187	628	34	1142	3759	164
Male									
UK & Ireland	1450	6215	350	1215	6110	290	870	7245	460
Australia	788	2166	85	552	1805	84	713	2461	82
Europe & Nth America	829	2684	123	899	3800	124	1154	5286	301
Pacific Islands	2324	2405	125	2589	2817	188	2161	2404	334
Asia	1605	2014	80	1624	2851	155	8667	14070	1001
Other	250	700	20	206	720	20	1226	4190	140

Table A8, Number of Full-time Workers by Gender, Auckland or Rest of New Zealand (RoNZ), Region-of-Origin, and Year.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
RoNZ						
New Zealand	216000	261520	267660			
UK & Ireland	18900	21225	19155	1675	1775	2130
Australia	3329	3786	4530	998	729	930
Europe & Nth America	4089	4853	5712	633	1016	1407
Pacific Islands	2628	3429	3877	504	628	393
Asia	2216	3042	5858	720	968	1893
Other	866	1014	1963	210	170	552
Female						
Auckland						
New Zealand	77540	99560	108840			
UK & Ireland	12790	14905	13920	1200	1185	1855
Australia	1980	2416	2807	446	400	715
Europe & Nth America	2228	2784	3673	343	568	1151
Pacific Islands	5903	8003	10409	1160	1605	1090
Asia	1521	2229	7527	432	761	3375
Other	744	857	2169	144	126	826
Male						
RoNZ						
New Zealand	506280	520220	456720			
UK & Ireland	49065	47125	34030	4240	3850	3720
Australia	6418	6343	6272	1676	1219	1456
Europe & Nth America	13827	13803	10408	1853	2520	2187
Pacific Islands	6209	6844	5816	1249	1130	487
Asia	4407	5451	7183	1378	1836	2084
Other	1859	1994	3729	397	368	1239
Male						
Auckland						
New Zealand	145580	164680	158880			
UK & Ireland	31110	31195	24175	2610	2610	2995
Australia	3847	3978	3872	834	728	981
Europe & Nth America	6334	6724	6530	933	1320	1777
Pacific Islands	10289	12493	13782	2033	2377	1439
Asia	2920	3696	10075	863	1127	4401
Others	1369	1488	3637	289	301	1515

Table A9: Number of Immigrants by Years Since Migration, Region-of-Origin and Census Year.

	1981						1986						1996					
	Region-of-Origin						Region-of-Origin						Region-of-Origin					
YSM	UK	AUS	EU	PI	ASIA	OTH	UK	AUS	EU	PI	ASIA	OTH	UK	AUS	EU	PI	ASIA	OTH
0	3225	1803	2257	1882	1988	381	2855	1455	2210	2766	2448	544	4980	2190	5032	3272	16899	3728
1	1670	926	1050	1137	1399	215	1560	808	1251	1580	1440	280	3810	1378	3275	1953	10996	2734
2	2085	972	1002	1387	1036	295	2005	888	1427	1777	1589	268	2705	1072	2026	1311	7752	2083
3	2430	875	845	1386	991	360	2695	829	1690	1766	1365	265	1745	816	1445	1187	6050	705
4	2610	951	802	1548	727	387	3210	737	1562	1998	1291	228	1535	700	1093	1025	4910	588
5	3440	874	698	2240	796	287	1925	607	1135	1923	1411	210	1745	775	1213	2057	5976	783
6	7510	1127	1047	3015	777	412	2015	665	1029	1930	1394	222	1875	661	1228	3011	6725	818
7	10905	1233	1237	3093	677	519	1750	593	734	1525	671	228	1945	527	1157	4582	4771	757
8	8435	1161	1106	2441	520	382	2445	677	789	1478	618	374	2645	597	1160	5506	3641	802
9	5800	857	960	1898	468	265	2295	625	639	1506	535	321	2490	591	1146	5673	2052	764
10	6350	1152	1135	2651	491	243	4545	1208	973	3169	710	397	1585	604	991	2818	1536	445
11	3725	703	715	1623	392	157	8130	1035	954	2764	636	442	1310	614	932	2269	1239	300
12	3000	620	698	1157	365	171	11365	1399	1306	3356	625	492	1525	676	1092	1722	1051	246
13	4110	592	679	919	326	177	9660	1241	1244	2413	525	437	2385	724	1406	1877	1043	276
14	6990	992	935	1249	371	280	7255	1228	1098	2145	533	303	2945	780	1360	1630	1017	304
15	7655	1069	1004	1586	375	322	6100	1291	1179	2367	509	223	2165	870	1174	1896	1504	331
16	6745	887	1084	1180	354	418	4640	944	860	1840	471	183	1880	814	905	1967	1099	332
17	6690	788	944	952	301	355	3090	618	679	1144	359	143	1880	697	739	1351	512	378
18	5595	789	1076	1036	294	318	4795	708	802	1039	393	193	2295	665	653	1277	554	434
19	4645	655	1213	944	259	286	6225	794	805	1167	319	237	2420	875	713	1552	534	416
>20	76210	8461	22467	8320	5924	2065	90245	10839	24676	12600	6604	3082	105750	14909	21272	26257	9028	6668

Table A10: Number of Immigrants by Years Since Migration, Region-of-Origin and Census Year,
Respondents Aged 25 or over.

	1981						1986						1996					
	Region-of-Origin						Region-of-Origin						Region-of-Origin					
YSM	UK	AUS	EU	PI	ASIA	OTH	UK	AUS	EU	PI	ASIA	OTH	UK	AUS	EU	PI	ASIA	OTH
0	2395	1025	1539	880	1123	265	2195	978	1539	1325	1630	418	4260	1592	3691	1834	11185	2853
1	1385	579	775	441	782	157	1305	594	1000	699	859	211	3475	1075	2778	1098	7303	2082
2	1735	654	801	594	589	214	1680	680	1210	785	969	208	2405	856	1801	708	4997	1643
3	2130	654	710	647	551	284	2300	627	1460	886	897	223	1660	646	1292	589	3726	568
4	2240	762	675	873	479	293	2690	581	1306	1209	865	181	1400	549	976	567	3032	473
5	2820	690	591	1428	514	198	1640	499	926	1185	1039	161	1585	601	1086	1215	4161	634
6	5945	917	849	2117	573	300	1665	527	851	1256	1087	169	1625	501	1088	2028	4993	660
7	8400	1012	1001	2324	559	353	1470	463	618	1107	543	157	1665	392	1000	3429	3846	578
8	6590	947	850	1886	404	266	1945	523	617	1082	499	263	2110	415	977	4438	3168	603
9	4405	709	703	1497	375	169	1825	475	490	1182	439	233	2125	400	937	4861	1775	584
10	4870	942	900	2132	399	164	3335	889	774	2567	575	269	1265	374	786	2383	1285	327
11	2875	543	539	1295	328	104	5785	739	699	2207	513	291	1035	339	719	1855	992	225
12	2305	476	560	896	289	117	8215	937	971	2706	518	320	1160	350	823	1415	847	184
13	3170	425	534	657	245	100	7060	772	929	1843	388	275	1735	359	1046	1509	837	197
14	4910	697	711	939	264	158	5225	717	761	1695	414	193	2105	358	1008	1292	793	215
15	5690	735	796	1251	259	194	4505	763	862	1803	388	149	1575	375	844	1480	1146	221
16	5195	607	864	900	234	260	3575	572	637	1454	341	125	1400	400	695	1552	878	218
17	5440	537	739	717	200	243	2485	404	525	896	270	99	1495	376	561	1090	407	253
18	4630	557	895	833	196	224	3750	503	647	797	279	140	1925	379	523	1049	460	301
19	3945	486	1043	760	180	215	5090	586	668	967	254	179	2095	538	549	1310	427	320
>20	74940	8170	22068	7907	5766	1961	87980	10231	24336	12011	6357	2912	103430	13589	20850	25401	8662	6392

Table A11: Recent Immigrants as a percentage of all immigrants, New Zealand and Auckland, by Region-of-Origin and Year.

	1981		1986		1996	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
1. New Zealand						
UK & Ireland	8.5		7.9		10.8	
Australia	23.2		18.2		21.9	
Europe & Nth America	15.4		19.7		28.1	
Pacific Islands	23.0		22.6		14.5	
Asia	36.8		39.0		59.1	
Other	23.2		19.7		44.4	
Total	14.7		15.2		26.5	
2. Auckland						
UK & Ireland	8.8		8.2		11.9	
Australia	20.3		16.9		23.5	
Europe & Nth America	15.9		20.3		33.9	
Pacific Islands	22.7		23.1		14.4	
Asia	32.8		36.6		64.1	
Other	20.8		19.0		49.3	
Total	15.0		15.9		30.8	

Table A12: Five-Year Outmigration Rates (1981-1986), by Age in 1981, Years in New Zealand, Region-of-Origin, and Gender.

	UK	AUS	EU	PI	ASIA	OTH	TOTAL
1. Men							
Age in 1981: 15-24							
Ysm 0-1	-.517	-.730	-.610	.127	-.310	-.451	-.340
Ysm 2-5	-.011	-.247	-.181	-.060	-.579	-.142	-.183
Ysm 6-10	-.098	-.249	-.149	-.168	-.226	-.245	-.135
Total	-.124	-.416	-.332	-.059	-.405	-.244	-.192
Age in 1981: 25-44							
Ysm 0-1	-.140	-.543	-.342	-.196	-.251	-.425	-.277
Ysm 2-5	-.058	-.322	-.150	.195	-.289	-.207	-.094
Ysm 6-10	-.004	-.178	-.094	-.094	-.171	-.124	-.056
Total	-.030	-.302	-.177	-.039	-.236	-.216	-.099
2. Women							
Age in 1981: 15-24							
Ysm 0-1	-.220	-.652	-.504	.487	-.229	-.250	-.171
Ysm 2-5	-.157	-.322	-.143	-.029	-.412	-.197	-.111
Ysm 6-10	-.134	-.218	-.130	-.132	-.236	-.186	-.145
Total	-.101	-.420	-.258	.033	-.302	-.200	-.141
Age in 1981: 25-44							
Ysm 0-1	-.285	-.490	-.299	.163	-.155	-.364	-.256
Ysm 2-5	-.076	-.244	-.172	.134	-.186	-.120	-.089
Ysm 6-10	-.013	-.168	-.075	-.115	-.057	-.121	-.062
Total	-.054	-.241	-.162	-.034	-.132	-.157	-.095

Table A13: Five-Year Outmigration Rates (1981-1986), by Age in 1981, Years in New Zealand
Region-of-Origin, and Highest Qualification.

	Age in 1981: 15-24							Age in 1981: 25-44						
	UK	AUS	EU	PI	ASIA	OTH	TOTAL	UK	AUS	EU	PI	ASIA	OTH	TOTAL
No qualification														
Ysm 0-1	-.315	-.821	-.761	.353	-.327	-.720	-.205	-.521	-.692	-.746	-.215	-.292	-.719	-.456
Ysm 2-5	-.084	-.575	-.432	-.062	-.363	-.315	-.171	-.349	-.604	-.634	-.060	-.383	-.567	-.312
Ysm 6-10	-.096	-.322	-.170	-.152	-.329	-.300	-.144	-.234	-.536	-.521	-.295	-.343	-.554	-.302
Total	-.112	-.598	-.468	-.023	-.338	-.380	-.166	-.278	-.580	-.606	-.236	-.335	-.579	-.322
School qualificat														
Ysm 0-1	-.410	-.630	-.509	.378	-.348	-.375	-.267	-.325	-.472	-.477	.368	-.107	-.350	-.310
Ysm 2-5	-.203	-.337	-.302	-.064	-.683	-.364	-.306	-.074	-.209	-.318	.772	-.179	-.285	-.068
Ysm 6-10	-.303	-.348	-.376	-.086	-.510	-.466	-.305	-.117	-.071	-.211	.548	-.146	-.154	-.047
Total	-.295	-.433	-.396	.032	-.535	-.423	-.298	-.126	-.176	-.310	.591	-.147	-.231	-.088
Voc. qualification														
Ysm 0-1	-.147	-.474	.157	4.758	2.054	.107	.272	.180	-.296	.410	.939	.313	-.012	.186
Ysm 2-5	1.857	.633	1.698	3.542	1.484	2.000	1.864	.164	.044	.487	1.510	.286	.212	.258
Ysm 6-10	1.730	1.318	1.880	2.813	1.465	1.245	1.769	.336	.244	.440	1.371	.298	.341	.388
Total	1.295	.198	1.045	3.527	1.663	1.116	1.317	.276	.072	.448	1.350	.298	.234	.324
Uni qualification														
Ysm 0-1	-.437	-.724	-.265	17.666	3.380	1.363	.291	-.216	-.589	-.309	-.142	-.216	-.380	-.304
Ysm 2-5	7.666	1.107	2.687	4.066	-.034	2.500	.961	-.034	-.273	-.055	.648	-.305	-.055	-.107
Ysm 6-10	2.384	2.178	2.340	1.428	.394	2.850	1.820	.282	.132	.174	.191	-.076	.063	.166
Total	1.879	.136	1.040	3.692	.5056	2.377	1.119	.070	-.246	-.052	.248	-.187	-.098	-.0445

Table A14: Ten-Year Outmigration Rates (1986-1996), by Age in 1986, Years in New Zealand,
Region-of-Origin, and Gender.

	UK	AUS	EU	PI	ASIA	OTH	TOTAL
1. Men							
Age in 1986: 15-24							
Ysm 0-1	-.516	-.734	-.738	-.042	-.541	-.353	-.406
Ysm 2-5	-.396	-.533	-.356	-.331	-.548	-.233	-.407
Ysm 6-10	-.265	-.395	-.338	-.333	-.452	-.099	-.315
Total	-.344	-.532	-.486	-.248	-.526	-.189	-.370
Age in 1986: 25-44							
Ysm 0-1	-.459	-.651	-.500	-.104	-.438	-.368	-.427
Ysm 2-5	-.344	-.537	-.352	-.162	-.268	-.187	-.318
Ysm 6-10	-.165	-.366	-.268	-.262	-.315	-.010	-.237
Total	-.288	-.497	-.360	-.208	-.331	-.173	-.307
2. Women							
Age in 1986: 15-24							
Ysm 0-1	-.393	-.728	-.641	.149	-.402	-.187	-.260
Ysm 2-5	-.284	-.508	-.399	-.269	-.438	.164	-.333
Ysm 6-10	-.139	-.379	-.285	-.281	-.443	-.141	-.252
Total	-.229	-.530	-.448	-.153	-.426	-.083	-.285
Age in 1986: 25-44							
Ysm 0-1	-.379	-.621	-.466	.119	-.216	-.250	-.319
Ysm 2-5	-.240	-.482	-.324	-.096	-.203	-.128	-.250
Ysm 6-10	-.069	-.306	-.217	-.186	-.228	.087	-.160
Total	-.187	-.436	-.327	-.120	-.214	-.062	-.225

Table A15: Ten-Year Outmigration Rates (1986-1996), by Age in 1986, Years in New Zealand
Region-of-Origin, and Highest Qualification.

	Age in 1981: 15-24							Age in 1981: 25-44						
	UK	AUS	EU	PI	ASIA	OTH	TOTAL	UK	AUS	EU	PI	ASIA	OTH	TOTAL
No qualification														
Ysm 0-1	-.363	-.760	-.857	.308	.040	1.631	.082	-.457	-.521	-.403	.078	.080	.277	-.125
Ysm 2-5	-.615	-.523	-.428	-.160	-.196	2.000	-.236	-.326	-.554	-.231	-.077	-.087	.703	-.180
Ysm 6-10	-.390	-.476	-.237	-.287	-.443	.155	-.327	-.149	-.308	-.326	-.186	-.291	.717	-.194
Total	-.452	-.576	-.480	-.082	-.170	.702	-.190	-.262	-.439	-.303	-.123	-.128	.619	-.179
School qualificat														
Ysm 0-1	-.564	-.769	-.796	-.068	-.743	-.537	-.509	-.377	-.647	-.400	.133	-.309	-.259	-.327
Ysm 2-5	-.493	-.611	-.634	-.451	-.704	-.359	-.552	-.220	-.495	-.212	-.135	-.171	-.017	-.227
Ysm 6-10	-.490	-.551	-.632	-.351	-.694	-.578	-.512	-.018	-.348	-.176	-.298	-.246	-.049	-.195
Total	-.501	-.63	-.683	-.309	-.716	-.519	-.526	-.152	-.462	-.239	-.189	-.232	-.083	-.231
Voc. qualification														
Ysm 0-1	-.420	-.623	-.537	.633	-.185	.081	-.203	-.359	-.634	-.475	-.204	-.497	-.301	-.422
Ysm 2-5	.392	-.297	.390	-.013	-.010	.400	.116	-.334	-.498	-.371	-.209	-.369	-.276	-.350
Ysm 6-10	.761	.350	.978	.334	.205	1.226	.620	-.169	-.339	-.272	-.205	-.289	-.212	
Total	.269	-.266	.051	.253	-.024	.666	.152	-.269	-.464	-.366	-.206	-.383	-.168	-.312
Uni qualification														
Ysm 0-1	.357	-.536	-.179	3.238	.666	0	.362	-.565	-.709	-.543	-.515	-.465	-.455	-.537
Ysm 2-5	3.285	2.000	2.967	1.950	.139	1.62	1.104	-.239	-.501	-.397	-.212	-.382	-.349	-.345
Ysm 6-10	2.375	3.178	2.116	1.236	1.288	3.00	2.126	-.057	-.292	-.214	-.118	-.240	-.058	-.150
Total	1.888	1.164	1.024	1.949	.465	1.69	1.165	-.241	-.490	-.397	-.243	-.364	-.278	-.335

Table A16: Fifteen-Year Outmigration Rates (1981-1996), by Age in 1981, Years in New Zealand,
Region-of-Origin, and Gender.

	UK	AUS	EU	PI	ASIA	OTH	TOTAL
1. Men							
Age in 1981: 15-24							
Ysm 0-1	-.491	-.814	-.715	-.152	-.556	-.487	-.498
Ysm 2-5	-.232	-.571	-.377	-.400	-.726	-.184	-.432
Ysm 6-10	-.278	-.475	-.241	-.387	-.383	-.150	-.307
Total	-.291	-.618	-.449	-.337	-.596	-.213	-.381
Age in 1981: 25-44							
Ysm 0-1	-.404	-.737	-.486	-.274	-.381	-.435	-.450
Ysm 2-5	-.204	-.539	-.362	-.098	-.461	-.209	-.280
Ysm 6-10	-.101	-.399	-.180	-.238	-.245	.165	-.163
Total	-.155	-.517	-.318	-.210	-.361	-.100	-.237
2. Women							
Age in 1981: 15-24							
Ysm 0-1	-.357	-.739	-.631	.167	-.456	-.141	-.355
Ysm 2-5	.092	-.550	-.400	-.331	-.601	-.209	-.324
Ysm 6-10	-.156	-.437	-.226	-.282	-.372	-.144	-.217
Total	-.141	-.591	-.402	-.210	-.498	-.164	-.277
Age in 1981: 25-44							
Ysm 0-1	-.400	-.682	-.509	.098	-.303	-.241	-.394
Ysm 2-5	-.125	-.479	-.312	-.031	-.333	-.096	-.203
Ysm 6-10	-.147	-.371	-.180	-.245	-.127	-.025	-.192
Total	-.167	-.452	-.304	-.169	-.253	-.086	-.222

Table A17: Fifteen-Year Outmigration Rates (1981-1996), by Age in 1981, Years in New Zealand
Region-of-Origin, and Highest Qualification.

	Age in 1981: 15-24							Age in 1981: 25-44						
	UK	AUS	EU	PI	ASIA	OTH	TOTAL	UK	AUS	EU	PI	ASIA	OTH	TOTAL
No qualification														
Ysm 0-1	-.657	-.864	-.823	.176	-.402	-.240	-.328	-.604	-.820	-.801	-.231	-.349	-.421	-.513
Ysm 2-5	-.267	-.751	-.559	-.345	-.596	-.052	-.405	-.414	-.727	-.731	-.236	-.523	-.310	-.425
Ysm 6-10	-.333	-.569	-.295	-.370	-.364	-.116	-.358	-.386	-.689	-.582	-.399	-.384	-.109	-.420
Total	-.349	-.743	-.568	-.258	-.455	-.112	-.365	-.408	-.720	-.676	-.350	-.414	-.212	-.432
School qualificat														
Ysm 0-1	-.564	-.773	-.707	-.160	-.678	-.487	-.555	-.333	-.656	-.554	.236	-.212	-.402	-.392
Ysm 2-5	-.377	-.602	-.642	-.474	-.826	-.546	-.562	-.084	-.467	-.357	.327	-.311	-.327	-.193
Ysm 6-10	-.488	-.639	-.613	-.317	-.703	-.573	-.504	-.129	-.266	-.262	.189	-.065	-.016	-.119
Total	-.476	-.669	-.645	-.342	-.751	-.554	-.529	-.138	-.388	-.363	.230	-.197	-.188	-.175
Voc. qualification														
Ysm 0-1	-.102	-.598	-.060	3.689	1.297	.464	.123	-.185	-.616	.045	.595	-.145	.048	-.161
Ysm 2-5	1.404	-.017	1.490	2.372	1.121	2.130	1.297	-.053	-.287	.076	1.260	-.107	.140	-.005
Ysm 6-10	1.941	.897	2.17	2.774	.860	1.868	1.913	.175	-.116	.252	1.233	-.009	.427	.208
Total	1.366	-.128	1.006	2.834	1.079	1.571	1.225	.080	-.270	.147	1.157	-.076	.251	.097
Uni qualification														
Ysm 0-1	.187	-.693	-.218	21.666	1.666	.636	.251	-.491	-.739	-.538	-.178	-.447	-.390	-.522
Ysm 2-5	12.333	.928	2.75	4.200	-.253	2.928	1.065	-.044	-.472	-.267	.216	-.393	-.060	-.197
Ysm 6-10	3.051	2.464	3.386	2.000	.431	4.100	2.359	.187	-.033	.074	.147	-.158	.015	.070
Total	2.741	.175	1.443	4.358	.187	2.888	1.361	-.032	-.419	-.229	.097	-.302	-.116	-.168

Table A18: "Outmigration" rates of natives, by Age in 1981 and Qualification.
(Cohort size in t / cohort size in t-1) –1

1. Five year outmigration rates (81-86)

Age in 81	No qual.	Sch.qual.	Voc.qual.	Uni qual.	Total
15-19	-.036	-.294	5.428	228.333	-.099
20-24	-.141	-.256	.480	.726	-.024
25-29	-.138	-.127	.292	.228	-.010
30-34	-.129	-.173	.355	.276	-.007
35-39	-.168	-.110	.405	.365	-.018
40-44	-.198	.019	.332	.466	-.038
45-49	-.197	.230	.253	.394	-.040
50-54	-.236	.477	.382	.168	-.051
55-59	-.309	.762	.562	.142	-.075

2. Ten year outmigration rates (86-96)

10-14	-.197	-.427	2.397	69.059	-.200
15-19	-.221	-.216	.051	.624	-.103
20-24	-.176	-.078	-.051	.152	-.078
25-29	-.123	.003	-.041	.064	-.044
30-34	-.179	.095	-.179	.128	-.102
35-39	-.201	.242	-.174	.046	-.102
40-44	-.193	.318	-.157	-.016	-.095
45-49	-.175	.199	-.170	-.113	-.107

3. Fifteen year outmigration rates (81-96)

15-19	-.193	-.446	5.757	371.333	-.191
20-24	-.292	-.314	.405	.989	-.100
25-29	-.244	-.124	.239	.307	-.053
30-34	-.285	-.094	.113	.440	-.108
35-39	-.335	.105	.161	.428	-.119
40-44	-.353	.342	.123	.443	-.129
45-49	-.338	.474	.039	.235	-.143

Table A19: Years Since Migration by Auckland & Rest of New Zealand, Region-of-Origin, and Gender, 1981, 1986 and 1996.

	Mean			Median		
	1981	1986	1996	1981	1986	1996
Female						
RoNZ						
UK & Ireland	19.2	20.9	24.3	18	20	24
Australia	15.5	17.2	18.6	13	15	19
Europe & Nth America	18.6	19.4	18.1	20	20	15
Pacific Islands	13.0	14.3	16.6	11	13	15
Asia	12.6	12.3	8.5	9	8	5
Other	14.0	15.4	13.7	13	13	9
Female						
Auckland						
UK & Ireland	17.3	19.5	22.6	16	18	23
Australia	16.4	18.1	18.5	14	16	19
Europe & Nth America	18.1	18.5	15.3	18	18	12
Pacific Islands	12.1	13.1	14.8	10	12	12
Asia	14.6	13.1	5.9	12	9	3
Other	14.1	15.2	10.8	13	13	6
Male						
RoNZ						
UK & Ireland	19.1	21.1	24.1	18	20	24
Australia	15.9	17.4	18.1	13	15	18
Europe & Nth America	19.5	20.9	19.7	22	23	18
Pacific Islands	12.4	14.5	17.5	10	13	16
Asia	13.6	13.5	9.5	8	9	5
Other	13.8	15.0	13.6	13	13	8
Male						
Auckland						
UK & Ireland	17.8	19.7	22.8	16	19	23
Australia	16.3	17.9	18.2	14	15	19
Europe & Nth America	18.2	19.1	16.2	19	19	13
Pacific Islands	11.9	13.1	14.9	9	12	12
Asia	14.6	14.1	6.3	10	9	4
Other	13.0	14.5	10.0	11	13	5
Total						
UK & Ireland	18.5	20.4	23.6	17	19	23
Australia	15.9	17.5	18.3	13	15	18
Europe & Nth America	18.8	19.7	17.7	20	20	15
Pacific Islands	12.2	13.5	15.4	9	12	13
Asia	13.6	13.1	7.2	9	8	4
Other	13.7	15.0	12.0	12	13	6
All Immigrants	17.1	18.4	17.0	16	17	15

Table A20: Average Age of Immigrants and New Zealanders, by Auckland & Rest of New Zealand, Region-of-Origin, and Gender, 1981, 1986 and 1996.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
RoNZ						
New Zealand	34.9	34.9	36.5			
UK & Ireland	41.9	42.0	44.4	34.2	33.2	33.6
Australia	36.3	36.8	37.3	28.3	29.8	31.0
Europe & Nth America	41.6	42.0	41.1	31.1	31.8	33.3
Pacific Islands	32.7	33.7	36.9	26.3	27.1	29.1
Asia	35.2	35.3	34.1	28.9	29.5	29.9
Other	35.7	35.9	36.8	30.7	30.8	32.3
Female						
Auckland						
New Zealand	34.3	34.5	35.4			
UK & Ireland	40.8	41.2	42.9	34.5	33.6	33.7
Australia	37.0	37.3	37.1	29.8	30.0	31.0
Europe & Nth America	40.9	40.8	39.5	31.4	31.8	33.8
Pacific Islands	33.1	33.7	36.2	27.7	27.8	30.5
Asia	37.0	36.4	34.3	29.6	30.6	32.5
Other	35.1	35.8	36.0	30.4	32.2	33.2
Male						
RoNZ						
New Zealand	34.5	34.6	36.2			
UK & Ireland	41.9	42.8	45.0	33.4	33.7	35.6
Australia	36.9	36.7	36.5	30.4	32.1	32.6
Europe & Nth America	42.9	43.9	43.0	32.0	33.1	34.9
Pacific Islands	32.6	34.3	37.9	26.5	27.1	28.8
Asia	35.1	35.9	34.2	28.1	29.8	29.5
Other	35.4	35.5	36.8	31.5	31.1	32.5
Male						
Auckland						
New Zealand	34.0	34.2	35.2			
UK & Ireland	41.5	42.2	43.9	33.7	34.5	35.3
Australia	37.5	37.2	36.9	31.3	31.6	33.1
Europe & Nth America	41.8	42.2	41.0	32.2	33.2	34.8
Pacific Islands	33.6	34.1	36.8	27.8	27.6	29.9
Asia	36.2	36.5	34.2	28.8	30.4	32.4
Other	34.4	35.4	36.1	30.9	32.0	33.6
Total						
New Zealand	34.5	34.6	36.0			
UK & Ireland	41.6	42.1	44.1	33.9	33.7	34.5
Australia	36.8	36.9	36.9	29.6	30.8	31.8
Europe & Nth America	42.0	42.5	41.3	31.6	32.4	34.1
Pacific Islands	33.0	33.9	36.7	27.2	27.5	29.8
Asia	35.7	35.9	34.2	28.7	29.9	31.5
Other	35.2	35.6	36.4	30.9	31.4	32.9

Table A21: Parental and Marital Status, Natives and all Immigrants, by Auckland & Rest of New Zealand, Region-of-Origin, and Gender, 1981, 1986 and 1996.

	1981			1986			1996		
	joint parent	sole parent	partner	joint parent	sole parent	partner	joint parent	sole parent	partner
Female									
RoNZ									
New Zealand	0.540	0.066	0.655	0.342	0.062	0.628	0.331	0.111	0.622
UK & Ireland	0.483	0.043	0.789	0.315	0.037	0.750	0.329	0.057	0.768
Australia	0.579	0.049	0.753	0.362	0.048	0.710	0.358	0.075	0.684
Europe & Nth America	0.492	0.039	0.814	0.317	0.038	0.759	0.365	0.051	0.747
Pacific Islands	0.692	0.074	0.682	0.473	0.070	0.650	0.462	0.141	0.658
Asia	0.572	0.036	0.710	0.341	0.038	0.691	0.456	0.056	0.652
Other	0.566	0.033	0.746	0.353	0.038	0.700	0.454	0.072	0.724
Female									
Auckland									
New Zealand	0.496	0.088	0.602	0.321	0.074	0.569	0.319	0.103	0.576
UK & Ireland	0.466	0.055	0.759	0.310	0.051	0.722	0.326	0.056	0.751
Australia	0.541	0.063	0.726	0.326	0.056	0.656	0.333	0.069	0.649
Europe & Nth America	0.473	0.047	0.781	0.317	0.039	0.736	0.387	0.048	0.749
Pacific Islands	0.647	0.099	0.657	0.438	0.091	0.606	0.461	0.152	0.649
Asia	0.540	0.033	0.732	0.339	0.032	0.715	0.457	0.064	0.682
Other	0.539	0.048	0.694	0.345	0.042	0.672	0.488	0.064	0.724
Male									
RoNZ									
New Zealand	0.599	0.011	0.612	0.383	0.014	0.588	0.360	0.022	0.596
UK & Ireland	0.536	0.011	0.774	0.347	0.012	0.745	0.356	0.014	0.777
Australia	0.598	0.015	0.677	0.380	0.013	0.630	0.380	0.016	0.609
Europe & Nth America	0.563	0.013	0.802	0.356	0.012	0.767	0.386	0.013	0.737
Pacific Islands	0.770	0.015	0.648	0.548	0.019	0.638	0.540	0.032	0.686
Asia	0.630	0.011	0.634	0.387	0.009	0.602	0.471	0.013	0.600
Other	0.621	0.012	0.656	0.386	0.010	0.638	0.469	0.016	0.659
Male									
Auckland									
New Zealand	0.560	0.011	0.566	0.355	0.013	0.550	0.328	0.018	0.565
UK & Ireland	0.519	0.011	0.753	0.343	0.013	0.727	0.346	0.012	0.768
Australia	0.577	0.010	0.672	0.368	0.012	0.607	0.365	0.011	0.611
Europe & Nth America	0.539	0.009	0.781	0.357	0.012	0.732	0.412	0.010	0.735
Pacific Islands	0.747	0.017	0.664	0.516	0.016	0.632	0.548	0.029	0.708
Asia	0.596	0.012	0.684	0.374	0.008	0.652	0.470	0.012	0.641
Other	0.598	0.006	0.646	0.364	0.012	0.628	0.502	0.010	0.676
Total									
New Zealand	0.559	0.041	0.622	0.356	0.039	0.596	0.339	0.065	0.599
UK & Ireland	0.504	0.028	0.771	0.330	0.026	0.738	0.340	0.034	0.767

Australia	0.576	0.035	0.712	0.361	0.033	0.659	0.360
0.045	0.643						
Europe & Nth America	0.524	0.024	0.798	0.338	0.023	0.753	0.384
0.030	0.741						
Pacific Islands	0.708	0.053	0.661	0.487	0.051	0.627	0.501
0.092	0.675						
Asia	0.589	0.022	0.684	0.361	0.022	0.661	0.462
0.038	0.649						
Other	0.582	0.024	0.688	0.363	0.025	0.661	0.478
0.039	0.695						

Table A22: Parental and Marital Status, Recent Immigrants, by Auckland & Rest of New Zealand, Region-of-Origin, and Gender, 1981, 1986 and 1996.

	1981			1986			1996		
	joint parent	sole parent	partner	joint parent	sole parent	partner	joint parent	sole parent	partner
Female									
RoNZ									
New Zealand	0.540	0.066	0.655	0.342	0.062	0.628	0.331	0.111	0.622
UK & Ireland	0.604	0.018	0.811	0.382	0.017	0.783	0.454	0.020	0.825
Australia	0.563	0.045	0.662	0.335	0.031	0.705	0.443	0.048	0.733
Europe & Nth America	0.590	0.020	0.769	0.336	0.014	0.764	0.436	0.032	0.747
Pacific Islands	0.663	0.052	0.488	0.470	0.033	0.454	0.375	0.117	0.508
Asia	0.600	0.028	0.617	0.313	0.024	0.613	0.425	0.056	0.561
Other	0.633	0.023	0.759	0.367	0.019	0.738	0.531	0.056	0.737
Female									
Auckland									
New Zealand	0.496	0.088	0.602	0.321	0.074	0.569	0.319	0.103	0.576
UK & Ireland	0.618	0.028	0.792	0.315	0.030	0.761	0.469	0.023	0.791
Australia	0.540	0.046	0.666	0.289	0.045	0.663	0.396	0.046	0.685
Europe & Nth America	0.577	0.019	0.803	0.340	0.012	0.778	0.476	0.034	0.784
Pacific Islands	0.608	0.087	0.512	0.426	0.062	0.432	0.357	0.107	0.527
Asia	0.584	0.017	0.676	0.316	0.015	0.663	0.455	0.066	0.667
Other	0.604	0.029	0.739	0.322	0.026	0.728	0.551	0.044	0.757
Male									
RoNZ									
New Zealand	0.599	0.011	0.612	0.383	0.014	0.588	0.360	0.022	0.596
UK & Ireland	0.639	0.007	0.747	0.368	0.003	0.719	0.468	0.005	0.773
Australia	0.611	0.007	0.573	0.365	0.007	0.634	0.474	0.011	0.637
Europe & Nth America	0.652	0.004	0.681	0.366	0.006	0.683	0.498	0.005	0.692
Pacific Islands	0.739	0.008	0.439	0.519	0.009	0.376	0.388	0.016	0.473
Asia	0.654	0.015	0.442	0.374	0.004	0.405	0.429	0.014	0.481
Other	0.705	0.000	0.668	0.408	0.007	0.596	0.533	0.007	0.646
Male									
Auckland									
New Zealand	0.560	0.011	0.566	0.355	0.013	0.550	0.328	0.018	0.565
UK & Ireland	0.604	0.005	0.768	0.343	0.005	0.749	0.432	0.011	0.777
Australia	0.596	0.006	0.599	0.368	0.006	0.591	0.456	0.007	0.671
Europe & Nth America	0.601	0.003	0.698	0.363	0.004	0.670	0.518	0.009	0.722
Pacific Islands	0.695	0.010	0.474	0.479	0.012	0.392	0.370	0.016	0.517
Asia	0.630	0.013	0.510	0.344	0.007	0.493	0.455	0.011	0.604
Other	0.700	0.009	0.677	0.321	0.009	0.624	0.552	0.007	0.674
Total									
New Zealand	0.559	0.041	0.622	0.356	0.039	0.596	0.339	0.065	0.599
UK & Ireland	0.617	0.013	0.778	0.356	0.012	0.751	0.456	0.014	0.791
Australia	0.579	0.027	0.624	0.341	0.022	0.658	0.444	0.029	0.684

Europe & Nth America	0.611	0.011	0.730	0.351	0.009	0.721	0.479	0.020	0.735
Pacific Islands	0.668	0.042	0.482	0.464	0.033	0.414	0.368	0.067	0.513
Asia	0.621	0.018	0.545	0.338	0.013	0.537	0.445	0.039	0.599
Other	0.663	0.014	0.711	0.361	0.014	0.667	0.542	0.027	0.702

Table A23: Educational Attainment, New Zealanders, All Immigrants and Recent Immigrants,
Auckland and Rest of New Zealand, 1981, 1986, and 1996.

	1981				1986				1996			
	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu
Rest of New Zealand												
All Immigrants	0.438	0.258	0.216	0.073	0.287	0.277	0.325	0.097	0.217	0.305	0.299	0.165
Recent Immigrants	0.328	0.290	0.208	0.147	0.185	0.300	0.318	0.170	0.119	0.335	0.250	0.260
New Zealanders	0.505	0.261	0.168	0.034	0.401	0.280	0.243	0.048	0.312	0.342	0.257	0.073
Auckland												
All Immigrants	0.488	0.260	0.190	0.044	0.340	0.280	0.295	0.068	0.250	0.334	0.256	0.144
Recent Immigrants	0.433	0.279	0.176	0.075	0.283	0.299	0.280	0.108	0.147	0.367	0.213	0.238
New Zealanders	0.467	0.283	0.176	0.043	0.351	0.298	0.262	0.064	0.251	0.361	0.274	0.100
Total												
All Immigrants	0.458	0.259	0.205	0.062	0.309	0.279	0.312	0.085	0.233	0.319	0.278	0.155
Recent Immigrants	0.372	0.286	0.195	0.116	0.228	0.300	0.301	0.142	0.135	0.353	0.229	0.247
New Zealanders	0.495	0.267	0.169	0.036	0.388	0.285	0.248	0.052	0.296	0.347	0.261	0.080

Table A24: Educational Attainment, New Zealanders and All Immigrants, by Region-of-Origin and Year, Total & by Gender.

	1981				1986				1996			
	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu
Female												
New Zealand	0.515	0.279	0.152	0.022	0.407	0.312	0.215	0.040	0.293	0.374	0.248	0.071
UK & Ireland	0.482	0.276	0.189	0.039	0.343	0.317	0.276	0.056	0.238	0.329	0.312	0.119
Australia	0.394	0.351	0.193	0.046	0.236	0.405	0.268	0.067	0.167	0.410	0.280	0.126
Europe & Nth America	0.432	0.322	0.160	0.072	0.220	0.368	0.288	0.113	0.133	0.326	0.314	0.214
Pacific Islands	0.713	0.177	0.069	0.007	0.539	0.276	0.147	0.014	0.444	0.335	0.183	0.029
Asia	0.428	0.295	0.146	0.110	0.331	0.314	0.191	0.145	0.205	0.394	0.172	0.200
Other	0.260	0.383	0.248	0.089	0.140	0.371	0.333	0.137	0.144	0.318	0.297	0.223
Male												
New Zealand	0.475	0.255	0.186	0.050	0.370	0.257	0.281	0.064	0.300	0.318	0.276	0.089
UK & Ireland	0.406	0.229	0.282	0.069	0.257	0.209	0.431	0.094	0.197	0.235	0.410	0.153
Australia	0.392	0.279	0.228	0.080	0.235	0.296	0.340	0.098	0.182	0.337	0.310	0.149
Europe & Nth America	0.384	0.265	0.252	0.089	0.181	0.245	0.433	0.131	0.127	0.281	0.369	0.212
Pacific Islands	0.712	0.178	0.066	0.017	0.536	0.243	0.167	0.028	0.460	0.304	0.180	0.046
Asia	0.332	0.305	0.141	0.202	0.249	0.296	0.207	0.226	0.168	0.366	0.161	0.266
Other	0.214	0.354	0.230	0.178	0.106	0.315	0.327	0.232	0.128	0.280	0.274	0.296
Total												
New Zealand	0.495	0.267	0.169	0.036	0.388	0.285	0.248	0.052	0.296	0.347	0.261	0.080
UK & Ireland	0.442	0.251	0.239	0.055	0.297	0.259	0.359	0.076	0.217	0.281	0.362	0.137
Australia	0.393	0.318	0.209	0.062	0.236	0.355	0.301	0.081	0.174	0.376	0.294	0.136
Europe & Nth America	0.405	0.290	0.212	0.082	0.198	0.300	0.368	0.123	0.130	0.303	0.342	0.213
Pacific Islands	0.712	0.177	0.068	0.012	0.538	0.260	0.157	0.021	0.451	0.320	0.182	0.037
Asia	0.378	0.300	0.143	0.158	0.290	0.305	0.199	0.186	0.188	0.381	0.167	0.230
Other	0.238	0.368	0.239	0.133	0.123	0.343	0.330	0.184	0.136	0.298	0.285	0.260

Table A25: Educational Attainment, New Zealanders and All Immigrants, by Region-of-Origin, Year, Gender & Auckland/RoNZ.

	1981				1986				1996			
	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu
Female RoNZ												
New Zealand	0.522	0.275	0.150	0.021	0.419	0.308	0.209	0.037	0.306	0.371	0.243	0.065
UK & Ireland	0.476	0.269	0.197	0.047	0.334	0.315	0.281	0.061	0.238	0.318	0.316	0.125
Australia	0.394	0.338	0.202	0.050	0.239	0.399	0.269	0.069	0.176	0.408	0.276	0.121
Europe & Nth America	0.445	0.309	0.157	0.076	0.233	0.358	0.284	0.113	0.146	0.321	0.312	0.209
Pacific Islands	0.669	0.202	0.085	0.010	0.500	0.290	0.164	0.020	0.418	0.329	0.200	0.042
Asia	0.425	0.294	0.140	0.119	0.319	0.322	0.184	0.155	0.203	0.380	0.177	0.209
Other	0.240	0.377	0.257	0.108	0.124	0.368	0.336	0.153	0.146	0.304	0.305	0.226
Female Auckland												
New Zealand	0.497	0.290	0.158	0.025	0.374	0.323	0.232	0.048	0.256	0.383	0.261	0.089
UK & Ireland	0.492	0.289	0.177	0.027	0.357	0.320	0.266	0.047	0.238	0.345	0.305	0.108
Australia	0.395	0.374	0.176	0.039	0.231	0.416	0.267	0.063	0.149	0.413	0.288	0.135
Europe & Nth America	0.409	0.348	0.167	0.064	0.195	0.388	0.296	0.110	0.112	0.336	0.318	0.224
Pacific Islands	0.735	0.164	0.062	0.005	0.557	0.269	0.138	0.011	0.454	0.337	0.176	0.024
Asia	0.434	0.296	0.155	0.095	0.352	0.302	0.202	0.128	0.206	0.404	0.168	0.193
Other	0.290	0.390	0.237	0.062	0.161	0.376	0.328	0.114	0.142	0.332	0.289	0.220
Male RoNZ												
New Zealand	0.488	0.248	0.184	0.046	0.383	0.252	0.277	0.059	0.318	0.312	0.271	0.081
UK & Ireland	0.400	0.222	0.281	0.082	0.257	0.201	0.428	0.104	0.203	0.226	0.403	0.164
Australia	0.395	0.262	0.231	0.090	0.242	0.285	0.339	0.101	0.194	0.330	0.303	0.147
Europe & Nth America	0.399	0.252	0.248	0.091	0.193	0.239	0.427	0.132	0.138	0.271	0.371	0.207
Pacific Islands	0.671	0.197	0.081	0.023	0.508	0.251	0.183	0.040	0.448	0.289	0.185	0.066
Asia	0.323	0.303	0.134	0.218	0.227	0.304	0.203	0.243	0.173	0.354	0.165	0.270
Other	0.193	0.342	0.226	0.214	0.098	0.313	0.311	0.258	0.137	0.271	0.271	0.298
Male Auckland												
New Zealand	0.436	0.275	0.194	0.061	0.327	0.272	0.294	0.081	0.245	0.337	0.289	0.112
UK & Ireland	0.415	0.238	0.285	0.048	0.257	0.219	0.436	0.077	0.187	0.249	0.421	0.137
Australia	0.388	0.306	0.222	0.065	0.224	0.314	0.344	0.091	0.160	0.348	0.323	0.152
Europe & Nth America	0.352	0.293	0.260	0.084	0.156	0.257	0.447	0.130	0.107	0.296	0.366	0.219
Pacific Islands	0.737	0.165	0.057	0.013	0.552	0.239	0.158	0.021	0.465	0.310	0.177	0.037
Asia	0.346	0.308	0.152	0.178	0.285	0.284	0.212	0.200	0.165	0.374	0.158	0.263
Other	0.244	0.368	0.235	0.129	0.119	0.316	0.351	0.196	0.120	0.288	0.277	0.294

Table A26: Educational Attainment, Recent Immigrants, by Region-of-Origin, Year, Gender & Auckland/RoNZ.

	1981				1986				1996			
	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu
Female												
New Zealand	0.515	0.279	0.152	0.022	0.407	0.312	0.215	0.040	0.293	0.374	0.248	0.071
UK & Ireland	0.358	0.268	0.270	0.090	0.216	0.314	0.353	0.100	0.092	0.283	0.368	0.250
Australia	0.315	0.370	0.223	0.077	0.166	0.412	0.302	0.101	0.113	0.380	0.292	0.196
Europe & Nth America	0.242	0.361	0.194	0.169	0.068	0.336	0.366	0.207	0.049	0.306	0.294	0.325
Pacific Islands	0.643	0.225	0.057	0.004	0.449	0.330	0.156	0.016	0.354	0.416	0.174	0.029
Asia	0.430	0.301	0.097	0.131	0.307	0.348	0.151	0.164	0.164	0.427	0.164	0.202
Other	0.208	0.359	0.258	0.138	0.076	0.333	0.345	0.221	0.125	0.299	0.256	0.289
Male												
New Zealand	0.475	0.255	0.186	0.050	0.370	0.257	0.281	0.064	0.300	0.318	0.276	0.089
UK & Ireland	0.260	0.231	0.333	0.155	0.134	0.183	0.490	0.174	0.076	0.205	0.406	0.302
Australia	0.318	0.292	0.227	0.144	0.164	0.293	0.364	0.153	0.121	0.324	0.308	0.228
Europe & Nth America	0.222	0.315	0.237	0.204	0.062	0.217	0.443	0.255	0.051	0.287	0.297	0.341
Pacific Islands	0.647	0.242	0.048	0.015	0.434	0.322	0.172	0.029	0.332	0.395	0.194	0.052
Asia	0.346	0.358	0.075	0.182	0.240	0.347	0.161	0.216	0.112	0.392	0.144	0.293
Other	0.164	0.348	0.170	0.279	0.072	0.277	0.295	0.328	0.106	0.248	0.242	0.369
Total												
New Zealand	0.495	0.267	0.169	0.036	0.388	0.285	0.248	0.052	0.296	0.347	0.261	0.080
UK & Ireland	0.307	0.248	0.302	0.124	0.172	0.244	0.426	0.139	0.084	0.242	0.388	0.277
Australia	0.316	0.333	0.225	0.109	0.165	0.357	0.331	0.125	0.117	0.354	0.299	0.211
Europe & Nth America	0.231	0.336	0.217	0.188	0.065	0.274	0.406	0.232	0.050	0.297	0.295	0.333
Pacific Islands	0.645	0.233	0.052	0.010	0.442	0.326	0.164	0.022	0.344	0.406	0.183	0.039
Asia	0.386	0.331	0.085	0.158	0.274	0.347	0.156	0.189	0.141	0.411	0.155	0.243
Other	0.186	0.354	0.214	0.209	0.074	0.304	0.318	0.277	0.115	0.272	0.248	0.331

Table A27: Educational Attainment, Recent Immigrants, by Region-of-Origin, Year, Gender & Auckland/RoNZ.

	1981				1986				1996			
	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu
Female RoNZ												
New Zealand	0.522	0.275	0.150	0.021	0.419	0.308	0.209	0.037	0.306	0.371	0.243	0.065
UK & Ireland	0.323	0.267	0.284	0.118	0.207	0.286	0.384	0.107	0.080	0.263	0.384	0.268
Australia	0.315	0.353	0.234	0.083	0.163	0.410	0.304	0.103	0.122	0.389	0.290	0.180
Europe & Nth America	0.242	0.346	0.196	0.180	0.069	0.333	0.365	0.209	0.050	0.298	0.292	0.330
Pacific Islands	0.573	0.271	0.075	0.008	0.384	0.355	0.181	0.027	0.319	0.435	0.171	0.041
Asia	0.422	0.309	0.090	0.138	0.272	0.368	0.150	0.176	0.148	0.425	0.173	0.204
Other	0.188	0.362	0.255	0.164	0.063	0.309	0.350	0.258	0.147	0.274	0.255	0.287
Female Auckland												
New Zealand	0.497	0.290	0.158	0.025	0.374	0.323	0.232	0.048	0.256	0.383	0.261	0.089
UK & Ireland	0.409	0.267	0.247	0.049	0.230	0.353	0.309	0.091	0.109	0.308	0.346	0.227
Australia	0.314	0.410	0.198	0.062	0.175	0.415	0.296	0.096	0.099	0.366	0.295	0.224
Europe & Nth America	0.243	0.388	0.190	0.145	0.067	0.337	0.370	0.204	0.047	0.316	0.296	0.319
Pacific Islands	0.680	0.201	0.047	0.002	0.478	0.319	0.144	0.011	0.369	0.407	0.175	0.024
Asia	0.448	0.286	0.108	0.118	0.364	0.314	0.151	0.144	0.173	0.428	0.159	0.201
Other	0.245	0.355	0.267	0.094	0.099	0.370	0.330	0.167	0.108	0.320	0.256	0.290
Male RoNZ												
New Zealand	0.488	0.248	0.184	0.046	0.383	0.252	0.277	0.059	0.318	0.312	0.271	0.081
UK & Ireland	0.238	0.218	0.332	0.191	0.141	0.182	0.465	0.194	0.075	0.200	0.398	0.321
Australia	0.325	0.275	0.212	0.168	0.172	0.278	0.364	0.160	0.136	0.321	0.299	0.222
Europe & Nth America	0.225	0.310	0.213	0.228	0.061	0.218	0.433	0.267	0.056	0.282	0.296	0.341
Pacific Islands	0.616	0.264	0.055	0.024	0.393	0.345	0.189	0.049	0.305	0.391	0.199	0.073
Asia	0.341	0.361	0.071	0.187	0.196	0.369	0.164	0.233	0.103	0.401	0.145	0.287
Other	0.141	0.323	0.161	0.330	0.069	0.278	0.259	0.354	0.139	0.239	0.213	0.369
Male Auckland												
New Zealand	0.436	0.275	0.194	0.061	0.327	0.272	0.294	0.081	0.245	0.337	0.289	0.112
UK & Ireland	0.292	0.252	0.337	0.098	0.126	0.180	0.529	0.144	0.078	0.213	0.418	0.276
Australia	0.303	0.329	0.252	0.099	0.152	0.316	0.366	0.142	0.096	0.329	0.323	0.237
Europe & Nth America	0.216	0.321	0.280	0.163	0.063	0.211	0.467	0.235	0.046	0.292	0.299	0.340
Pacific Islands	0.667	0.227	0.043	0.010	0.455	0.310	0.164	0.020	0.343	0.397	0.192	0.042
Asia	0.358	0.352	0.081	0.174	0.321	0.309	0.155	0.185	0.117	0.388	0.144	0.296
Other	0.196	0.383	0.182	0.209	0.077	0.272	0.344	0.295	0.081	0.255	0.265	0.369

Table A28: Educational Attainment, All and Recent Immigrants Aged 25-54, by Region-of-Origin and Year.

	1981				1986				1996			
	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu	noqual	schqu	vocqu	uniqu
Natives and All Immigrants												
New Zealand	0.542	0.200	0.211	0.047	0.409	0.223	0.300	0.069	0.305	0.302	0.296	0.096
UK & Ireland	0.426	0.226	0.281	0.067	0.278	0.227	0.400	0.095	0.183	0.271	0.384	0.162
Australia	0.396	0.294	0.238	0.072	0.229	0.325	0.345	0.100	0.167	0.338	0.330	0.164
Europe & Nth America	0.406	0.264	0.234	0.095	0.183	0.255	0.404	0.158	0.101	0.264	0.366	0.269
Pacific Islands	0.784	0.126	0.076	0.014	0.575	0.223	0.172	0.023	0.466	0.302	0.191	0.042
Asia	0.410	0.229	0.168	0.193	0.310	0.241	0.223	0.224	0.204	0.296	0.192	0.308
Other	0.247	0.303	0.285	0.165	0.122	0.277	0.375	0.225	0.124	0.239	0.317	0.320
Recent Immigrants												
UK & Ireland	0.303	0.205	0.340	0.153	0.171	0.190	0.472	0.166	0.072	0.215	0.410	0.302
Australia	0.316	0.294	0.257	0.133	0.155	0.322	0.365	0.157	0.114	0.310	0.332	0.243
Europe & Nth America	0.229	0.298	0.247	0.226	0.058	0.208	0.460	0.273	0.039	0.238	0.332	0.391
Pacific Islands	0.764	0.147	0.073	0.016	0.493	0.259	0.210	0.032	0.360	0.352	0.224	0.064
Asia	0.422	0.231	0.131	0.216	0.297	0.248	0.208	0.245	0.154	0.299	0.187	0.359
Other	0.185	0.281	0.263	0.270	0.074	0.226	0.360	0.336	0.094	0.199	0.287	0.421

Table A29: Proportion of Immigrants Speaking English Proficiently, by Region-of-Origin,
Years in New Zealand, and Gender, 1996.

	Years Since Migration					
	0-5	6-10	11-15	16-20	>20	Total
1. Female Immigrants						
Western Europe	0.983	0.986	0.987	0.988	0.980	0.983
Eastern Europe	0.849	0.934	0.958	0.958	0.970	0.895
Northeast Asia	0.627	0.716	0.730	0.789	0.840	0.658
Southeast Asia	0.837	0.895	0.868	0.939	0.989	0.878
Southern Asia	0.812	0.879	0.911	0.906	0.928	0.861
Pacific Islands	0.788	0.806	0.828	0.868	0.904	0.844
Other	0.965	0.986	0.993	0.996	0.998	0.991
Total	0.815	0.875	0.922	0.953	0.979	0.912
2. Male Immigrants						
Western Europe	0.981	0.991	0.990	0.989	0.982	0.985
Eastern Europe	0.895	0.975	0.980	0.969	0.970	0.931
Northeast Asia	0.684	0.697	0.756	0.807	0.898	0.703
Southeast Asia	0.837	0.891	0.853	0.934	0.992	0.878
Southern Asia	0.907	0.888	0.947	0.931	0.971	0.919
Pacific Islands	0.805	0.830	0.845	0.863	0.896	0.855
Other	0.971	0.988	0.994	0.997	0.998	0.992
Total	0.854	0.886	0.935	0.955	0.980	0.929
3. All Immigrants						
Western Europe	0.982	0.989	0.989	0.988	0.981	0.984
Eastern Europe	0.871	0.955	0.970	0.964	0.970	0.914
Northeast Asia	0.653	0.707	0.743	0.797	0.867	0.679
Southeast Asia	0.837	0.893	0.862	0.936	0.990	0.878
Southern Asia	0.861	0.885	0.930	0.920	0.951	0.893
Pacific Islands	0.796	0.817	0.836	0.866	0.900	0.849
Other	0.968	0.987	0.994	0.996	0.998	0.991
Total	0.834	0.880	0.928	0.954	0.980	0.920

Table A30: Proportion of Immigrants speaking English, by country of origin and Years since migration, 1996.

		Months in NZ			
		0-11	0-23	0-35	ESM*
Australia	1	.996	.996	.997	1
UK and Ireland	2	.994	.997	.997	1
Cook	3	.887	.886	.872	0
Fiji	4	.900	.901	.902	0
Niue	5	.884	.878	.884	0
Samoa	6	.600	.627	.638	0
Tokelau	7	.782	.730	.750	0
Tonga	8	.654	.675	.702	0
Germany	9	.992	.989	.990	1
Netherlands	10	.991	.988	.987	1
Switzerland	11	.957	.967	.968	1
Poland	12	.853	.860	.870	0
Yugoslavia	13	.837	.881	.883	0
Canada	14	.995	.997	.994	1
USA	15	.994	.995	.996	1
Kampuchea	16	.311	.349	.375	0
Indonesia	17	.824	.831	.849	0
Malaysia	18	.900	.897	.898	0
Phillipines	19	.978	.978	.973	1
Singapore	20	.980	.979	.977	1
Thailand	21	.783	.818	.824	0
Vietnam	22	.366	.377	.405	0
China	23	.472	.505	.516	0
Hong Kong	24	.757	.747	.760	0
Japan	25	.764	.782	.789	0
Korea	26	.514	.538	.555	0
Taiwan	27	.594	.650	.669	0
India	28	.840	.845	.843	0
Sri Lanka	29	.911	.912	.920	0
Iran	30	.539	.584	.631	0
Iraq	31	.788	.781	.769	0
South Africa	32	.995	.994	.994	1
Zimbabwe	33	1	.995	.997	1
Other	34	.838	.847	.854	0

ESM: Classification of English speaking countries if at least 95 percent of recent migrants speak English.

Table A31: Labour Force Status, New Zealanders, All Immigrants and Recent Immigrants, Auckland and Rest of New Zealand, 1981, 1986, and 1996.

	1981				1986				1996			
	ft	pt	ue	nolf	ft	pt	ue	nolf	ft	pt	ue	nolf
Rest of New Zealand												
All Immigrants	0.613	0.096	0.023	0.268	0.605	0.105	0.043	0.248	0.509	0.146	0.080	0.266
Recent Immigrants	0.586	0.069	0.038	0.309	0.563	0.080	0.058	0.300	0.387	0.109	0.117	0.388
New Zealanders	0.584	0.094	0.030	0.293	0.591	0.102	0.054	0.253	0.535	0.167	0.082	0.215
Auckland												
All Immigrants	0.630	0.086	0.032	0.252	0.634	0.093	0.044	0.229	0.496	0.121	0.103	0.281
Recent Immigrants	0.586	0.060	0.061	0.293	0.572	0.071	0.067	0.290	0.347	0.098	0.160	0.395
New Zealanders	0.592	0.089	0.038	0.281	0.624	0.098	0.047	0.231	0.587	0.155	0.073	0.186
Total												
All Immigrants	0.620	0.092	0.027	0.262	0.617	0.100	0.044	0.240	0.503	0.134	0.091	0.273
Recent Immigrants	0.586	0.065	0.048	0.301	0.566	0.076	0.063	0.296	0.364	0.103	0.141	0.392
New Zealanders	0.585	0.092	0.032	0.291	0.599	0.100	0.053	0.248	0.548	0.164	0.080	0.208

Note: "ue" represent unemployed/working age population.

Table A32: Employment Rates, Labour Force Participation Rates and Unemployment Rates, New Zealanders,
All Immigrants and Recent Immigrants, by Gender and Agegroup,
Rest of New Zealand, 1981, 1986, and 1996.

	1981			1986			1996	
	Emp	Lfp	Unemp	Emp	Lfp	Unemp	Emp	Lfp	Unemp
Female 15-24									
All Immigrants	0.534	0.595	0.096	0.539	0.641	0.159	0.423	0.557	0.242
Recent Immigrants	0.477	0.545	0.116	0.442	0.533	0.169	0.263	0.369	0.286
New Zealanders	0.542	0.613	0.111	0.560	0.667	0.160	0.575	0.729	0.211
Female 25-54									
All Immigrants	0.604	0.623	0.025	0.657	0.703	0.065	0.670	0.744	0.100
Recent Immigrants	0.511	0.546	0.054	0.534	0.587	0.090	0.513	0.629	0.184
New Zealanders	0.558	0.573	0.021	0.627	0.677	0.073	0.698	0.766	0.088
Female 55-64									
All Immigrants	0.316	0.325	0.019	0.318	0.334	0.050	0.407	0.438	0.070
Recent Immigrants	0.186	0.223	0.107	0.182	0.202	0.095	0.206	0.282	0.271
New Zealanders	0.247	0.253	0.009	0.267	0.279	0.042	0.405	0.436	0.071
Male 15-24									
All Immigrants	0.632	0.688	0.074	0.619	0.719	0.139	0.446	0.581	0.233
Recent Immigrants	0.585	0.649	0.076	0.516	0.610	0.153	0.265	0.381	0.303
New Zealanders	0.713	0.773	0.074	0.683	0.780	0.125	0.638	0.779	0.181
Male 25-54									
All Immigrants	0.954	0.976	0.022	0.934	0.962	0.028	0.821	0.903	0.091
Recent Immigrants	0.919	0.950	0.032	0.896	0.934	0.041	0.710	0.837	0.152
New Zealanders	0.955	0.977	0.023	0.937	0.964	0.028	0.853	0.918	0.070
Male 55-64									
All Immigrants	0.736	0.757	0.024	0.672	0.698	0.037	0.596	0.650	0.083
Recent Immigrants	0.638	0.700	0.070	0.530	0.599	0.115	0.404	0.498	0.190
New Zealanders	0.695	0.711	0.018	0.629	0.648	0.029	0.640	0.689	0.072

Table A33: Employment Rates, Labour Force Participation Rates and Unemployment Rates, New Zealanders,
All Immigrants and Recent Immigrants, by Gender and Agegroup,
Auckland, 1981, 1986, and 1996.

	1981			1986			1996	
	Emp	Lfp	Unemp	Emp	Lfp	Unemp	Emp	Lfp	Unemp
Female									
15-24									
All Immigrants	0.543	0.618	0.118	0.597	0.693	0.139	0.423	0.561	0.247
Recent Immigrants	0.470	0.566	0.161	0.492	0.594	0.171	0.282	0.413	0.317
New Zealanders	0.588	0.656	0.102	0.638	0.725	0.120	0.642	0.781	0.178
Female									
25-54									
All Immigrants	0.614	0.632	0.025	0.663	0.710	0.066	0.595	0.697	0.148
Recent Immigrants	0.527	0.568	0.065	0.531	0.599	0.113	0.432	0.594	0.273
New Zealanders	0.584	0.605	0.031	0.664	0.704	0.056	0.723	0.781	0.074
Female									
55-64									
All Immigrants	0.342	0.351	0.016	0.324	0.342	0.054	0.397	0.432	0.082
Recent Immigrants	0.154	0.169	0.067	0.127	0.168	0.245	0.168	0.240	0.303
New Zealanders	0.267	0.275	0.015	0.304	0.323	0.060	0.472	0.502	0.059
Male									
15-24									
All Immigrants	0.657	0.745	0.115	0.673	0.765	0.120	0.434	0.563	0.230
Recent Immigrants	0.601	0.702	0.137	0.609	0.704	0.135	0.275	0.396	0.305
New Zealanders	0.692	0.772	0.102	0.729	0.812	0.103	0.683	0.816	0.163
Male									
25-54									
All Immigrants	0.944	0.978	0.035	0.934	0.961	0.028	0.776	0.883	0.122
Recent Immigrants	0.904	0.959	0.058	0.890	0.930	0.043	0.627	0.822	0.237
New Zealanders	0.943	0.972	0.029	0.929	0.954	0.026	0.883	0.931	0.052
Male									
55-64									
All Immigrants	0.749	0.772	0.026	0.678	0.704	0.037	0.606	0.664	0.089
Recent Immigrants	0.597	0.706	0.14	0.409	0.477	0.142	0.324	0.446	0.272
New Zealanders	0.685	0.708	0.028	0.661	0.679	0.025	0.683	0.720	0.052

Table A34: Employment Rates, Labour Force Participation Rates and Unemployment Rates relative to
Natives, All Immigrants and Recent Immigrants, by Gender and Agegroup, 1981, 1986, and 1996.

	1981			1986			1996	
	Emp	Lfp	Unemp	Emp	Lfp	Unemp	Emp	Lfp	Unemp
Female									
15-24									
All Immigrants	0.97	0.97	0.96	0.97	0.97	1.00	0.71	0.75	1.20
Recent Immigrants	0.86	0.88	1.24	0.80	0.82	1.14	0.46	0.52	1.50
Female									
25-54									
All Immigrants	1.07	1.08	1.08	1.03	1.03	0.94	0.89	0.93	1.44
Recent Immigrants	0.92	0.95	2.56	0.83	0.86	1.46	0.66	0.79	2.75
Female									
55-64									
All Immigrants	1.29	1.31	1.8	1.15	0.16	1.13	0.95	0.96	1.08
Recent Immigrants	0.68	0.74	9.1	0.55	0.64	3.69	0.43	0.57	4.25
Male									
15-24									
All Immigrants	0.91	0.92	1.13	0.92	0.93	1.09	0.67	0.72	1.31
Recent Immigrants	0.84	0.86	1.27	0.80	0.83	1.19	0.41	0.49	1.72
Male									
25-54									
All Immigrants	0.99	1.00	1.12	0.99	1.00	1.03	0.92	0.96	1.60
Recent Immigrants	0.95	0.97	1.79	0.95	0.96	1.50	0.76	0.89	3.03
Male									
55-64									
All Immigrants	1.07	1.07	1.25	1.05	1.06	1.32	0.92	0.94	1.26
Recent Immigrants	0.89	0.97	5.15	0.73	0.81	4.50	0.54	0.67	3.52

Table A35: Labour Force Status, New Zealanders and all Immigrants, by Region-of-Origin and Gender.

	1981				1986				1996			
	ft	pt	ue	nolf	ft	pt	ue	nolf	ft	pt	ue	nolf
Female												
New Zealand	0.360	0.157	0.029	0.455	0.414	0.160	0.059	0.367	0.408	0.236	0.081	0.274
UK & Ireland	0.377	0.189	0.018	0.418	0.434	0.189	0.042	0.335	0.448	0.230	0.048	0.275
Australia	0.360	0.181	0.025	0.436	0.392	0.189	0.053	0.367	0.430	0.240	0.067	0.264
Europe & Nth America	0.341	0.172	0.018	0.470	0.362	0.170	0.043	0.425	0.383	0.216	0.082	0.320
Pacific Islands	0.419	0.084	0.041	0.457	0.433	0.098	0.078	0.390	0.365	0.126	0.134	0.375
Asia	0.422	0.118	0.023	0.439	0.431	0.112	0.049	0.409	0.280	0.119	0.114	0.488
Other	0.389	0.158	0.021	0.432	0.408	0.177	0.054	0.361	0.354	0.212	0.123	0.311
Male												
New Zealand	0.813	0.026	0.035	0.126	0.784	0.041	0.046	0.129	0.694	0.089	0.078	0.138
UK & Ireland	0.856	0.023	0.022	0.099	0.823	0.034	0.029	0.114	0.748	0.070	0.053	0.129
Australia	0.835	0.024	0.036	0.105	0.777	0.041	0.049	0.134	0.701	0.091	0.074	0.134
Europe & Nth America	0.858	0.024	0.028	0.090	0.795	0.042	0.030	0.133	0.665	0.084	0.080	0.171
Pacific Islands	0.808	0.016	0.077	0.098	0.750	0.053	0.071	0.126	0.560	0.084	0.137	0.219
Asia	0.760	0.029	0.026	0.185	0.750	0.035	0.044	0.171	0.420	0.088	0.139	0.353
Other	0.798	0.028	0.033	0.141	0.780	0.042	0.039	0.139	0.603	0.094	0.139	0.164
Total												
New Zealand	0.585	0.092	0.032	0.291	0.599	0.100	0.053	0.248	0.548	0.164	0.080	0.208
UK & Ireland	0.629	0.102	0.020	0.250	0.641	0.106	0.035	0.217	0.602	0.148	0.050	0.200
Australia	0.577	0.109	0.030	0.285	0.568	0.121	0.051	0.260	0.554	0.171	0.070	0.204
Europe & Nth America	0.631	0.089	0.024	0.257	0.600	0.099	0.036	0.264	0.526	0.149	0.081	0.244
Pacific Islands	0.614	0.050	0.059	0.277	0.590	0.076	0.074	0.260	0.457	0.106	0.135	0.301
Asia	0.598	0.072	0.024	0.307	0.591	0.073	0.046	0.290	0.345	0.105	0.125	0.425
Other	0.591	0.094	0.027	0.288	0.592	0.110	0.047	0.251	0.481	0.152	0.131	0.236

("ue" gives the proportion of unemployed in working age population)

Table A36: Labour Force Status, New Zealanders and all Immigrants, by Region-of-Origin, Gender & Auckland/RoNZ.

	1981				1986				1996			
	ft	pt	ue	nolf	ft	pt	ue	nolf	ft	pt	ue	nolf
Female RoNZ												
New Zealand	0.349	0.162	0.027	0.462	0.398	0.164	0.061	0.377	0.389	0.244	0.083	0.284
UK & Ireland	0.363	0.191	0.018	0.430	0.415	0.193	0.044	0.349	0.427	0.237	0.050	0.286
Australia	0.350	0.184	0.024	0.443	0.369	0.197	0.053	0.381	0.405	0.247	0.073	0.274
Europe & Nth America	0.329	0.176	0.017	0.479	0.344	0.171	0.043	0.442	0.370	0.224	0.071	0.335
Pacific Islands	0.391	0.117	0.032	0.461	0.405	0.129	0.076	0.391	0.344	0.153	0.127	0.376
Asia	0.411	0.119	0.023	0.447	0.413	0.113	0.052	0.422	0.300	0.135	0.097	0.468
Other	0.365	0.164	0.020	0.452	0.384	0.180	0.057	0.379	0.337	0.221	0.108	0.335
Female Auckland												
New Zealand	0.400	0.145	0.032	0.425	0.461	0.152	0.052	0.335	0.464	0.213	0.075	0.247
UK & Ireland	0.401	0.186	0.016	0.398	0.464	0.183	0.040	0.313	0.481	0.219	0.043	0.257
Australia	0.380	0.175	0.025	0.422	0.434	0.174	0.052	0.340	0.477	0.226	0.054	0.243
Europe & Nth America	0.366	0.164	0.021	0.450	0.399	0.168	0.042	0.391	0.404	0.203	0.100	0.293
Pacific Islands	0.433	0.068	0.044	0.455	0.447	0.084	0.079	0.390	0.373	0.115	0.137	0.374
Asia	0.439	0.115	0.022	0.425	0.460	0.110	0.042	0.388	0.266	0.108	0.125	0.501
Other	0.424	0.150	0.023	0.404	0.445	0.173	0.049	0.334	0.371	0.203	0.138	0.288
Male RoNZ												
New Zealand	0.820	0.025	0.032	0.123	0.782	0.040	0.047	0.130	0.687	0.088	0.081	0.144
UK & Ireland	0.854	0.021	0.021	0.104	0.814	0.034	0.031	0.122	0.721	0.074	0.061	0.144
Australia	0.835	0.024	0.033	0.108	0.767	0.041	0.053	0.139	0.677	0.096	0.081	0.146
Europe & Nth America	0.864	0.024	0.025	0.088	0.792	0.042	0.032	0.134	0.652	0.087	0.072	0.188
Pacific Islands	0.826	0.017	0.052	0.105	0.759	0.058	0.067	0.115	0.544	0.089	0.145	0.223
Asia	0.739	0.027	0.023	0.210	0.733	0.034	0.047	0.186	0.451	0.083	0.113	0.353
Other	0.788	0.027	0.030	0.155	0.769	0.037	0.042	0.151	0.610	0.091	0.118	0.181
Male Auckland												
New Zealand	0.797	0.031	0.044	0.128	0.795	0.041	0.042	0.123	0.716	0.094	0.070	0.120
UK & Ireland	0.859	0.027	0.024	0.090	0.839	0.034	0.025	0.102	0.790	0.065	0.040	0.105
Australia	0.837	0.024	0.040	0.099	0.796	0.042	0.037	0.125	0.745	0.081	0.061	0.112
Europe & Nth America	0.847	0.026	0.034	0.092	0.807	0.043	0.023	0.127	0.685	0.079	0.093	0.143
Pacific Islands	0.799	0.016	0.092	0.093	0.746	0.051	0.072	0.131	0.567	0.082	0.133	0.218
Asia	0.794	0.033	0.029	0.144	0.779	0.036	0.039	0.145	0.401	0.091	0.155	0.353
Other	0.813	0.030	0.036	0.120	0.800	0.046	0.033	0.120	0.595	0.098	0.160	0.147

("ue" gives the proportion of unemployed in working age population)

Table A37: Labour Force Status, Recent Immigrants, by Region-of-Origin and Gender.

	1981				1986				1996			
	ft	pt	ue	nolf	ft	pt	ue	nolf	ft	pt	ue	nolf
Female												
New Zealand	0.360	0.157	0.029	0.455	0.414	0.160	0.059	0.367	0.408	0.236	0.081	0.274
UK & Ireland	0.391	0.153	0.037	0.419	0.448	0.157	0.045	0.350	0.502	0.177	0.072	0.250
Australia	0.437	0.112	0.051	0.400	0.393	0.140	0.069	0.399	0.448	0.200	0.079	0.274
Europe & Nth America	0.332	0.120	0.034	0.514	0.357	0.149	0.059	0.436	0.348	0.159	0.146	0.347
Pacific Islands	0.359	0.044	0.070	0.527	0.360	0.060	0.107	0.473	0.251	0.101	0.168	0.480
Asia	0.362	0.072	0.037	0.530	0.352	0.067	0.063	0.517	0.183	0.088	0.138	0.592
Other	0.376	0.114	0.028	0.482	0.349	0.111	0.086	0.455	0.272	0.161	0.186	0.381
Male												
New Zealand	0.813	0.026	0.035	0.126	0.784	0.041	0.046	0.129	0.694	0.089	0.078	0.138
UK & Ireland	0.870	0.022	0.031	0.077	0.850	0.037	0.032	0.080	0.783	0.058	0.068	0.090
Australia	0.855	0.024	0.051	0.070	0.803	0.032	0.057	0.109	0.748	0.072	0.073	0.107
Europe & Nth America	0.821	0.027	0.043	0.109	0.803	0.039	0.036	0.122	0.588	0.078	0.146	0.188
Pacific Islands	0.703	0.020	0.099	0.178	0.629	0.054	0.097	0.219	0.393	0.102	0.173	0.332
Asia	0.620	0.036	0.034	0.310	0.641	0.031	0.061	0.267	0.273	0.081	0.173	0.473
Other	0.722	0.026	0.049	0.203	0.709	0.041	0.057	0.192	0.496	0.091	0.207	0.206
Total												
New Zealand	0.585	0.092	0.032	0.291	0.599	0.100	0.053	0.248	0.548	0.164	0.080	0.208
UK & Ireland	0.639	0.085	0.034	0.242	0.663	0.093	0.038	0.206	0.648	0.115	0.070	0.167
Australia	0.634	0.071	0.051	0.245	0.581	0.090	0.063	0.266	0.589	0.140	0.076	0.195
Europe & Nth America	0.595	0.070	0.039	0.297	0.589	0.092	0.047	0.272	0.463	0.120	0.146	0.271
Pacific Islands	0.532	0.032	0.085	0.352	0.488	0.057	0.103	0.352	0.316	0.102	0.170	0.413
Asia	0.499	0.053	0.035	0.413	0.492	0.049	0.062	0.396	0.224	0.085	0.154	0.538
Other	0.551	0.070	0.038	0.341	0.539	0.074	0.071	0.316	0.389	0.124	0.197	0.290

Table A38: Labour Force Status, Recent Immigrants, by Region-of-Origin, Gender & Auckland/RoNZ.

	1981				1986				1996			
	ft	pt	ue	nolf	ft	pt	ue	nolf	ft	pt	ue	nolf
Female RoNZ												
New Zealand	0.349	0.162	0.027	0.462	0.398	0.164	0.061	0.377	0.389	0.244	0.083	0.284
UK & Ireland	0.384	0.153	0.037	0.426	0.450	0.165	0.037	0.349	0.474	0.189	0.077	0.260
Australia	0.435	0.111	0.054	0.402	0.375	0.140	0.071	0.414	0.406	0.216	0.089	0.288
Europe & Nth America	0.322	0.117	0.032	0.529	0.346	0.153	0.056	0.445	0.344	0.170	0.114	0.372
Pacific Islands	0.334	0.063	0.048	0.555	0.330	0.069	0.099	0.502	0.219	0.113	0.156	0.512
Asia	0.342	0.076	0.034	0.549	0.320	0.071	0.068	0.541	0.184	0.089	0.112	0.615
Other	0.349	0.120	0.023	0.507	0.331	0.115	0.088	0.466	0.242	0.155	0.159	0.444
Female Auckland												
New Zealand	0.400	0.145	0.032	0.425	0.461	0.152	0.052	0.335	0.464	0.213	0.075	0.247
UK & Ireland	0.401	0.154	0.037	0.408	0.446	0.147	0.056	0.350	0.538	0.161	0.065	0.236
Australia	0.442	0.116	0.046	0.398	0.434	0.139	0.062	0.365	0.516	0.173	0.061	0.250
Europe & Nth America	0.348	0.123	0.040	0.490	0.381	0.142	0.060	0.416	0.354	0.145	0.186	0.315
Pacific Islands	0.371	0.035	0.080	0.513	0.374	0.056	0.110	0.460	0.265	0.097	0.173	0.465
Asia	0.404	0.064	0.041	0.492	0.406	0.060	0.055	0.479	0.182	0.088	0.152	0.578
Other	0.427	0.101	0.036	0.436	0.385	0.101	0.080	0.434	0.296	0.166	0.208	0.329
Male RoNZ												
New Zealand	0.820	0.025	0.032	0.123	0.782	0.040	0.047	0.130	0.687	0.088	0.081	0.144
UK & Ireland	0.878	0.021	0.024	0.079	0.857	0.031	0.031	0.080	0.755	0.064	0.078	0.103
Australia	0.855	0.027	0.048	0.070	0.786	0.030	0.066	0.117	0.716	0.075	0.084	0.125
Europe & Nth America	0.826	0.027	0.037	0.109	0.804	0.037	0.036	0.122	0.594	0.080	0.110	0.215
Pacific Islands	0.712	0.022	0.060	0.206	0.615	0.061	0.097	0.226	0.336	0.112	0.193	0.360
Asia	0.590	0.033	0.029	0.347	0.615	0.030	0.066	0.289	0.261	0.069	0.138	0.532
Other	0.695	0.021	0.049	0.235	0.674	0.035	0.071	0.220	0.506	0.083	0.170	0.241
Male Auckland												
New Zealand	0.797	0.031	0.044	0.128	0.795	0.041	0.042	0.123	0.716	0.094	0.070	0.120
UK & Ireland	0.857	0.023	0.043	0.077	0.849	0.046	0.031	0.075	0.821	0.051	0.055	0.074
Australia	0.858	0.021	0.053	0.068	0.834	0.036	0.038	0.093	0.803	0.065	0.054	0.078
Europe & Nth America	0.809	0.029	0.053	0.109	0.810	0.042	0.033	0.114	0.580	0.075	0.188	0.157
Pacific Islands	0.699	0.019	0.123	0.160	0.636	0.051	0.097	0.216	0.417	0.098	0.164	0.320
Asia	0.674	0.042	0.041	0.243	0.689	0.032	0.053	0.226	0.279	0.087	0.191	0.443
Other	0.765	0.034	0.050	0.151	0.766	0.048	0.036	0.150	0.487	0.097	0.237	0.179

Table A39: Male Employment Rates, Labour Force Participation Rates and Unemployment Rates,
All Immigrants, by Agegroup, and Region-of-Origin, 1981, 1986, 1996.

	1981			1986			1996	
	Emp	Lfp	Unemp	Emp	Lfp	Unemp	Emp	Lfp	Unemp
15-24									
New Zealand	0.704	0.766	0.081	0.693	0.788	0.121	0.650	0.789	0.176
UK & Ireland	0.674	0.733	0.080	0.721	0.803	0.103	0.688	0.809	0.150
Australia	0.677	0.742	0.087	0.609	0.720	0.154	0.645	0.777	0.170
Europe & Nth America	0.632	0.687	0.081	0.603	0.690	0.126	0.516	0.629	0.180
Pacific Islands	0.633	0.738	0.143	0.618	0.741	0.167	0.491	0.669	0.266
Asia	0.486	0.519	0.064	0.451	0.556	0.188	0.216	0.326	0.339
Other	0.595	0.637	0.066	0.561	0.649	0.137	0.481	0.655	0.266
25-54									
New Zealand	0.952	0.976	0.024	0.935	0.961	0.028	0.861	0.921	0.066
UK & Ireland	0.967	0.984	0.017	0.953	0.973	0.021	0.898	0.946	0.051
Australia	0.943	0.975	0.033	0.923	0.955	0.033	0.872	0.930	0.063
Europe & Nth America	0.947	0.973	0.027	0.934	0.957	0.025	0.837	0.921	0.091
Pacific Islands	0.903	0.973	0.071	0.885	0.941	0.060	0.715	0.848	0.156
Asia	0.910	0.933	0.025	0.909	0.934	0.027	0.640	0.799	0.199
Other	0.925	0.955	0.032	0.922	0.947	0.027	0.758	0.896	0.154
55-64									
New Zealand	0.692	0.706	0.020	0.636	0.654	0.028	0.650	0.696	0.067
UK & Ireland	0.737	0.755	0.024	0.669	0.694	0.036	0.644	0.691	0.068
Australia	0.693	0.706	0.019	0.673	0.696	0.032	0.662	0.704	0.060
Europe & Nth America	0.780	0.798	0.023	0.701	0.724	0.033	0.601	0.652	0.079
Pacific Islands	0.695	0.749	0.071	0.592	0.634	0.067	0.408	0.506	0.195
Asia	0.745	0.771	0.033	0.706	0.744	0.051	0.487	0.562	0.133
Other	0.787	0.810	0.028	0.696	0.723	0.037	0.642	0.711	0.097
Total									
New Zealand	0.839	0.874	0.040	0.825	0.871	0.053	0.783	0.862	0.091
UK & Ireland	0.879	0.901	0.025	0.857	0.886	0.033	0.819	0.871	0.061
Australia	0.859	0.895	0.040	0.818	0.866	0.056	0.792	0.866	0.085
Europe & Nth America	0.883	0.911	0.031	0.837	0.867	0.035	0.749	0.829	0.096
Pacific Islands	0.825	0.902	0.086	0.804	0.874	0.081	0.644	0.781	0.175
Asia	0.789	0.815	0.032	0.785	0.829	0.053	0.508	0.647	0.214
Other	0.826	0.859	0.038	0.822	0.861	0.045	0.697	0.836	0.166

Table A40: Male Employment Rates, Labour Force Participation Rates and Unemployment Rates,
Recent Immigrants, by Agegroup and Region-of-Origin, 1981, 1986, 1996.

	1981			1986			1996	
	Emp	Lfp	Unemp	Emp	Lfp	Unemp	Emp	Lfp	Unemp
15-24									
New Zealand	0.704	0.766	0.081	0.693	0.788	0.121	0.650	0.789	0.176
UK & Ireland	0.668	0.734	0.090	0.708	0.770	0.080	0.621	0.759	0.182
Australia	0.768	0.833	0.078	0.654	0.748	0.126	0.604	0.732	0.174
Europe & Nth America	0.598	0.645	0.073	0.590	0.641	0.080	0.358	0.459	0.221
Pacific Islands	0.597	0.707	0.155	0.575	0.694	0.172	0.410	0.587	0.300
Asia	0.457	0.483	0.053	0.390	0.492	0.207	0.147	0.240	0.389
Other	0.434	0.486	0.107	0.466	0.568	0.179	0.379	0.566	0.330
25-54									
New Zealand	0.952	0.976	0.024	0.935	0.961	0.028	0.861	0.921	0.066
UK & Ireland	0.959	0.981	0.022	0.944	0.970	0.026	0.893	0.954	0.064
Australia	0.926	0.974	0.049	0.902	0.947	0.048	0.888	0.945	0.060
Europe & Nth America	0.924	0.966	0.043	0.908	0.941	0.035	0.741	0.899	0.176
Pacific Islands	0.856	0.944	0.093	0.812	0.890	0.088	0.608	0.780	0.221
Asia	0.821	0.857	0.043	0.839	0.875	0.041	0.488	0.714	0.317
Other	0.864	0.906	0.046	0.843	0.883	0.046	0.650	0.865	0.249
55-64									
New Zealand	0.692	0.706	0.020	0.636	0.654	0.028	0.650	0.696	0.067
UK & Ireland	0.629	0.686	0.083	0.448	0.500	0.103	0.446	0.500	0.109
Australia	0.712	0.725	0.017	0.583	0.631	0.075	0.646	0.732	0.117
Europe & Nth America	0.681	0.708	0.038	0.645	0.685	0.059	0.528	0.628	0.159
Pacific Islands	0.512	0.636	0.195	0.271	0.346	0.215	0.234	0.386	0.395
Asia	0.553	0.684	0.192	0.542	0.645	0.160	0.264	0.385	0.314
Other	0.667	0.944	0.294	0.350	0.550	0.364	0.486	0.643	0.244
Total									
New Zealand	0.839	0.874	0.040	0.825	0.871	0.053	0.783	0.862	0.091
UK & Ireland	0.892	0.923	0.034	0.888	0.920	0.035	0.841	0.910	0.075
Australia	0.879	0.930	0.055	0.835	0.891	0.063	0.820	0.893	0.082
Europe & Nth America	0.848	0.891	0.048	0.842	0.878	0.042	0.666	0.812	0.179
Pacific Islands	0.723	0.822	0.121	0.684	0.781	0.125	0.495	0.668	0.258
Asia	0.656	0.690	0.049	0.672	0.733	0.084	0.354	0.527	0.329
Other	0.748	0.797	0.062	0.751	0.808	0.071	0.586	0.794	0.261

Table A41: Female Employment Rates, Labour Force Participation Rates and Unemployment Rates,
All Immigrants, by Agegroup, Year and Region-of-Origin.

	1981			1986			1996	
	Emp	Lfp	Unemp	Emp	Lfp	Unemp	Emp	Lfp	Unemp
15-24									
New Zealand	0.550	0.618	0.110	0.580	0.682	0.150	0.593	0.743	0.202
UK & Ireland	0.594	0.650	0.087	0.662	0.752	0.120	0.679	0.791	0.142
Australia	0.574	0.642	0.105	0.538	0.653	0.176	0.616	0.751	0.179
Europe & Nth America	0.524	0.579	0.094	0.530	0.615	0.138	0.522	0.647	0.192
Pacific Islands	0.437	0.532	0.179	0.485	0.606	0.200	0.424	0.624	0.320
Asia	0.449	0.490	0.085	0.431	0.515	0.163	0.228	0.337	0.324
Other	0.554	0.592	0.063	0.552	0.645	0.144	0.473	0.638	0.259
25-54									
New Zealand	0.563	0.577	0.023	0.636	0.683	0.069	0.704	0.770	0.085
UK & Ireland	0.644	0.658	0.021	0.713	0.754	0.055	0.756	0.805	0.061
Australia	0.572	0.587	0.027	0.636	0.678	0.062	0.720	0.774	0.070
Europe & Nth America	0.559	0.574	0.026	0.609	0.653	0.067	0.672	0.759	0.114
Pacific Islands	0.548	0.570	0.039	0.576	0.643	0.104	0.536	0.665	0.194
Asia	0.603	0.622	0.029	0.612	0.653	0.063	0.473	0.594	0.205
Other	0.583	0.602	0.030	0.636	0.683	0.069	0.605	0.726	0.166
55-64									
New Zealand	0.251	0.253	0.010	0.276	0.289	0.046	0.420	0.450	0.068
UK & Ireland	0.325	0.330	0.015	0.322	0.337	0.044	0.447	0.472	0.053
Australia	0.311	0.317	0.018	0.355	0.370	0.041	0.489	0.507	0.035
Europe & Nth America	0.336	0.343	0.021	0.311	0.332	0.061	0.364	0.398	0.086
Pacific Islands	0.298	0.309	0.034	0.266	0.297	0.102	0.280	0.333	0.159
Asia	0.353	0.362	0.025	0.328	0.351	0.067	0.304	0.354	0.140
Other	0.353	0.359	0.016	0.333	0.362	0.081	0.417	0.469	0.111
Total									
New Zealand	0.517	0.546	0.053	0.574	0.633	0.093	0.644	0.726	0.112
UK & Ireland	0.566	0.583	0.030	0.623	0.665	0.063	0.678	0.725	0.066
Australia	0.541	0.566	0.044	0.580	0.633	0.084	0.670	0.736	0.091
Europe & Nth America	0.513	0.532	0.035	0.532	0.575	0.076	0.599	0.680	0.120
Pacific Islands	0.503	0.543	0.075	0.531	0.610	0.128	0.491	0.625	0.215
Asia	0.539	0.562	0.041	0.543	0.591	0.082	0.399	0.512	0.222
Other	0.547	0.568	0.037	0.585	0.639	0.085	0.566	0.689	0.178

Table A42: Female Employment Rates, Labour Force Participation Rates and Unemployment Rates,
Recent Immigrants, by Agegroup, Year and Region-of-Origin.

	1981			1986			1996	
	Emp	Lfp	Unemp	Emp	Lfp	Unemp	Emp	Lfp Unemp
15-24								
New Zealand	0.550	0.618	0.110	0.580	0.682	0.150	0.593	0.743 0.202
UK & Ireland	0.566	0.647	0.126	0.612	0.669	0.085	0.647	0.723 0.104
Australia	0.619	0.697	0.111	0.587	0.695	0.156	0.634	0.746 0.151
Europe & Nth America	0.451	0.512	0.120	0.486	0.557	0.129	0.358	0.472 0.241
Pacific Islands	0.389	0.486	0.199	0.437	0.562	0.222	0.341	0.534 0.361
Asia	0.405	0.447	0.095	0.348	0.426	0.182	0.167	0.264 0.368
Other	0.479	0.517	0.074	0.412	0.513	0.198	0.342	0.522 0.344
25-54								
New Zealand	0.563	0.577	0.023	0.636	0.683	0.069	0.704	0.770 0.085
UK & Ireland	0.584	0.614	0.048	0.632	0.678	0.067	0.705	0.778 0.094
Australia	0.520	0.556	0.066	0.522	0.576	0.094	0.661	0.730 0.095
Europe & Nth America	0.465	0.491	0.053	0.523	0.579	0.097	0.554	0.710 0.219
Pacific Islands	0.449	0.493	0.090	0.441	0.534	0.175	0.397	0.556 0.285
Asia	0.466	0.499	0.066	0.475	0.530	0.105	0.332	0.494 0.329
Other	0.499	0.522	0.044	0.482	0.568	0.151	0.470	0.662 0.289
55-64								
New Zealand	0.251	0.253	0.010	0.276	0.289	0.046	0.420	0.450 0.068
UK & Ireland	0.156	0.172	0.091	0.216	0.216	0.000	0.254	0.296 0.143
Australia	0.255	0.255	0.000	0.256	0.280	0.087	0.286	0.286 0.000
Europe & Nth America	0.200	0.210	0.045	0.162	0.197	0.174	0.232	0.322 0.279
Pacific Islands	0.092	0.112	0.182	0.058	0.110	0.471	0.143	0.225 0.363
Asia	0.243	0.279	0.129	0.105	0.175	0.400	0.154	0.229 0.331
Other	0.370	0.407	0.091	0.294	0.294	0.000	0.213	0.329 0.352
Total								
New Zealand	0.517	0.546	0.053	0.574	0.633	0.093	0.644	0.726 0.112
UK & Ireland	0.544	0.581	0.064	0.605	0.650	0.070	0.678	0.750 0.096
Australia	0.549	0.600	0.085	0.532	0.601	0.114	0.648	0.726 0.108
Europe & Nth America	0.452	0.486	0.070	0.505	0.564	0.104	0.507	0.653 0.223
Pacific Islands	0.404	0.473	0.148	0.420	0.527	0.203	0.353	0.520 0.322
Asia	0.434	0.471	0.078	0.419	0.483	0.132	0.271	0.408 0.337
Other	0.490	0.518	0.053	0.459	0.545	0.158	0.433	0.619 0.301

Table A43: Employment Rates, All and Recent Immigrants, by Qualification, Year, Region-of-Origin and Gender.

I. All Immigrants

II. Recent Immigrants

	1981			1986			1996		
1981	1986		1996						
	Female	Male	Total	Female	Male	Total	Female	Male	Total
Female	Male	Total	Female	Male	Total	Female	Male	Total	
No qualification									
New Zealand	0.431	0.807	0.610	0.472	0.763	0.611	0.492	0.675	0.583
UK & Ireland	0.505	0.848	0.671	0.533	0.796	0.655	0.530	0.702	0.611
0.475	0.844	0.641	0.471	0.771	0.601	0.409	0.693	0.549	
Australia	0.469	0.825	0.631	0.471	0.721	0.586	0.499	0.637	0.567
0.450	0.843	0.637	0.401	0.674	0.527	0.533	0.683	0.607	
Europe & Nth America	0.452	0.863	0.670	0.428	0.771	0.600	0.435	0.616	0.525
0.359	0.781	0.574	0.365	0.644	0.506	0.373	0.506	0.436	
Pacific Islands	0.482	0.838	0.659	0.482	0.792	0.635	0.400	0.578	0.485
0.394	0.769	0.579	0.357	0.690	0.511	0.289	0.444	0.357	
Asia	0.518	0.825	0.660	0.534	0.791	0.647	0.381	0.481	0.424
0.416	0.760	0.584	0.459	0.732	0.579	0.289	0.332	0.306	
Other	0.460	0.783	0.608	0.462	0.714	0.572	0.342	0.485	0.413
0.407	0.587	0.494	0.301	0.612	0.464	0.177	0.319	0.249	
Total	0.440	0.813	0.618	0.477	0.766	0.615	0.484	0.664	0.573
0.423	0.791	0.600	0.407	0.708	0.544	0.304	0.414	0.352	
School qualification									
New Zealand	0.582	0.804	0.688	0.599	0.790	0.686	0.671	0.785	0.722
UK & Ireland	0.592	0.835	0.709	0.627	0.819	0.709	0.681	0.795	0.730
0.524	0.818	0.666	0.583	0.799	0.670	0.602	0.779	0.680	
Australia	0.560	0.823	0.665	0.578	0.767	0.650	0.665	0.770	0.708
0.568	0.840	0.680	0.506	0.790	0.613	0.598	0.757	0.666	
Europe & Nth America	0.532	0.842	0.690	0.498	0.778	0.624	0.562	0.707	0.631
0.435	0.802	0.618	0.447	0.717	0.558	0.423	0.580	0.495	
Pacific Islands	0.518	0.734	0.627	0.549	0.775	0.654	0.530	0.671	0.593
0.397	0.579	0.492	0.439	0.617	0.523	0.359	0.469	0.408	
Asia	0.491	0.650	0.575	0.476	0.651	0.561	0.325	0.399	0.358
0.386	0.466	0.432	0.335	0.488	0.409	0.204	0.243	0.221	
Other	0.517	0.748	0.626	0.544	0.721	0.624	0.557	0.647	0.600
0.456	0.674	0.563	0.421	0.627	0.520	0.408	0.496	0.450	
Total	0.579	0.805	0.687	0.596	0.789	0.683	0.649	0.762	0.700
0.476	0.701	0.588	0.463	0.659	0.549	0.324	0.414	0.364	
Vocational qualification									
New Zealand	0.691	0.955	0.836	0.714	0.923	0.832	0.745	0.871	0.810
UK & Ireland	0.660	0.947	0.840	0.704	0.898	0.829	0.738	0.857	0.807
0.613	0.952	0.807	0.682	0.939	0.840	0.746	0.866	0.812	
Australia	0.625	0.939	0.782	0.655	0.911	0.787	0.733	0.866	0.797
0.607	0.932	0.762	0.592	0.909	0.752	0.686	0.882	0.781	
Europe & Nth America	0.605	0.944	0.831	0.602	0.883	0.784	0.647	0.788	0.724
0.541	0.926	0.769	0.538	0.911	0.750	0.537	0.704	0.618	
Pacific Islands	0.689	0.920	0.802	0.685	0.887	0.792	0.620	0.738	0.675
0.562	0.790	0.667	0.587	0.800	0.694	0.476	0.627	0.548	
Asia	0.634	0.918	0.780	0.617	0.892	0.759	0.462	0.617	0.532
0.546	0.802	0.665	0.477	0.873	0.675	0.308	0.442	0.364	
Other	0.664	0.946	0.799	0.650	0.909	0.777	0.655	0.784	0.718
0.628	0.928	0.747	0.500	0.859	0.675	0.541	0.700	0.622	
Total	0.684	0.953	0.835	0.707	0.917	0.828	0.730	0.858	0.797
0.595	0.929	0.775	0.593	0.906	0.769	0.512	0.688	0.596	
University qualification									
New Zealand	0.726	0.925	0.864	0.759	0.930	0.865	0.832	0.906	0.873
UK & Ireland	0.733	0.936	0.868	0.779	0.928	0.877	0.817	0.909	0.870
0.698	0.963	0.871	0.720	0.943	0.868	0.782	0.898	0.848	
Australia	0.715	0.938	0.847	0.735	0.920	0.837	0.801	0.911	0.856
0.741	0.962	0.880	0.719	0.949	0.848	0.769	0.919	0.845	
Europe & Nth America	0.643	0.926	0.816	0.692	0.901	0.815	0.705	0.832	0.769
0.574	0.926	0.780	0.616	0.907	0.782	0.602	0.753	0.676	
Pacific Islands	0.685	0.798	0.766	0.673	0.801	0.758	0.755	0.834	0.802
0.444	0.545	0.524	0.536	0.629	0.594	0.553	0.651	0.611	
Asia	0.637	0.841	0.774	0.613	0.856	0.761	0.514	0.617	0.569
0.533	0.721	0.648	0.457	0.734	0.610	0.359	0.474	0.422	
Other	0.649	0.890	0.808	0.685	0.898	0.818	0.639	0.784	0.723
0.488	0.882	0.751	0.532	0.805	0.702	0.519	0.690	0.619	
Total	0.717	0.922	0.857	0.750	0.924	0.858	0.786	0.871	0.832
0.622	0.894	0.794	0.599	0.865	0.758	0.519	0.648	0.589	

Table A44: Participation Rates, All and Recent Immigrants, by Qualification, Year, Region-of-Origin and Gender.

I. All Immigrants

II. Recent Immigrants

	1981			1986			1996		
1981	1986		1996						
	Female	Male	Total	Female	Male	Total	Female	Male	Total
Female	Male	Total	Female	Male	Total	Female	Male	Total	
No qualification									
New Zealand	0.463	0.856	0.650	0.536	0.826	0.675	0.596	0.785	0.690
UK & Ireland	0.522	0.874	0.693	0.576	0.835	0.696	0.578	0.772	0.669
0.516	0.885	0.682	0.522	0.829	0.655	0.485	0.807	0.644	
Australia	0.494	0.873	0.667	0.530	0.789	0.650	0.590	0.746	0.666
0.505	0.916	0.700	0.486	0.765	0.614	0.642	0.794	0.717	
Europe & Nth America	0.465	0.895	0.693	0.460	0.804	0.633	0.495	0.686	0.590
0.384	0.840	0.616	0.401	0.688	0.546	0.473	0.601	0.534	
Pacific Islands	0.522	0.924	0.722	0.555	0.868	0.709	0.530	0.728	0.625
0.465	0.880	0.670	0.449	0.789	0.606	0.450	0.626	0.528	
Asia	0.540	0.862	0.689	0.571	0.834	0.687	0.466	0.588	0.519
0.457	0.807	0.628	0.513	0.788	0.634	0.388	0.442	0.410	
Other	0.489	0.822	0.642	0.509	0.770	0.623	0.472	0.658	0.564
0.458	0.660	0.555	0.355	0.689	0.531	0.342	0.557	0.450	
Total	0.470	0.861	0.657	0.539	0.828	0.677	0.585	0.774	0.678
0.475	0.864	0.661	0.477	0.785	0.618	0.419	0.550	0.477	
School qualification									
New Zealand	0.612	0.829	0.715	0.667	0.843	0.747	0.753	0.865	0.803
UK & Ireland	0.611	0.866	0.733	0.677	0.862	0.757	0.736	0.866	0.792
0.555	0.860	0.702	0.627	0.845	0.714	0.690	0.879	0.773	
Australia	0.584	0.861	0.695	0.637	0.836	0.713	0.735	0.861	0.787
0.620	0.901	0.736	0.580	0.868	0.688	0.683	0.858	0.758	
Europe & Nth America	0.551	0.875	0.716	0.548	0.820	0.671	0.644	0.792	0.714
0.467	0.849	0.658	0.513	0.768	0.618	0.565	0.713	0.634	
Pacific Islands	0.566	0.793	0.681	0.645	0.854	0.742	0.674	0.802	0.731
0.469	0.649	0.563	0.564	0.728	0.641	0.528	0.642	0.579	
Asia	0.512	0.669	0.595	0.537	0.716	0.624	0.431	0.520	0.470
0.411	0.481	0.452	0.404	0.570	0.484	0.320	0.373	0.343	
Other	0.535	0.783	0.652	0.605	0.787	0.688	0.677	0.795	0.734
0.477	0.722	0.597	0.507	0.735	0.617	0.581	0.708	0.641	
Total	0.608	0.831	0.714	0.662	0.842	0.743	0.732	0.846	0.783
0.516	0.746	0.630	0.540	0.737	0.626	0.447	0.550	0.493	
Vocational qualification									
New Zealand	0.704	0.969	0.849	0.755	0.943	0.862	0.808	0.921	0.867
UK & Ireland	0.676	0.960	0.854	0.738	0.916	0.852	0.781	0.899	0.849
0.651	0.977	0.838	0.727	0.961	0.871	0.815	0.927	0.876	
Australia	0.648	0.958	0.803	0.697	0.935	0.820	0.785	0.917	0.849
0.652	0.965	0.801	0.653	0.950	0.803	0.753	0.937	0.842	
Europe & Nth America	0.626	0.962	0.850	0.645	0.906	0.814	0.729	0.860	0.801
0.589	0.964	0.811	0.600	0.945	0.796	0.694	0.867	0.778	
Pacific Islands	0.715	0.954	0.833	0.754	0.928	0.846	0.756	0.860	0.804
0.610	0.852	0.721	0.710	0.866	0.788	0.656	0.781	0.716	
Asia	0.649	0.937	0.797	0.656	0.920	0.793	0.586	0.744	0.657
0.573	0.848	0.702	0.533	0.906	0.720	0.467	0.618	0.531	
Other	0.675	0.970	0.816	0.699	0.925	0.810	0.757	0.893	0.824
0.637	0.974	0.770	0.597	0.884	0.737	0.712	0.872	0.794	
Total	0.698	0.967	0.849	0.748	0.937	0.857	0.795	0.912	0.856
0.634	0.961	0.810	0.659	0.939	0.816	0.645	0.816	0.727	
University qualification									
New Zealand	0.760	0.942	0.887	0.801	0.954	0.896	0.877	0.950	0.917
UK & Ireland	0.757	0.951	0.886	0.808	0.946	0.899	0.859	0.940	0.905
0.736	0.975	0.893	0.758	0.966	0.896	0.838	0.939	0.895	
Australia	0.744	0.952	0.867	0.772	0.934	0.861	0.854	0.945	0.899
0.781	0.969	0.899	0.753	0.960	0.870	0.831	0.949	0.891	
Europe & Nth America	0.688	0.946	0.846	0.738	0.927	0.849	0.802	0.925	0.864
0.614	0.942	0.806	0.669	0.932	0.819	0.755	0.908	0.830	
Pacific Islands	0.708	0.829	0.794	0.736	0.863	0.820	0.842	0.914	0.884
0.444	0.652	0.607	0.629	0.723	0.688	0.736	0.802	0.775	
Asia	0.677	0.862	0.801	0.674	0.888	0.805	0.674	0.815	0.749
0.587	0.753	0.689	0.536	0.790	0.677	0.575	0.752	0.671	
Other	0.682	0.918	0.838	0.746	0.923	0.857	0.787	0.923	0.866
0.520	0.913	0.782	0.618	0.840	0.757	0.745	0.904	0.838	
Total	0.751	0.940	0.880	0.791	0.948	0.889	0.847	0.934	0.895
0.664	0.914	0.822	0.657	0.899	0.801	0.689	0.841	0.772	

Table A45: Unemployment Rates, All and Recent Immigrants, by Qualification, Year, Region-of-Origin and Gender.

I. All Immigrants

II. Recent Immigrants

	1981			1986			1996		
1981	1986		1996						
	Female	Male	Total	Female	Male	Total	Female	Male	Total
Female	Male	Total	Female	Male	Total	Female	Male	Total	
No qualification									
New Zealand	0.069	0.057	0.062	0.119	0.077	0.094	0.174	0.140	0.155
UK & Ireland	0.033	0.030	0.031	0.075	0.047	0.059	0.082	0.091	0.087
0.079	0.047	0.060	0.098	0.070	0.083	0.157	0.142	0.147	
Australia	0.051	0.054	0.053	0.113	0.086	0.098	0.153	0.146	0.149
0.111	0.079	0.091	0.174	0.118	0.142	0.170	0.140	0.154	
Europe & Nth America	0.028	0.036	0.033	0.070	0.041	0.051	0.122	0.103	0.111
0.066	0.070	0.069	0.090	0.064	0.073	0.212	0.158	0.183	
Pacific Islands	0.077	0.093	0.087	0.131	0.088	0.105	0.246	0.207	0.224
0.153	0.126	0.136	0.206	0.126	0.158	0.358	0.292	0.323	
Asia	0.041	0.042	0.042	0.065	0.052	0.058	0.183	0.182	0.183
0.089	0.059	0.070	0.107	0.071	0.087	0.256	0.249	0.253	
Other	0.060	0.048	0.053	0.091	0.073	0.081	0.275	0.263	0.268
0.112	0.110	0.111	0.152	0.113	0.125	0.481	0.427	0.448	
Total	0.065	0.056	0.059	0.115	0.075	0.092	0.173	0.142	0.155
0.108	0.084	0.093	0.148	0.098	0.119	0.275	0.247	0.261	
School qualification									
New Zealand	0.049	0.030	0.038	0.101	0.063	0.082	0.108	0.093	0.101
UK & Ireland	0.030	0.036	0.033	0.075	0.050	0.063	0.074	0.083	0.078
0.055	0.048	0.051	0.069	0.055	0.063	0.127	0.114	0.121	
Australia	0.042	0.044	0.043	0.092	0.083	0.088	0.095	0.106	0.100
0.084	0.068	0.076	0.129	0.089	0.110	0.125	0.118	0.121	
Europe & Nth America	0.035	0.037	0.037	0.092	0.051	0.070	0.127	0.107	0.116
0.068	0.056	0.060	0.129	0.066	0.096	0.252	0.188	0.219	
Pacific Islands	0.085	0.074	0.079	0.149	0.092	0.119	0.213	0.164	0.189
0.154	0.108	0.126	0.221	0.153	0.185	0.320	0.269	0.295	
Asia	0.041	0.029	0.034	0.115	0.091	0.102	0.245	0.233	0.239
0.062	0.032	0.043	0.169	0.144	0.155	0.361	0.348	0.355	
Other	0.035	0.045	0.040	0.101	0.084	0.092	0.178	0.186	0.182
0.045	0.066	0.057	0.169	0.147	0.156	0.297	0.299	0.298	
Total	0.047	0.031	0.038	0.099	0.063	0.081	0.113	0.100	0.107
0.078	0.061	0.068	0.141	0.106	0.123	0.275	0.248	0.262	
Vocational qualification									
New Zealand	0.018	0.014	0.015	0.054	0.021	0.034	0.078	0.054	0.065
UK & Ireland	0.023	0.013	0.016	0.045	0.020	0.028	0.055	0.046	0.049
0.059	0.025	0.037	0.062	0.022	0.035	0.085	0.066	0.074	
Australia	0.035	0.021	0.026	0.059	0.026	0.040	0.066	0.055	0.061
0.069	0.034	0.049	0.094	0.043	0.063	0.089	0.059	0.073	
Europe & Nth America	0.034	0.019	0.022	0.067	0.026	0.037	0.113	0.084	0.096
0.081	0.040	0.052	0.103	0.037	0.058	0.226	0.188	0.206	
Pacific Islands	0.037	0.036	0.036	0.092	0.044	0.064	0.179	0.141	0.160
0.079	0.073	0.076	0.173	0.077	0.120	0.275	0.198	0.235	
Asia	0.023	0.020	0.021	0.060	0.030	0.042	0.211	0.170	0.191
0.048	0.055	0.052	0.106	0.037	0.062	0.341	0.285	0.313	
Other	0.016	0.025	0.021	0.070	0.017	0.040	0.135	0.122	0.128
0.013	0.047	0.030	0.162	0.029	0.084	0.241	0.197	0.216	
Total	0.020	0.014	0.016	0.054	0.022	0.034	0.083	0.059	0.069
0.062	0.033	0.043	0.099	0.035	0.058	0.207	0.157	0.180	
University qualification									
New Zealand	0.045	0.019	0.026	0.052	0.025	0.034	0.050	0.046	0.048
UK & Ireland	0.033	0.017	0.021	0.035	0.020	0.024	0.049	0.032	0.039
0.053	0.013	0.024	0.050	0.024	0.031	0.067	0.044	0.053	
Australia	0.040	0.015	0.024	0.048	0.016	0.029	0.062	0.036	0.048
0.051	0.007	0.021	0.046	0.011	0.024	0.074	0.032	0.051	
Europe & Nth America	0.066	0.021	0.035	0.062	0.028	0.040	0.121	0.101	0.110
0.065	0.017	0.032	0.079	0.027	0.045	0.203	0.171	0.186	
Pacific Islands	0.033	0.037	0.036	0.085	0.072	0.076	0.102	0.087	0.093
0.000	0.163	0.137	0.148	0.130	0.136	0.248	0.188	0.211	
Asia	0.058	0.024	0.034	0.091	0.036	0.054	0.237	0.243	0.241
0.091	0.043	0.059	0.147	0.072	0.098	0.376	0.369	0.372	
Other	0.049	0.031	0.036	0.082	0.027	0.045	0.189	0.151	0.165
0.061	0.034	0.040	0.139	0.043	0.072	0.303	0.237	0.262	
Total	0.045	0.019	0.026	0.052	0.026	0.035	0.073	0.067	0.070
0.062	0.021	0.034	0.088	0.037	0.054	0.247	0.229	0.236	

Table A46: Immigrant Employment Rates minus Native Employment Rates for different Age/Period-of-Arrival cohorts by Region-of-Origin, 1996

	Period of Arrival					
	91-95	86-90	81-85	76-80	71-75	66-70
Pacific Island Immigrants						
21-25	-.201	-.117	-.126	-.132	-.048	
26-30	-.177	-.152	-.111	-.145	-.058	-.033
31-35	-.191	-.137	-.142	-.110	-.099	-.023
36-40	-.241	-.134	-.149	-.146	-.137	-.088
41-45	-.255	-.168	-.215	-.189	-.156	-.139
46-50	-.345	-.221	-.309	-.224	-.192	-.151
51-55	-.525	-.281	-.356	-.304	-.288	-.198
56-60	-.453	-.366	-.373	-.258	-.281	-.232
Asian Immigrants						
21-25	-.442	-.242	-.057	-.002	-.046	
26-30	-.248	-.065	-.015	0.104	0.072	0.061
31-35	-.255	-.043	-.043	0.012	0.072	0.020
36-40	-.325	-.066	-.065	0.025	0.078	-.028
41-45	-.402	-.116	-.076	-.034	0.015	-.038
46-50	-.393	-.171	-.131	-.031	0.003	0.019
51-55	-.404	-.210	-.132	-.019	0.011	0.008
56-60	-.414	-.231	-.155	-.055	0.033	-.082
Other Immigrants						
21-25	-.040	0.032	0.038	0.032	0.062	
26-30	0.030	0.033	0.026	0.048	0.048	0.056
31-35	0.015	0.042	0.019	-.005	0.032	0.039
36-40	-.019	0.030	0.027	0.015	0.043	0.032
41-45	-.069	0.004	0.008	0.015	0.009	-.011
46-50	-.052	0.006	0.029	0.042	0.037	0.025
51-55	-.152	0.029	0.036	0.063	0.045	0.050
56-60	-.132	-.007	0.081	0.063	0.050	0.055

Table A47: Immigrant Employment Rates minus Native Employment Rates for different Age/Period-of-Arrival cohorts by Region-of-Origin, 1981

Age in 1981	Period of Arrival 76-80	71-75	66-70
Pacific Island Immigrants			
21-25	-.078	-.060	-.027
26-30	-.018	-.029	0.002
31-35	-.065	-.019	-.021
36-40	-.082	-.037	-.027
41-45	-.087	-.063	-.027
Asian Immigrants			
21-25	-.217	-.072	-.020
26-30	-.030	0.037	0.028
31-35	-.071	0.001	0.101
36-40	-.053	0	0.050
41-45	-.069	0.001	-.008
Other Immigrants			
21-25	0.017	0.016	0.005
26-30	0.028	0.001	0.015
31-35	0.019	0.015	-.011
36-40	-.002	0.038	0.020
41-45	0.027	0.050	0.047

Table A48: Immigrant minus native employment rates, working age population, 1981 and 1996,
by Period-of-Arrival and Region-of-Origin, for immigrants aged 21-25 years and 36-40 years in 1981.

Region-of-Origin Age in Year	Period of Arrival 76-80	 71-75	 66-70
Pacific Islands			
1981: 21-25	-.078	-.060	-.027
1996: 36-40	-.146	-.137	-.088
1981: 41-45	-.087	-.063	-.027
1996: 56-60	-.258	-.281	-.232
Asia			
1981: 21-25	-.217	-.072	-.020
1996: 36-40	0.025	0.078	-.028
1981: 41-45	-.069	0.001	-.008
1996: 56-60	-.055	0.033	-.082
Other Regions			
1981: 21-25	0.017	0.016	0.005
1996: 36-40	0.015	0.043	0.032
1981: 41-45	0.027	0.050	0.047
1996: 56-60	0.063	0.050	0.055

Table A49: Employment Rates, Labour Force Participation Rates and Unemployment Rates, by country of origin and year, all immigrants.

Country of Origin	1981 emp	1981 lfp	1981 unemp	1986 emp	1986 lfp	1986 unemp	1996 emp	1996 lfp	1996 unemp
Australia	0.686	0.716	0.042	0.689	0.740	0.069	0.726	0.796	0.088
UK and Ireland	0.731	0.751	0.027	0.748	0.783	0.045	0.750	0.800	0.063
Cook Islands	0.659	0.735	0.104	0.666	0.741	0.101	0.533	0.672	0.208
Fiji	0.677	0.704	0.039	0.678	0.739	0.082	0.651	0.748	0.130
Niue	0.663	0.736	0.099	0.670	0.750	0.106	0.582	0.712	0.183
Samoa	0.676	0.732	0.077	0.678	0.752	0.099	0.550	0.697	0.210
Tokelau	0.578	0.643	0.102	0.619	0.704	0.122	0.419	0.615	0.319
Tonga	0.644	0.708	0.090	0.614	0.703	0.126	0.525	0.679	0.228
Germany	0.705	0.727	0.030	0.704	0.740	0.048	0.683	0.756	0.095
Netherlands	0.738	0.757	0.026	0.704	0.737	0.046	0.693	0.737	0.060
Switzerland	0.755	0.771	0.021	0.732	0.755	0.031	0.712	0.769	0.073
Poland	0.720	0.740	0.027	0.668	0.704	0.051	0.554	0.680	0.185
Yugoslavia	0.729	0.748	0.026	0.713	0.732	0.026	0.542	0.775	0.301
Canada	0.662	0.698	0.052	0.673	0.723	0.069	0.740	0.805	0.081
USA	0.663	0.697	0.049	0.685	0.730	0.061	0.706	0.771	0.084
Kampuchea	0.683	0.722	0.053	0.634	0.694	0.085	0.507	0.649	0.219
Indonesia	0.695	0.711	0.022	0.610	0.649	0.060	0.487	0.551	0.117
Malaysia	0.523	0.544	0.038	0.551	0.627	0.121	0.495	0.586	0.154
Phillipines	0.510	0.548	0.070	0.536	0.605	0.114	0.629	0.745	0.155
Singapore	0.519	0.550	0.057	0.583	0.650	0.103	0.647	0.718	0.099
Thailand	0.389	0.422	0.077	0.489	0.559	0.125	0.357	0.439	0.187
Vietnam	0.696	0.759	0.083	0.702	0.765	0.083	0.482	0.652	0.261
China	0.792	0.809	0.021	0.756	0.780	0.031	0.484	0.652	0.258
Hong Kong	0.669	0.693	0.034	0.651	0.700	0.070	0.328	0.418	0.216
Japan	0.549	0.560	0.020	0.619	0.639	0.032	0.439	0.491	0.106
Korea	0.444	0.467	0.048	0.708	0.726	0.025	0.290	0.413	0.297
Taiwan	0.479	0.521	0.081	0.496	0.548	0.095	0.194	0.296	0.342
India	0.740	0.761	0.027	0.746	0.777	0.039	0.616	0.754	0.183
Sri Lanka	0.684	0.705	0.030	0.707	0.753	0.061	0.558	0.770	0.275
Iran	0.663	0.699	0.052	0.591	0.699	0.154	0.454	0.683	0.336
Iraq	0.348	0.391	0.111	0.551	0.622	0.115	0.219	0.660	0.667
South Africa	0.694	0.717	0.032	0.698	0.744	0.061	0.753	0.830	0.093
Zimbabwe	0.652	0.687	0.051	0.747	0.790	0.054	0.772	0.830	0.069

Table A50: Employment Rates, Labour Force Participation Rates and Unemployment Rates, by country of origin and year, recent immigrants.

Country of Origin	1981 emp	1981 lfp	1981 unemp	1986 emp	1986 lfp	1986 unemp	1996 emp	1996 lfp	1996 unemp
Australia	0.705	0.756	0.067	0.671	0.734	0.086	0.729	0.805	0.094
UK and Ireland	0.724	0.759	0.045	0.756	0.794	0.048	0.763	0.833	0.084
Cook Islands	0.563	0.701	0.197	0.606	0.718	0.157	0.353	0.587	0.398
Fiji	0.561	0.592	0.052	0.480	0.585	0.180	0.480	0.626	0.233
Niue	0.550	0.697	0.211	0.601	0.740	0.188	0.383	0.563	0.319
Samoa	0.596	0.670	0.110	0.573	0.669	0.143	0.414	0.610	0.320
Tokelau	0.367	0.461	0.203	0.403	0.573	0.296	0.188	0.488	0.615
Tonga	0.543	0.614	0.115	0.450	0.558	0.193	0.383	0.551	0.305
Germany	0.666	0.701	0.050	0.653	0.694	0.060	0.592	0.667	0.112
Netherlands	0.646	0.689	0.063	0.705	0.751	0.062	0.736	0.803	0.083
Switzerland	0.769	0.793	0.030	0.705	0.737	0.043	0.567	0.645	0.121
Poland	0.686	0.729	0.059	0.766	0.826	0.073	0.528	0.787	0.329
Yugoslavia	0.600	0.656	0.085	0.707	0.756	0.065	0.467	0.794	0.412
Canada	0.715	0.745	0.041	0.684	0.739	0.074	0.703	0.771	0.088
USA	0.625	0.660	0.053	0.640	0.680	0.059	0.606	0.672	0.098
Kampuchea	0.666	0.704	0.055	0.605	0.668	0.094	0.330	0.524	0.371
Indonesia	0.526	0.559	0.059	0.368	0.421	0.127	0.268	0.347	0.227
Malaysia	0.356	0.371	0.041	0.307	0.408	0.249	0.236	0.344	0.315
Phillipines	0.462	0.500	0.076	0.500	0.576	0.132	0.558	0.698	0.201
Singapore	0.372	0.393	0.054	0.407	0.466	0.127	0.400	0.467	0.144
Thailand	0.315	0.342	0.079	0.365	0.418	0.127	0.263	0.339	0.225
Vietnam	0.685	0.750	0.087	0.644	0.720	0.106	0.269	0.519	0.481
China	0.676	0.717	0.057	0.653	0.699	0.066	0.375	0.603	0.379
Hong Kong	0.626	0.651	0.038	0.547	0.612	0.106	0.223	0.318	0.298
Japan	0.511	0.521	0.019	0.596	0.607	0.019	0.374	0.425	0.121
Korea	0.353	0.382	0.077	0.722	0.740	0.024	0.278	0.402	0.307
Taiwan	0.435	0.478	0.091	0.424	0.458	0.074	0.160	0.259	0.382
India	0.688	0.726	0.053	0.663	0.718	0.077	0.471	0.717	0.344
Sri Lanka	0.595	0.637	0.065	0.637	0.700	0.090	0.382	0.717	0.467
Iran	0.644	0.689	0.065	0.536	0.664	0.193	0.313	0.610	0.486
Iraq	0.130	0.217	0.400	0.449	0.551	0.184	0.195	0.660	0.704
South Africa	0.672	0.701	0.041	0.650	0.733	0.114	0.720	0.816	0.118
Zimbabwe	0.567	0.599	0.053	0.635	0.676	0.060	0.740	0.801	0.077

Table A51: Self Employment as a Proportion of Total Employment, Recent and All Immigrants,
by Region-of-Origin and Gender.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
New Zealand	0.070	0.100	0.123	0.070	0.100	0.123
UK & Ireland	0.060	0.097	0.142	0.033	0.062	0.090
Australia	0.081	0.125	0.137	0.058	0.099	0.099
Europe & Nth America	0.126	0.182	0.206	0.076	0.155	0.149
Pacific Islands	0.019	0.035	0.055	0.012	0.029	0.067
Asia	0.174	0.195	0.203	0.078	0.092	0.170
Other	0.080	0.117	0.146	0.064	0.080	0.130
Male						
New Zealand	0.170	0.220	0.242	0.170	0.220	0.242
UK & Ireland	0.120	0.185	0.250	0.063	0.128	0.157
Australia	0.123	0.187	0.212	0.082	0.113	0.147
Europe & Nth America	0.226	0.308	0.328	0.126	0.195	0.188
Pacific Islands	0.029	0.053	0.108	0.014	0.033	0.082
Asia	0.205	0.243	0.286	0.059	0.076	0.242
Other	0.130	0.200	0.223	0.077	0.115	0.149
Total						
New Zealand	0.136	0.171	0.187	0.136	0.171	0.187
UK & Ireland	0.101	0.151	0.203	0.053	0.104	0.129
Australia	0.107	0.159	0.175	0.073	0.107	0.125
Europe & Nth America	0.198	0.265	0.275	0.112	0.181	0.171
Pacific Islands	0.025	0.045	0.084	0.013	0.032	0.075
Asia	0.194	0.223	0.247	0.066	0.082	0.208
Other	0.112	0.165	0.189	0.072	0.102	0.141

Table A52: Self Employment as a Proportion of Total Employment, Recent and All Immigrants, by Region-of-Origin, Gender & Auckland/RoNZ.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
RoNZ						
New Zealand	0.076	0.102	0.127			
UK & Ireland	0.068	0.099	0.150	0.042	0.056	0.094
Australia	0.089	0.130	0.144	0.066	0.106	0.115
Europe & Nth America	0.138	0.181	0.210	0.080	0.155	0.157
Pacific Islands	0.024	0.034	0.062	0.013	0.023	0.059
Asia	0.185	0.199	0.203	0.086	0.081	0.146
Other	0.092	0.119	0.149	0.073	0.057	0.126
Female						
Auckland						
New Zealand	0.050	0.093	0.115			
UK & Ireland	0.049	0.095	0.131	0.021	0.070	0.087
Australia	0.069	0.118	0.126	0.041	0.086	0.075
Europe & Nth America	0.104	0.184	0.199	0.065	0.155	0.140
Pacific Islands	0.017	0.035	0.052	0.012	0.032	0.071
Asia	0.159	0.190	0.204	0.061	0.104	0.183
Other	0.063	0.115	0.143	0.051	0.115	0.134
Male						
RoNZ						
New Zealand	0.180	0.219	0.239			
UK & Ireland	0.126	0.175	0.241	0.058	0.122	0.157
Australia	0.124	0.175	0.203	0.079	0.110	0.147
Europe & Nth America	0.232	0.298	0.328	0.114	0.180	0.195
Pacific Islands	0.031	0.052	0.116	0.014	0.036	0.071
Asia	0.214	0.236	0.272	0.055	0.073	0.173
Other	0.145	0.192	0.209	0.090	0.112	0.127
Male						
Auckland						
New Zealand	0.134	0.223	0.251			
UK & Ireland	0.112	0.200	0.263	0.068	0.136	0.157
Australia	0.121	0.208	0.228	0.091	0.119	0.147
Europe & Nth America	0.215	0.329	0.328	0.153	0.224	0.179
Pacific Islands	0.028	0.053	0.104	0.014	0.031	0.086
Asia	0.193	0.253	0.296	0.066	0.082	0.272
Other	0.111	0.212	0.236	0.061	0.116	0.166

Table A53: Proportion of full-time workers who reported weekly hours above 40, Recent and All Immigrants, by Region-of-Origin, Gender & Auckland/RoNZ.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
RoNZ						
New Zealand	0.171	0.266	0.368			
UK & Ireland	0.144	0.231	0.357	0.155	0.363	0.193
Australia	0.189	0.276	0.396	0.221	0.441	0.266
Europe & Nth America	0.204	0.295	0.431	0.245	0.441	0.320
Pacific Islands	0.108	0.173	0.253	0.091	0.315	0.147
Asia	0.258	0.335	0.393	0.158	0.356	0.232
Other	0.181	0.266	0.421	0.186	0.423	0.253
Female						
Auckland						
New Zealand	0.149	0.247	0.394			
UK & Ireland	0.115	0.221	0.356	0.117	0.381	0.300
Australia	0.151	0.275	0.425	0.152	0.486	0.270
Europe & Nth America	0.180	0.284	0.392	0.155	0.372	0.255
Pacific Islands	0.068	0.140	0.239	0.067	0.250	0.126
Asia	0.213	0.286	0.372	0.146	0.359	0.196
Other	0.142	0.275	0.390	0.146	0.387	0.267
Male						
RoNZ						
New Zealand	0.494	0.558	0.662			
UK & Ireland	0.431	0.505	0.620	0.397	0.597	0.562
Australia	0.461	0.545	0.651	0.437	0.696	0.552
Europe & Nth America	0.509	0.544	0.646	0.448	0.601	0.519
Pacific Islands	0.253	0.317	0.435	0.247	0.435	0.257
Asia	0.434	0.492	0.551	0.300	0.468	0.416
Other	0.435	0.496	0.626	0.408	0.626	0.481
Male						
Auckland						
New Zealand	0.451	0.551	0.657			
UK & Ireland	0.421	0.533	0.637	0.393	0.618	0.539
Australia	0.462	0.554	0.684	0.436	0.730	0.564
Europe & Nth America	0.487	0.564	0.657	0.373	0.597	0.516
Pacific Islands	0.213	0.292	0.400	0.144	0.367	0.216
Asia	0.422	0.499	0.532	0.285	0.484	0.383
Other	0.419	0.526	0.645	0.405	0.652	0.467
Total						
New Zealand	0.323	0.408	0.514			
UK & Ireland	0.288	0.381	0.495	0.271	0.495	0.401
Australia	0.305	0.400	0.523	0.311	0.571	0.403
Europe & Nth America	0.367	0.433	0.535	0.326	0.512	0.399
Pacific Islands	0.154	0.224	0.322	0.128	0.326	0.175
Asia	0.338	0.404	0.453	0.228	0.413	0.292
Other	0.295	0.387	0.523	0.289	0.529	0.371

Table A54: Median Income, Recent and All Immigrants, All individuals and Full-time Workers.

All Individuals

	In current NZ dollars			Relative to Natives		
	1981	1986	1996	1981	1986	1996
All Immigrants	8000	11818	14091	1.08	1.02	0.78
Recent Immigrants	5250	9167	7000	0.71	0.79	0.38
New Zealanders	7357	11500	18000			

Full-time Workers

	In current NZ dollars			Relative to Natives		
	1981	1986	1996	1981	1986	1996
All Immigrants	11000	16591	27143	1.01	1.02	0.96
Recent Immigrants	9368	13929	24167	0.86	0.86	0.86
New Zealanders	10824	16136	28000			

Table A55: Average Income in current NZ dollars, Rest of New Zealand and Auckland, All individuals and Full-time Workers.

All Individuals

	Rest of New Zealand			Auckland		
	1981	1986	1996	1981	1986	1996
All Immigrants	9323	13177	15041	9011	12460	15101
Recent Immigrants	7790	11864	13113	7121	10788	12175
New Zealanders	8528	12348	13093	8625	12382	14971

Full-time workers

	Rest of New Zealand			Auckland		
	1981	1986	1996	1981	1986	1996
All Immigrants	20403	23454	35033	19804	22731	34524
Recent Immigrants	19743	18804	34862	17716	16415	31455
New Zealanders	17731	22123	31593	19719	26852	36643

Table A56: Income, All and Recent Immigrants, by Qualification, Year, Region-of-Origin and Gender.

I. All Immigrants

II. Recent Immigrants

	1981			1986			1996		
1981	1986			1996					
	Female	Male	Total	Female	Male	Total	Female	Male	Total
Female	Male	Total	Female	Male	Total	Female	Male	Total	
No qualification									
New Zealand	4103	11125	7541	7404	14648	10966	13275	22841	18080
UK & Ireland	4623	11665	8085	8312	17555	12693	14283	26538	20080
4037	9648	6546	5927	14726	9880	9814	22465	16009	
Australia	4339	10668	7273	7252	14013	10464	12554	20339	16353
3299	8693	5882	5414	11165	8195	11564	18652	15040	
Europe & Nth America	4401	12257	8667	7624	16420	12152	12658	23246	17973
2929	8675	5887	4971	10544	7801	7182	15389	11054	
Pacific Islands	4225	8666	6474	7186	12591	9986	11836	17265	14508
3085	6365	4718	4875	8940	6835	6820	8733	7669	
Asia	4636	9251	6786	8091	13930	10730	9885	13190	11318
2865	6442	4596	5845	10777	8094	6717	8320	7366	
Other	4428	10188	7097	7157	13205	9866	10561	15394	12968
3338	7366	5219	4487	7732	6191	6983	9101	8048	
Total	4162	11100	7566	7468	14775	11057	13124	22466	17778
3346	7745	5460	5374	10782	7924	7256	10912	8850	
School qualification									
New Zealand	4963	10315	7555	8660	15177	11657	16053	25674	20413
UK & Ireland	5483	11721	8503	9592	18558	13509	18232	31395	23924
4562	10719	7567	8126	17342	11877	14820	28795	20968	
Australia	4900	11173	7438	8505	15966	11427	16797	27029	21008
4481	10506	6965	6924	15345	10198	14931	29890	21393	
Europe & Nth America	4811	12137	8593	8136	16816	12153	14956	26748	20560
3446	10546	6986	5885	13090	8991	12295	24011	17749	
Pacific Islands	4406	7842	6177	7715	12367	9980	13731	19207	16236
2879	4993	4006	5201	7702	6433	7924	10284	8984	
Asia	4423	8632	6665	7352	13183	10258	9587	13551	11354
3079	5050	4206	4593	9897	7239	7267	9866	8387	
Other	4642	9673	7048	8194	15847	11751	13271	22160	17539
3906	8589	6208	6216	11239	8707	9323	15115	12089	
Total	4990	10438	7630	8685	15398	11760	15805	25298	20094
3881	8521	6194	6211	12053	8845	9322	15273	11946	
Vocational qualification									
New Zealand	7051	14635	11243	11734	21467	17325	20723	33609	27409
UK & Ireland	6779	15530	12287	11709	23222	19180	21581	37221	30671
6124	13911	10513	10099	24159	18884	20040	36571	29032	
Australia	6381	14654	10545	10671	22201	16731	20252	34764	27300
5341	12937	8982	9042	22006	15772	17660	36788	27029	
Europe & Nth America	6158	14457	11736	10007	21097	17365	18051	31479	25472
4804	12328	9260	7972	19470	14757	14518	27225	20698	
Pacific Islands	6761	12590	9660	10371	16665	13818	16335	23873	19938
4673	8489	6399	7557	11237	9492	10531	15504	12983	
Asia	6756	14460	10733	10371	21895	16492	14049	23178	18165
5302	10762	7850	7061	19500	13508	10172	17064	13104	
Other	6761	15173	10782	10951	22232	16610	18938	32863	25775
5819	14195	9138	8299	19129	13776	14690	28444	21707	
Total	6985	14743	11356	11628	21641	17478	20409	33536	27268
5646	13114	9645	8743	20914	15788	14333	27406	20686	
University qualification									
New Zealand	9833	19954	16915	15579	31769	25643	30010	52470	42278
UK & Ireland	10352	21825	17954	16195	33584	27717	32823	55766	46090
10364	21221	17414	14789	34153	27749	33058	51538	43535	
Australia	9132	19197	15090	15141	33825	25515	28011	56196	42104
8772	16723	13735	13662	34851	25765	27560	63689	45853	
Europe & Nth America	7868	18911	14646	14340	30347	23873	25851	48134	37172
6271	18100	13287	12790	31164	23456	22541	43098	32675	
Pacific Islands	7832	16336	13944	13162	22550	19458	25733	40770	34659
4699	9411	8397	9142	14213	12311	18007	24637	22020	
Asia	8135	17469	14358	12546	28286	22304	18066	30059	24504
5282	11399	8983	7557	20524	14875	11872	19938	16296	
Other	7910	20061	15933	13711	31016	24571	23641	49700	38899
5058	21147	15652	10847	27124	21055	19412	41777	32593	
Total	9674	20018	16784	15412	31737	25601	28626	50365	40526
7724	17936	14137	11731	29167	22284	19342	34615	27679	

Table A57: Total Personal Income, All and Recent Immgrants, by Region-of-Origin and Gender (in current NZ dollars).

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
New Zealand	4940	9079	26802	4940	9079	26802
UK & Ireland	5501	10093	30490	5333	9009	31766
Australia	5162	9224	28133	4630	7998	27601
Europe & Nth America	5057	9248	29337	4026	8022	28630
Pacific Islands	4460	7896	21307	3141	5470	15993
Asia	5270	8953	23809	3476	5875	18367
Other	5401	9725	29732	4423	7814	27716
Male						
New Zealand	12036	17822	36684	12036	17822	36684
UK & Ireland	13481	21697	43275	13143	23205	43443
Australia	12419	19321	40745	11377	20022	46446
Europe & Nth America	13348	20339	41518	12033	20316	42997
Pacific Islands	8922	13505	26954	6184	9097	19200
Asia	11448	18615	33046	7155	13956	27830
Other	12895	21141	45295	12733	18498	44445
Total						
New Zealand	8537	13541	32954	8537	13541	32954
UK & Ireland	9750	16378	38661	9382	16748	39097
Australia	8510	13945	35473	7823	13683	38928
Europe & Nth America	9766	15500	37210	8358	14626	37444
Pacific Islands	6736	10802	24629	4682	7269	17856
Asia	8510	13912	29076	5425	9924	23730
Other	9138	15491	39728	8580	13575	38919

Table A58: Total Personal Income by Region-of-Origin, Gender & Auckland/RoNZ (in current NZ dollars).

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
RoNZ						
New Zealand	4845	8677	16451			
UK & Ireland	5420	9822	18992	5437	8849	20168
Australia	5037	8729	17092	4582	7535	16313
Europe & Nth America	4974	8892	17381	3973	7743	15507
Pacific Islands	4472	7933	13777	3018	5286	8495
Asia	5241	8724	12739	3373	5529	8218
Other	5286	9325	16161	4147	7650	12177
Female						
Auckland						
New Zealand	5291	10303	20166			
UK & Ireland	5642	10539	21787	5210	9291	21817
Australia	5403	10141	20972	4767	8987	20311
Europe & Nth America	5234	9980	18971	4168	8636	16531
Pacific Islands	4456	7883	13712	3201	5557	8174
Asia	5330	9309	11734	3705	6421	8758
Other	5608	10332	17653	4943	8264	14281
Male						
RoNZ						
New Zealand	12066	17276	27915			
UK & Ireland	13543	21293	34324	13541	23476	36136
Australia	12092	18547	29435	10845	19016	33264
Europe & Nth America	13408	19932	31286	12416	20477	31518
Pacific Islands	9268	14327	20482	6101	9287	10989
Asia	11369	18487	21658	6832	13793	14022
Other	13006	20801	33124	13223	18482	29276
Male						
Auckland						
New Zealand	12027	19656	33858			
UK & Ireland	13392	22386	40032	12426	23064	41385
Australia	12986	20708	37856	12398	21846	46586
Europe & Nth America	13241	21264	34760	11185	20113	30323
Pacific Islands	8730	13070	20073	6236	9007	11812
Asia	11603	18848	18135	7760	14237	13482
Other	12772	21748	31772	12095	18603	26312

Table A59: Total Personal Income of Full-time Workers, by Region-of-Origin and Gender (in current NZ dollars).

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
New Zealand	8853	13878	26802	8853	13878	26802
UK & Ireland	9768	15459	30490	9845	14689	31766
Australia	9326	14770	28133	8290	13759	27601
Europe & Nth America	9506	15161	29337	8721	14691	28630
Pacific Islands	8080	11758	21307	7066	10076	15993
Asia	9309	14525	23809	7667	11876	18367
Other	9727	15622	29732	8667	14753	27716
Male						
New Zealand	13905	20511	36684	13905	20511	36684
UK & Ireland	14927	24308	43275	14519	25836	43443
Australia	14051	22741	40745	12736	23245	46446
Europe & Nth America	14727	23072	41518	13944	23556	42997
Pacific Islands	10433	15561	26954	8255	12211	19200
Asia	14161	22675	33046	10563	19626	27830
Other	15172	24991	45295	16154	24236	44445
Total						
New Zealand	12356	18227	32954	12356	18227	32954
UK & Ireland	13473	21522	38661	13138	22320	39097
Australia	12445	19772	35473	11117	19800	38928
Europe & Nth America	13498	20941	37210	12583	20961	37444
Pacific Islands	9641	14160	24629	7855	11389	17856
Asia	12530	19705	29076	9575	16754	23730
Other	13387	21728	39728	13651	21272	38919

Table A60: Total Personal Income of Full-time Workers, by Region-of-Origin, Gender & Auckland/RoNZ
(in current NZ dollars).

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
RoNZ						
New Zealand	8809	13502	25711			
UK & Ireland	9828	15282	29189	10114	14389	31422
Australia	9240	14306	26436	8243	13122	26219
Europe & Nth America	9508	14892	28628	8676	14377	27619
Pacific Islands	8348	12314	21957	7171	10176	17322
Asia	9488	14557	24584	7741	12011	19364
Other	9725	15588	29263	8128	15057	27609
Female						
Auckland						
New Zealand	8998	14881	29490			
UK & Ireland	9683	15723	32279	9503	15175	32163
Australia	9481	15497	30873	8425	14931	29380
Europe & Nth America	9535	15649	30442	8949	15283	29865
Pacific Islands	7962	11527	21058	7027	10040	15516
Asia	9064	14485	23204	7571	11679	17839
Other	9733	15677	30161	9492	14347	27789
Male						
RoNZ						
New Zealand	13837	19848	35006			
UK & Ireland	15044	23992	41569	14964	26118	42269
Australia	13709	21943	37600	12139	22250	41356
Europe & Nth America	14722	22614	40291	14279	23889	43260
Pacific Islands	10788	16396	27835	8070	12739	19648
Asia	14413	23101	36081	10541	20281	32065
Other	15382	24917	46083	17276	25730	47629
Male						
Auckland						
New Zealand	14152	22645	41517			
UK & Ireland	14741	24803	45689	13730	25480	44912
Australia	14621	24064	45865	13843	24913	53996
Europe & Nth America	14730	24053	43478	13097	23002	42680
Pacific Islands	10232	15116	26572	8367	11973	19049
Asia	13792	22048	30878	10602	18575	25897
Other	14891	25184	44486	14669	22411	41835

Table A61: Income Of Immigrants Relative To Natives, by Region-of-Origin, Gender & Auckland/RoNZ.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
RoNZ						
UK & Ireland	1.11	1.13	1.15	1.12	1.01	1.22
Australia	1.03	1.00	1.03	0.94	0.86	0.99
Europe & Nth America	1.02	1.02	1.05	0.82	0.89	0.94
Pacific Islands	0.92	0.91	0.83	0.62	0.60	0.51
Asia	1.08	1.00	0.77	0.69	0.63	0.49
Other	1.09	1.07	0.98	0.85	0.88	0.74
Female						
Auckland						
UK & Ireland	1.06	1.02	1.08	0.98	0.90	1.08
Australia	1.02	0.98	1.03	0.90	0.87	1.00
Europe & Nth America	0.98	0.96	0.94	0.78	0.83	0.81
Pacific Islands	0.84	0.76	0.67	0.60	0.53	0.40
Asia	1.00	0.90	0.58	0.70	0.62	0.43
Other	1.05	1.00	0.87	0.93	0.80	0.70
Male						
RoNZ						
UK & Ireland	1.12	1.23	1.22	1.12	1.35	1.29
Australia	1.00	1.07	1.05	0.89	1.10	1.19
Europe & Nth America	1.11	1.15	1.12	1.02	1.18	1.12
Pacific Islands	0.76	0.82	0.73	0.50	0.53	0.39
Asia	0.94	1.07	0.77	0.56	0.79	0.50
Other	1.07	1.20	1.18	1.09	1.06	1.04
Male						
Auckland						
UK & Ireland	1.11	1.13	1.18	1.03	1.17	1.22
Australia	1.07	1.05	1.11	1.03	1.11	1.37
Europe & Nth America	1.10	1.08	1.02	0.92	1.02	0.89
Pacific Islands	0.72	0.66	0.59	0.51	0.45	0.34
Asia	0.96	0.95	0.53	0.64	0.72	0.39
Other	1.06	1.10	0.93	1.00	0.94	0.77
Total						
UK & Ireland	1.14	1.21	1.22	1.10	1.23	1.28
Australia	0.99	1.10	1.06	0.92	1.00	1.17
Europe & Nth America	1.14	1.14	1.09	0.97	1.07	0.99
Pacific Islands	0.79	0.79	0.72	0.55	0.53	0.41
Asia	1.00	1.02	0.66	0.64	0.72	0.46
Other	1.07	1.14	1.06	1.01	1.00	0.89

Table A62: Income Of Full-time Employed Immigrants Relative To Full-time Employed Natives, by Region-of-Origin, Gender & Auckland/RoNZ.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
RoNZ						
UK & Ireland	1.11	1.13	1.13	1.14	1.06	1.22
Australia	1.04	1.05	1.02	0.93	0.97	1.01
Europe & Nth America	1.07	1.10	1.11	0.98	1.06	1.07
Pacific Islands	0.94	0.91	0.85	0.81	0.75	0.67
Asia	1.07	1.07	0.95	0.87	0.88	0.75
Other	1.10	1.15	1.13	0.92	1.11	1.07
Female						
Auckland						
UK & Ireland	1.07	1.05	1.09	1.05	1.01	1.09
Australia	1.05	1.04	1.04	0.93	1.00	0.99
Europe & Nth America	1.05	1.05	1.03	0.99	1.02	1.01
Pacific Islands	0.88	0.77	0.71	0.78	0.67	0.52
Asia	1.00	0.97	0.78	0.84	0.78	0.60
Other	1.08	1.05	1.02	1.05	0.96	0.94
Male						
RoNZ						
UK & Ireland	1.08	1.20	1.18	1.08	1.31	1.20
Australia	0.99	1.10	1.07	0.87	1.12	1.18
Europe & Nth America	1.06	1.13	1.15	1.03	1.20	1.23
Pacific Islands	0.77	0.82	0.79	0.58	0.64	0.56
Asia	1.04	1.16	1.03	0.76	1.02	0.91
Other	1.11	1.25	1.31	1.24	1.29	1.36
Male						
Auckland						
UK & Ireland	1.04	1.09	1.10	0.97	1.12	1.08
Australia	1.03	1.06	1.10	0.97	1.10	1.30
Europe & Nth America	1.04	1.06	1.04	0.92	1.01	1.02
Pacific Islands	0.72	0.66	0.64	0.59	0.52	0.45
Asia	0.97	0.97	0.74	0.74	0.82	0.62
Other	1.05	1.11	1.07	1.03	0.98	1.00
Total						
UK & Ireland	1.09	1.17	1.17	1.07	1.20	1.19
Australia	1.01	1.07	1.06	0.91	1.05	1.14
Europe & Nth America	1.09	1.13	1.12	1.01	1.12	1.12
Pacific Islands	0.81	0.79	0.75	0.67	0.64	0.55
Asia	1.04	1.08	0.88	0.81	0.91	0.71
Other	1.09	1.17	1.19	1.09	1.15	1.15

Table A63: Median Income Of Immigrants, Recent Immigrants and Natives, by Region-of-Origin, Gender & Auckland/RoNZ.

1. Immigrants.

	ALL IMMIGRANTS						RECENT IMMIGRANTS					
	Current NZ dollars			Relative to Natives			Current NZ dollars			Relative to Natives		
	1981	1986	1996	1981	1986	1996	1981	1986	1996	1981	1986	1996
New Zealand	7357	11500	18000				7357	11500	18000			
UK & Ireland	9000	14488	24375	1.22	1.25	1.35	8667	14375	26500	1.17	1.25	1.47
Australia	7357	11389	18333	1.00	.99	1.01	6714	11111	19375	.91	.96	1.07
Europe & Nth America	8889	13125	18750	1.20	1.14	1.04	6200	11071	13333	.84	.96	.74
Pacific Islands	6950	10588	13846	0.94	.92	.76	3500	8750	5294	.47	.76	.29
Asia	7143	11250	8000	0.97	.97	.44	3125	7123	4688	.42	.61	.26
Other	7786	12857	15714	1.05	1.11	.87	6500	10000	9688	.88	.86	.53

2. Immigrants in full-time employment.

	ALL IMMIGRANTS						RECENT IMMIGRANTS					
	Current NZ dollars			Relative to Natives			Current NZ dollars			Relative to Natives		
	1981	1986	1996	1981	1986	1996	1981	1986	1996	1981	1986	1996
New Zealand	10824	16136	28000				10824	16136	28000			
UK & Ireland	12143	19231	30386	1.12	1.19	1.08	11778	19375	34348	1.08	1.20	1.22
Australia	11111	17273	29000	1.02	1.07	1.03	11000	16354	29583	1.01	1.01	1.05
Europe & Nth America	11882	18542	30104	1.09	1.14	1.07	10933	17250	29546	1.01	1.06	1.05
Pacific Islands	9280	12917	22750	.85	.80	.81	8074	11058	15250	.74	.68	.54
Asia	10667	16000	23462	.98	.99	.83	8455	13194	18571	.78	.81	.66
Other	11750	18864	30219	1.08	1.16	1.07	11333	17750	30123	1.04	1.10	1.07

Table A64: Proportion of Working Age Population receiving income from a Social Welfare Benefit at some time in the last 12 months, by Region-of-Origin, and Gender.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female						
New Zealand	0.562	0.558	0.294	0.562	0.558	0.294
UK & Ireland	0.594	0.553	0.232	0.546	0.464	0.098
Australia	0.583	0.562	0.235	0.403	0.427	0.176
Europe & Nth America	0.557	0.525	0.247	0.382	0.388	0.213
Pacific Islands	0.630	0.610	0.356	0.407	0.386	0.278
Asia	0.513	0.475	0.178	0.369	0.356	0.162
Other	0.529	0.531	0.244	0.435	0.388	0.275
Male						
New Zealand	0.122	0.189	0.223	0.122	0.189	0.223
UK & Ireland	0.144	0.199	0.194	0.056	0.110	0.103
Australia	0.127	0.180	0.197	0.073	0.145	0.129
Europe & Nth America	0.113	0.196	0.219	0.042	0.103	0.210
Pacific Islands	0.106	0.201	0.277	0.070	0.144	0.228
Asia	0.084	0.141	0.170	0.055	0.114	0.171
Other	0.091	0.134	0.234	0.047	0.095	0.291
Total						
New Zealand	0.343	0.376	0.259	0.343	0.376	0.259
UK & Ireland	0.357	0.366	0.213	0.292	0.277	0.101
Australia	0.374	0.390	0.218	0.246	0.300	0.154
Europe & Nth America	0.307	0.346	0.233	0.195	0.242	0.212
Pacific Islands	0.365	0.413	0.318	0.237	0.273	0.255
Asia	0.289	0.311	0.174	0.201	0.241	0.166
Other	0.312	0.338	0.239	0.239	0.236	0.284

Table A65: Proportion of Working Age Population receiving income from a Social Welfare Benefit at some time in the last 12 months, by Region-of-Origin, Gender & Auckland/RoNZ.

	All Immigrants			Recent Immigrants		
	1981	1986	1996	1981	1986	1996
Female RoNZ						
New Zealand	0.575	0.575	0.313			
UK & Ireland	0.606	0.570	0.260	0.550	0.476	0.105
Australia	0.591	0.583	0.261	0.405	0.443	0.207
Europe & Nth America	0.563	0.538	0.259	0.372	0.400	0.170
Pacific Islands	0.619	0.632	0.364	0.376	0.408	0.293
Asia	0.512	0.478	0.182	0.372	0.349	0.143
Other	0.546	0.553	0.246	0.440	0.417	0.254
Female Auckland						
New Zealand	0.524	0.509	0.239			
UK & Ireland	0.575	0.528	0.187	0.545	0.452	0.090
Australia	0.570	0.522	0.185	0.402	0.390	0.125
Europe & Nth America	0.547	0.501	0.226	0.406	0.370	0.267
Pacific Islands	0.636	0.600	0.352	0.425	0.375	0.272
Asia	0.514	0.470	0.175	0.363	0.369	0.173
Other	0.509	0.503	0.242	0.429	0.347	0.292
Male RoNZ						
New Zealand	0.122	0.193	0.241			
UK & Ireland	0.148	0.211	0.223	0.051	0.113	0.127
Australia	0.134	0.192	0.226	0.081	0.158	0.161
Europe & Nth America	0.110	0.204	0.232	0.038	0.104	0.160
Pacific Islands	0.090	0.200	0.310	0.056	0.153	0.259
Asia	0.081	0.144	0.165	0.058	0.109	0.139
Other	0.091	0.143	0.234	0.030	0.101	0.265
Male Auckland						
New Zealand	0.126	0.173	0.168			
UK & Ireland	0.139	0.179	0.150	0.064	0.104	0.071
Australia	0.115	0.158	0.145	0.055	0.121	0.077
Europe & Nth America	0.121	0.180	0.197	0.050	0.098	0.270
Pacific Islands	0.115	0.201	0.262	0.080	0.139	0.215
Asia	0.089	0.136	0.173	0.046	0.124	0.187
Other	0.092	0.119	0.234	0.073	0.087	0.312

Table A66: Income of Immigrants relative to Natives for different Age/Period-of-Arrival cohorts by Census Year

Age in	Period of Arrival								
	91-95	86-90	81-86	76-80	71-75	66-70	61-66	56-60	51-55	45-50
1996:21-25	0.62	0.77	0.92	0.92	1.07					
1996:26-30	0.88	0.75	0.99	1.08	1.10	1.14				
1986:21-25			0.74	0.89	1.02	1.02	1.11			
1996:31-35	0.89	0.90	0.83	1.00	1.04	1.07	1.11			
1981:21-25				0.77	0.91	0.96	1.05	1.05		
1986:26-30			0.90	0.89	0.99	1.06	1.06	1.12		
1996:36-40	0.83	0.95	0.89	0.82	0.99	1.08	1.07	1.11		
1981:26-30				0.93	0.86	0.93	1.03	1.02	1.09	
1986:31-35			1.00	0.97	0.91	0.99	1.07	1.11	1.13	
1996:41-45	0.78	0.95	0.97	0.98	0.86	0.97	1.03	1.11	1.13	
1981:31-35				0.95	0.91	0.89	0.95	1.02	1.02	1.16
1986:36-40			1.05	1.07	0.98	0.94	1.05	1.14	1.11	1.16
1996:46-50	0.81	0.89	0.98	1.07	0.97	0.90	0.95	1.01	1.11	1.12
1981:36-40				0.95	0.98	0.97	0.92	1.05	1.10	1.17
1986:41-45			1.09	1.08	1.02	1.04	0.98	1.06	1.13	1.22
1996:51-55	0.75	0.94	1.11	1.09	1.05	1.01	0.93	0.98	1.22	1.18
1981:41-45				1.00	0.94	0.96	0.92	0.96	1.00	1.00
1986:46-50			1.10	1.09	1.11	1.10	1.07	1.05	1.11	1.14
1996:56-60	0.76	0.86	1.09	1.11	1.03	1.02	1.03	0.97	1.10	1.15

Table A67: Proportion of working age population in full-time study, natives, all immigrants
and recent immigrants, by age, region-of-origin and Gender, 1996.

	All Immigrants						Recent Immigrants					
Age	15-19	20-24	25-29	30-54	55-	Total	15-19	20-24	25-29	30-54	55-	Total
1. Female Immigrants & Natives												
New Zealand	0.230	0.063	0.036	0.026	0.020	0.055	0.230	0.063	0.036	0.026	0.020	0.055
UK & Ireland	0.273	0.055	0.026	0.023	0.019	0.031	0.338	0.052	0.019	0.028	0.028	0.042
Australia	0.247	0.067	0.052	0.030	0.019	0.057	0.283	0.045	0.043	0.038	0.032	0.064
Europe & Nth America	0.419	0.160	0.073	0.044	0.020	0.073	0.582	0.230	0.086	0.066	0.049	0.130
Pacific Islands	0.273	0.091	0.036	0.027	0.013	0.053	0.348	0.120	0.049	0.030	0.002	0.115
Asia	0.669	0.429	0.159	0.110	0.029	0.225	0.719	0.485	0.201	0.177	0.039	0.319
Other	0.395	0.160	0.091	0.050	0.027	0.095	0.465	0.220	0.135	0.073	0.055	0.146
Total	0.259	0.081	0.042	0.030	0.020	0.061	0.257	0.080	0.042	0.031	0.020	0.064
2. Male Immigrants & Natives												
New Zealand	0.246	0.069	0.023	0.010	0.004	0.047	0.246	0.069	0.023	0.010	0.004	0.047
UK & Ireland	0.285	0.100	0.028	0.008	0.009	0.021	0.294	0.056	0.016	0.013	0.033	0.031
Australia	0.290	0.080	0.028	0.012	0.006	0.054	0.346	0.077	0.025	0.015	0.012	0.059
Europe & Nth America	0.406	0.159	0.052	0.016	0.009	0.048	0.507	0.219	0.065	0.033	0.017	0.094
Pacific Islands	0.302	0.119	0.038	0.021	0.012	0.053	0.379	0.174	0.084	0.048	0.009	0.149
Asia	0.702	0.498	0.181	0.085	0.027	0.241	0.757	0.591	0.250	0.150	0.054	0.355
Other	0.415	0.180	0.076	0.038	0.014	0.090	0.476	0.211	0.108	0.068	0.029	0.139
Total	0.277	0.089	0.030	0.013	0.006	0.053	0.274	0.086	0.029	0.014	0.005	0.056
3. All Immigrants & Natives												
New Zealand	0.238	0.066	0.030	0.018	0.012	0.051	0.238	0.066	0.030	0.018	0.012	0.051
UK & Ireland	0.279	0.078	0.027	0.016	0.014	0.026	0.315	0.054	0.018	0.020	0.031	0.036
Australia	0.268	0.073	0.041	0.022	0.013	0.056	0.314	0.058	0.036	0.026	0.021	0.062
Europe & Nth America	0.413	0.159	0.064	0.030	0.014	0.060	0.546	0.225	0.078	0.050	0.032	0.113
Pacific Islands	0.287	0.104	0.037	0.024	0.012	0.053	0.362	0.144	0.066	0.038	0.005	0.130
Asia	0.686	0.460	0.168	0.099	0.028	0.233	0.738	0.530	0.220	0.165	0.046	0.335
Other	0.406	0.170	0.084	0.044	0.020	0.092	0.471	0.216	0.121	0.070	0.043	0.143
Total	0.268	0.085	0.036	0.022	0.013	0.057	0.617	0.349	0.117	0.095	0.034	0.208

Table A68: Proportion of the working age population that was inactive (neither employed nor in full-time study),
all immigrants and recent immigrants, by age and region-of-origin, 1996.

	All Immigrants						Recent Immigrants					
Age	15-19	20-24	25-29	30-54	55-	Total	15-19	20-24	25-29	30-54	55-	Total
New Zealand	0.238	0.218	0.227	0.193	0.456	0.236						
UK & Ireland	0.182	0.134	0.167	0.154	0.434	0.224	0.204	0.178	0.157	0.185	0.607	0.201
Australia	0.221	0.184	0.178	0.189	0.419	0.218	0.211	0.206	0.159	0.219	0.490	0.210
Europe & Nth America	0.182	0.210	0.210	0.212	0.490	0.265	0.206	0.301	0.257	0.313	0.579	0.304
Pacific Islands	0.387	0.337	0.363	0.351	0.645	0.384	0.393	0.381	0.411	0.484	0.813	0.452
Asia	0.165	0.223	0.320	0.347	0.577	0.318	0.160	0.233	0.361	0.440	0.747	0.357
Other	0.209	0.249	0.301	0.261	0.448	0.275	0.229	0.336	0.369	0.351	0.618	0.344
Total	0.235	0.220	0.233	0.203	0.462	0.245	0.203	0.268	0.294	0.354	0.698	0.326

Table A69: Proportion with a postsecondary qualification, and income relative to natives,
by country of origin and year, all immigrants.

Country of Origin	1981		1986		1996	
	Postsec	Income	Postsec	Income	Postsec	Income
Australia	0.271	0.997	0.382	1.030	0.430	1.068
UK and Ireland	0.293	1.142	0.434	1.210	0.499	1.226
Cook Islands	0.048	0.799	0.122	0.834	0.164	0.729
Fiji	0.198	0.897	0.333	0.963	0.353	0.866
Niue	0.043	0.731	0.126	0.754	0.180	0.762
Samoa	0.062	0.786	0.171	0.773	0.186	0.678
Tokelau	0.046	0.668	0.139	0.747	0.193	0.641
Tonga	0.083	0.706	0.147	0.690	0.164	0.633
Germany	0.363	1.129	0.614	1.156	0.668	1.047
Netherlands	0.271	1.168	0.460	1.126	0.487	1.064
Switzerland	0.421	1.213	0.715	1.142	0.735	1.069
Poland	0.222	1.124	0.429	1.105	0.493	0.888
Yugoslavia	0.150	1.123	0.304	1.171	0.521	0.791
Canada	0.325	0.991	0.489	1.076	0.571	1.229
USA	0.434	1.096	0.590	1.211	0.609	1.319
Kampuchea	0.082	0.566	0.081	0.686	0.142	0.574
Indonesia	0.402	1.126	0.555	1.034	0.470	0.792
Malaysia	0.452	0.748	0.491	0.898	0.440	0.825
Phillipines	0.449	0.604	0.622	0.589	0.596	0.712
Singapore	0.303	0.696	0.413	0.843	0.492	0.910
Thailand	0.341	0.529	0.405	0.582	0.244	0.482
Vietnam	0.082	0.643	0.163	0.807	0.163	0.573
China	0.144	1.152	0.203	1.094	0.381	0.590
Hong Kong	0.292	0.971	0.411	1.014	0.276	0.588
Japan	0.321	1.064	0.528	1.514	0.367	0.728
Korea	0.341	0.596	0.275	0.834	0.407	0.441
Taiwan	0.333	0.634	0.531	0.776	0.295	0.402
India	0.309	1.174	0.428	1.212	0.493	0.941
Sri Lanka	0.540	1.564	0.625	1.665	0.662	1.032
Iran	0.415	1.166	0.634	1.043	0.487	0.698
Iraq	0.619	0.941	0.474	0.872	0.529	0.458
South Africa	0.435	1.132	0.552	1.215	0.640	1.336
Zimbabwe	0.393	0.931	0.538	1.109	0.650	1.314

Table A70: Age at arrival, Proportion with a postsecondary qualification, and income relative to natives, by country of origin and year, Recent immigrants.

Country of Origin	1981			1986			1996	
	Age	Postsec	Income	Age	Postsec	Income	Age	Postsec Income
Australia	27.5	0.334	0.916	28.7	0.456	1.011	30.0	0.510 1.180
UK and Ireland	31.2	0.426	1.099	31.2	0.565	1.237	32.8	0.665 1.286
Cook Islands	23.9	0.032	0.594	23.4	0.141	0.645	27.2	0.149 0.421
Fiji	24.4	0.120	0.514	23.9	0.275	0.495	28.8	0.303 0.494
Niue	24.7	0.033	0.498	24.5	0.120	0.564	28.0	0.182 0.439
Samoa	24.2	0.050	0.584	25.6	0.181	0.554	27.1	0.169 0.377
Tokelau	25.1	0.008	0.318	26.0	0.108	0.443	28.5	0.195 0.358
Tonga	27.1	0.067	0.488	26.4	0.146	0.417	28.6	0.152 0.337
Germany	30.1	0.448	1.009	31.1	0.754	1.018	31.8	0.692 0.923
Netherlands	30.0	0.317	0.813	30.0	0.559	0.968	32.8	0.610 1.074
Switzerland	27.4	0.498	0.994	27.9	0.844	0.951	31.1	0.738 0.869
Poland	36.7	0.394	0.725	30.2	0.755	1.165	33.3	0.604 0.774
Yugoslavia	31.5	0.172	0.843	31.6	0.457	0.939	34.0	0.604 0.624
Canada	28.2	0.502	0.992	28.9	0.642	1.099	31.1	0.646 1.305
USA	29.5	0.483	1.143	30.3	0.643	1.292	33.3	0.604 1.349
Kampuchea	28.2	0.041	0.517	28.0	0.070	0.646	30.8	0.108 0.430
Indonesia	31.1	0.387	0.739	28.1	0.467	0.565	27.3	0.381 0.474
Malaysia	21.7	0.358	0.421	22.1	0.347	0.430	24.5	0.302 0.372
Phillipines	28.8	0.458	0.474	29.9	0.633	0.499	30.4	0.588 0.546
Singapore	24.4	0.288	0.449	25.3	0.442	0.580	29.8	0.559 0.713
Thailand	27.3	0.357	0.490	25.7	0.355	0.441	23.8	0.234 0.409
Vietnam	26.2	0.049	0.598	26.5	0.114	0.705	29.5	0.129 0.393
China	33.6	0.089	0.666	31.5	0.228	0.657	34.3	0.489 0.444
Hong Kong	25.8	0.220	0.769	26.5	0.376	0.725	27.8	0.242 0.465
Japan	30.7	0.339	1.235	32.7	0.558	1.703	25.4	0.334 0.640
Korea	28.9	0.379	0.522	31.1	0.260	0.827	30.7	0.407 0.419
Taiwan	26.2	0.261	0.475	28.6	0.456	0.672	28.2	0.300 0.378
India	28.2	0.371	0.912	27.9	0.555	0.924	32.5	0.623 0.631
Sri Lanka	30.3	0.518	1.065	31.0	0.585	1.179	34.5	0.651 0.625
Iran	28.4	0.372	1.043	31.5	0.632	0.873	30.0	0.431 0.507
Iraq	28.4	0.895	0.529	31.8	0.382	0.569	32.3	0.541 0.413
South Africa	29.9	0.528	1.192	30.2	0.651	1.213	33.1	0.677 1.272
Zimbabwe	25.2	0.437	0.911	27.5	0.561	1.063	32.6	0.741 1.302

Table A71: Industry distribution of employed immigrants and natives, by region-of-origin and year (1-digit, NZSIC87).

	1981							1986						
1986	NZ	UK	AUS	EUR	PI	AS	OTH	NZ	UK	AUS	EUR	PI	AS	OTH
Agriculture, Hunting, Forestry and Fishing	12.0	4.1	6.3	9.4	2.4	7.0	6.2	11.7	4.2	6.7	9.8	2.0	5.9	5.7
	10.7	5.0	7.0	8.9	2.9	4.6	4.17							
Mining and Quarrying	0.3	0.2	0.3	0.3	0.1	0.1	0.2	0.4	0.2	0.4	0.3	0.1	0.1	0.2
	0.3	0.1	0.3	0.1	0.0	0.0	0.16							
Manufacturing	21.8	25.4	22.8	26.5	54.5	26.7	22.9	20.2	22.5	20.3	23.3	52.0	26.9	19.7
	14.8	15.0	13.0	14.5	34.9	18.3	14.17							
Electricity, Gas, Water	1.0	1.6	0.9	1.0	0.7	0.7	1.0	1.0	1.3	1.0	0.9	0.6	0.6	0.7
	0.5	0.7	0.5	0.5	0.3	0.3	0.69							
Construction	6.4	6.0	5.5	8.1	3.3	2.0	3.4	7.1	6.7	6.6	8.1	4.1	1.8	3.9
	6.6	6.0	5.5	5.5	3.5	1.8	3.90							
Wholesale, Retail Trade Restaurants and Hotels	18.2	16.5	20.2	17.4	8.5	25.8	16.5	20.0	18.2	22.3	19.0	10.8	29.0	19.0
	22.9	19.2	24.3	21.4	20.1	35.9	22.56							
Transport, Storage and Communication	7.9	8.6	6.6	6.5	7.9	5.1	6.3	7.5	8.1	6.1	5.9	7.5	6.0	5.9
	5.7	5.4	4.9	4.6	6.3	4.8	4.26							
Business and Financial Services	7.0	7.9	7.5	5.4	2.9	6.9	10.1	8.3	9.6	8.9	7.5	3.8	7.8	12.4
	12.4	15.4	14.1	13.6	8.8	13.5	16.95							
Community, Social and Personal Services	25.0	29.4	29.5	25.0	19.4	25.4	33.0	23.4	28.8	27.1	24.9	18.6	21.5	32.1
	25.7	32.7	29.9	30.5	22.8	20.4	33.14							

Table A72: Occupational distribution of employed immigrants and natives, by Region-of-Origin and year (1-digit, NZSCO68).

	1981							1986						
1986	NZ	UK	AUS	EUR	PI	AS	OTH	NZ	UK	AUS	EUR	PI	AS	OTH
Professional, Technical and Related Workers	13.4	17.9	18.0	17.0	5.2	20.8	26.7	13.0	19.4	16.9	19.3	5.6	19.8	27.0
	17.8	27.2	23.5	28.3	11.0	20.2	32.6							
Administrative and Managerial Workes	3.1	4.6	4.4	4.3	0.6	3.0	4.3	4.4	6.7	6.1	6.3	0.9	3.9	6.5
	6.8	9.3	8.4	8.8	2.3	6.9	8.5							
Clerical and Related Workers	15.9	19.5	17.6	11.4	7.6	13.4	18.5	16.5	19.8	18.2	11.9	9.5	11.5	17.7
	16.5	17.9	17.5	12.3	13.7	12.2	14.8							
Sales Workers	10.1	9.9	10.2	9.6	2.2	13.7	9.3	9.4	9.6	10.1	8.7	2.5	12.3	9.7
	11.8	10.8	12.3	10.0	6.8	15.5	11.1							
Service Workers	9.1	9.4	11.1	9.7	11.5	11.1	7.9	9.0	8.7	10.2	10.2	12.3	14.2	7.8
	11.7	9.4	12.7	11.8	15.4	18.7	10.8							
Agriculture,Forest and Fishing Workers	11.4	4.1	6.2	9.3	2.1	6.4	5.8	10.9	4.1	6.2	9.3	1.7	5.3	5.4
	10.4	4.8	6.4	8.5	2.7	4.1	3.8							
Production Workers, Operators, Labourers	36.8	34.2	32.2	38.5	70.4	31.2	27.1	36.4	31.2	31.7	33.9	67.1	32.5	25.5
	24.8	20.3	18.9	19.9	47.7	22.2	18.2							

Table A73: Two-digit industry distribution, New Zealanders and All Immigrants by region
of origin, 1996 Census (NZSIC87)

	New Zealand	UK & Ireland	Australia	Europe& Nth. Am.	Pacific Islands	Asia	Other	Total
11	119680	5165	1401	2592	906	1564	536	131844
12	8100	215	87	134	135	40	36	8747
13	4200	195	54	92	33	60	18	4652
21	740	25	12	5	3		3	788
22	460	55	17	18		9	5	564
23	740	20	22	14	1	2	4	803
29	2140	105	24	23	15	9	11	2327
31	46740	2205	596	851	2606	1169	396	54563
32	19600	1680	260	515	2145	1800	209	26209
33	20420	1310	271	464	964	345	121	23895
34	20120	2885	391	542	1079	510	280	25807
35	13700	1525	240	427	1555	786	228	18461
36	5440	505	92	150	310	66	41	6604
37	4320	540	103	112	437	108	58	5678
38	48520	5480	853	1415	3479	1643	624	62014
39	3360	445	68	120	205	149	48	4395
41	5960	745	101	140	98	94	79	7217
42	920	110	21	24	20	14	18	1127
51	26740	1915	382	581	412	193	143	30366
52	14500	620	185	165	152	73	79	15774
53	40260	4065	656	1009	720	407	329	47446
61	71920	7260	1370	1793	2068	2331	879	87621
62	146840	9870	2513	2701	3359	4881	1419	171583
63	63220	4025	1475	2296	1942	5657	893	79508
71	51320	4185	788	1080	1618	1366	434	60791
72	19580	1780	304	373	709	371	169	23286
81	32080	2740	573	559	894	950	382	38178
82	10480	1450	215	242	195	272	171	13025
83	110960	12760	2328	3495	2163	3644	1844	137194
91	64080	6825	1008	1371	1604	1183	649	76720
92	11320	835	165	184	782	236	96	13618
93	179980	23225	4149	6437	4842	4536	3303	226472
94	27940	2760	708	915	399	674	332	33728
95	32840	2235	529	667	719	589	286	37865
96	80	45	20	88	22	106	22	383
Total	1229300	109805	21981	31594	36591	35837	14145	1479253

Table A74 Two-digit industry distribution, New Zealanders and Recent Immigrants by region of origin, 1996 Census (NZSIC87)

	UK & Ireland	Australia	Europe& Nth. Am.	Pacific Islands	Asia	Other	Total
11	480	284	518	183	509	136	2110
12	10	10	36	21	17	9	103
13	15	9	23		29	4	80
21		2		1			3
22	25	8	10		3	1	47
23	5	12	7				24
29	25	8	4		5	3	45
31	175	138	189	258	397	179	1336
32	105	27	80	212	800	61	1285
33	120	47	68	92	136	34	497
34	185	65	78	83	161	78	650
35	150	48	89	145	273	82	787
36	40	19	30	21	21	9	140
37	55	35	26	26	34	18	194
38	700	161	349	256	595	258	2319
39	35	12	24	20	49	18	158
41	45	18	27	5	18	23	136
42	5	3	3		3	5	19
51	205	78	71	54	83	45	536
52	90	53	48	13	29	32	265
53	435	147	187	88	140	117	1114
61	755	325	429	192	1031	351	3083
62	1045	505	514	588	1976	509	5137
63	575	477	713	253	2169	390	4577
71	330	178	253	104	618	110	1593
72	160	54	94	32	115	49	504
81	280	154	138	83	322	128	1105
82	175	56	59	14	80	74	458
83	1750	527	914	180	1320	698	5389
91	450	166	297	62	284	153	1412
92	75	21	55	65	123	29	368
93	3040	867	1762	348	1528	1252	8797
94	455	213	272	35	316	100	1391
95	230	100	118	79	238	105	870
96	15	15	70	7	82	18	207
Total	12240	4842	7555	3520	13504	5078	46739

Table A75. Two-digit occupational distribution, New Zealanders and All Immigrants by region of origin, 1996 Census (NZSCO68)

	New Zealand	UK & Ireland	Australia	Europe& Nth. Am.	Pacific Islands	Asia	Other	Total
1	4240	580	87	270	107	231	85	5600
2	22580	3590	537	1151	333	908	604	29703
3	13500	2015	240	485	252	421	210	17123
4	2920	425	57	79	21	50	39	3591
5	6020	760	147	363	93	234	116	7733
6	10860	2070	322	530	210	732	763	15487
7	31160	4455	792	1096	688	636	546	39373
8	5520	1085	177	498	115	767	184	8346
9	4360	495	83	185	59	154	90	5426
11	15460	1330	266	348	308	901	267	18880
12	6560	500	120	128	88	145	105	7646
13	57620	7630	1357	2326	1068	1340	1017	72358
14	2520	340	122	159	152	91	46	3430
15	6220	820	141	246	120	142	108	7797
16	7160	870	196	393	66	162	148	8995
17	5840	725	179	282	61	119	87	7293
18	3240	275	71	121	46	51	30	3834
19	20680	2790	429	750	567	516	375	26107
20	1200	100	22	48	18	33	21	1442
21	85340	10435	1881	2893	913	2560	1238	105260
30	16060	1825	329	362	237	252	172	19237
31	4200	565	73	146	107	120	56	5267
32	31520	3430	689	710	580	641	373	37943
33	48700	4120	874	829	1469	1403	560	57955
34	5780	520	131	136	172	169	72	6980
35	3640	420	55	81	59	51	30	4336
36	60	5		1	14	3		83
37	8260	580	104	113	374	84	52	9567
38	3120	385	56	45	77	26	21	3730
39	89280	8440	1654	1681	2362	1851	858	106126
40	19220	1705	386	563	453	1081	231	23639
41	10000	1015	155	317	232	1095	134	12948
42	3400	295	72	74	58	73	27	3999
43	19880	2480	437	589	217	484	309	24396
44	13680	1520	227	317	130	503	159	16536
45	84820	5210	1512	1464	1627	2589	781	98003
49	240	35	6	10	7	8	3	309
50	6420	655	188	396	106	509	82	8356
51	6580	610	138	365	118	905	102	8818
52	1880	150	47	54	126	87	24	2368
53	32700	1695	747	991	1028	2917	474	40552
54	18220	850	331	345	793	654	187	21380
55	25060	1900	416	518	1672	570	219	30355
56	2480	205	44	51	381	131	31	3323
57	8620	660	143	147	57	163	75	9865
58	18180	1520	243	231	464	120	121	20879
59	28840	2410	583	813	1363	990	283	35282
60	5700	215	53	94	15	36	29	6142
61	67280	2770	644	1760	213	822	274	73763
62	49320	2270	678	849	730	673	237	54757
63	6580	140	59	71	119	16	18	7003
64	3480	65	36	50	21	22	10	3684
70	5860	675	80	181	218	142	73	7229
71	1720	30	19	15	19	5	5	1813
72	1760	130	32	39	303	64	17	2345
73	2980	145	24	56	198	22	12	3437
74	1200	120	18	30	146	34	10	1558
75	2620	210	36	54	314	120	22	3376
76	1180	50	11	14	82	24	6	1367
77	27720	920	302	416	1193	571	185	31307
78	40			2	5	1		48
79	12100	820	162	307	1319	1515	128	16351
80	660	95	10	41	193	54	8	1061
81	11700	1090	167	368	419	179	87	14010
82	480	50	8	15	18	4	1	576
83	4540	680	79	165	1146	320	83	7013
84	29640	2865	420	720	964	471	256	35336
85	15340	1760	242	369	391	349	154	18605
86	800	115	19	34	14	11	17	1010
87	16200	1240	244	284	853	205	109	19135
88	980	90	21	41	12	55	21	1220
89	1700	160	33	70	148	45	21	2177
90	2800	170	44	40	439	158	34	3685
91	400	25	7	9	95	26	3	565

92	7160	1295	145	221	533	229	127	9710
93	11200	1235	164	277	401	159	94	13530
94	3020	245	46	90	104	68	25	3598
95	28520	2175	424	781	491	209	146	32746
96	1280	170	22	32	13	10	5	1532
97	26160	1225	256	295	2189	603	178	30906
98	30960	1445	332	354	1184	381	136	34792
99	65380	3690	930	1302	5502	2325	730	79859
Total	1272300	112875	22633	33146	39572	37600	14776	1532902

Table A76. Two-digit occupational distribution, Recent Immigrants by region of origin, 1996 Census (NZSCO68)

	UK & Ireland	Austr.	Europe& Nth. Am.	Pacific Islands	Asia	Other	Total
1	105	31	126	8	85	33	388
2	585	151	401	29	377	298	1841
3	215	30	144	35	174	93	691
4	35	14	23	3	18	8	101
5	100	44	153	11	84	43	435
6	535	78	162	28	200	431	1434
7	820	161	228	40	165	178	1592
8	345	50	251	8	341	86	1081
9	70	29	59	4	51	35	248
11	235	66	87	25	181	114	708
12	25	5	12	5	6	21	74
13	1015	345	738	79	497	349	3023
14	5	44	60	15	47	13	184
15	100	32	66	7	60	33	298
16	150	51	96	2	63	55	417
17	75	51	91	8	53	26	304
18	80	22	46	2	22	9	181
19	280	101	178	30	177	133	899
20	5	4	31	2	23	16	81
21	1055	600	604	59	1035	421	3774
30	155	65	73	18	76	40	427
31	40	11	48	10	69	12	190
32	330	131	164	42	223	134	1024
33	395	168	179	206	494	192	1634
34	15	21	35	13	71	32	187
35	20	18	26	5	18	5	92
37	10	9	13	19	28	12	91
38	25	8	11	2	9	2	57
39	710	300	368	171	699	260	2508
40	140	76	97	73	372	77	835
41	30	38	45	47	341	33	534
42	15	16	13	2	21	3	70
43	305	104	166	23	168	116	882
44	70	40	41	7	232	43	433
45	545	289	293	299	1175	278	2879
49		2	2	2	1	2	9
50	75	68	127	6	181	34	491
51	60	24	54	9	246	29	422
52	15	16	19	8	49	7	114
53	280	239	296	123	1149	205	2292
54	100	73	98	90	329	71	761
55	95	65	114	143	280	75	772
56	10	6	7	37	61	12	133
57	80	38	25	6	58	30	237
58	115	36	34	34	25	25	269
59	205	124	204	110	522	74	1239
60	25	7	25	3	6	4	70
61	165	89	270	29	225	54	832
62	275	159	228	173	251	84	1170
63	5	5	21	21	7	3	62
64		6	6	1	7	3	23
70	65	24	41	12	49	33	224
71	10	7	3	1	2	1	24
72	15	6	11	20	21	1	74
73	10	3	7	12	5	1	38
74	5	1	6	10	11	2	35
75	15	4	7	24	32	5	87
76	5		1	3	2	2	13
77	100	67	93	116	181	98	655
78			1				1
79	65	23	50	140	688	29	995
80	5		6	22	24	3	60
81	155	33	65	51	59	25	388
82	10	2	2		1	1	16
83	105	12	32	86	108	27	370
84	380	80	132	84	165	117	958
85	180	54	74	28	140	58	534
86	15	6	9	4	4	7	45
87	150	48	44	69	66	40	417
88		4	8	2	19	5	38
89	15	2	10	11	13	4	55
90	5	9	6	59	55	6	140
91	5	2	3	6	6	1	23
92	100	17	27	42	67	41	294
93	60	23	38	35	56	35	247

94	20	12	20	6	21	7	86
95	260	81	101	58	76	32	608
96	15	2	1	2		1	21
97	95	45	61	235	257	62	755
98	115	63	59	32	100	32	401
99	345	185	333	581	1083	249	2776
Total	12470	4975	7909	3883	14363	5271	48871

Table A77: Proportion of Non-Missing Responses for Various Variables, by Region-of-Origin and Census Year.

Variable	Income	Parent	Region	Qualif.	Lang.	Selfemp	Hours	Indus.	Occup.
						(As a proportion of employed)			
1981 Census									
New Zealand	0.918	0.615	0.993	0.986		0.919	1.000	0.989	1.000
UK & Ireland	0.937	0.748	0.997	0.983		0.928	1.000	0.990	1.000
Australia	0.922	0.690	0.995	0.984		0.909	1.000	0.989	1.000
Europe & Nth America	0.923	0.769	0.995	0.952		0.937	1.000	0.984	1.000
Pacific Islands	0.847	0.635	0.998	0.944		0.962	1.000	0.973	1.000
Asia	0.917	0.642	0.997	0.962		0.939	1.000	0.985	1.000
Other	0.934	0.654	0.995	0.977		0.917	1.000	0.991	1.000
1986 Census									
New Zealand	0.950	0.600	0.997	0.989		0.996	0.970	0.991	1.000
UK & Ireland	0.971	0.739	0.998	0.993		0.997	0.981	0.994	1.000
Australia	0.954	0.663	0.996	0.993		0.996	0.975	0.990	1.000
Europe & Nth America	0.950	0.751	0.996	0.985		0.995	0.970	0.989	1.000
Pacific Islands	0.885	0.605	0.998	0.969		0.995	0.936	0.982	1.000
Asia	0.934	0.638	0.998	0.983		0.995	0.968	0.988	1.000
Other	0.952	0.648	0.995	0.993		0.996	0.970	0.992	1.000
1996 Census									
New Zealand	0.948	0.779	1.000	0.990	0.991	0.976	0.957	0.953	0.987
UK & Ireland	0.969	0.816	1.000	0.994	0.992	0.985	0.975	0.966	0.993
Australia	0.959	0.776	1.000	0.992	0.990	0.978	0.965	0.960	0.989
Europe & Nth America	0.951	0.804	1.000	0.986	0.991	0.978	0.955	0.936	0.982
Pacific Islands	0.857	0.837	1.000	0.965	0.984	0.929	0.871	0.876	0.947
Asia	0.914	0.800	1.000	0.968	0.977	0.935	0.894	0.897	0.941
Other	0.926	0.804	1.000	0.984	0.982	0.960	0.941	0.935	0.977

Table A78: Proportion of Imputed Responses for Various Variables, by Region-of-Origin (1996, in percent).

Region of Origin	Variable: Labour Force Status	Gender	Age
New Zealand	4.56	0.18	0.53
UK and Ireland	2.57	0.10	0.34
Australia	3.49	0.10	0.39
Europe & Nth America	4.54	0.11	0.36
Pacific Islands	11.91	0.34	0.88
Asia	7.74	0.19	0.58
Other	6.10	0.59	1.42
Total	6.54	0.22	0.62

Table A79: Type of Labour Force Imputation, by Recorded Labour Force Status (1996, in percent)

	Labour Force Status: ft	pt	ue	nolf	Total
No Imputation	94.23	90.68	90.29	93.56	93.46
Any Value Imputed	1.78	2.35	1.63	2.02	1.95
Full or Part Time	3.99	6.97	0	0	2.87
Unemployed or not in Labour Force	0	0	8.08	4.42	1.72

Table B1: English speaking versus non-english speaking migrants

	English Speaking Migrants						Non-English Speaking Migrants			
	All		Male		Female		All		Male		Female	
	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.
Cohort Pre-1960	-.2311	.0185	-.3318	.0217	-.1595	.0316	-.1927	.0174	-.3432	.0209	-.0659	.0297
Cohort 1961-65	-.1713	.0161	-.2648	.0189	-.1082	.0275	-.1566	.0149	-.2877	.0179	-.0581	.0254
Cohort 1966-70	-.1681	.0144	-.2484	.0169	-.1107	.0246	-.1519	.0129	-.2873	.0155	-.0465	.0222
Cohort 1971-75	-.1368	.0123	-.2148	.0144	-.0823	.0210	-.1355	.0106	-.2659	.0126	-.0390	.0184
Cohort 1976-80	-.1731	.0110	-.2324	.0129	-.1399	.0188	-.1959	.0088	-.3102	.0105	-.1097	.0154
Cohort 1981-85	-.1540	.0110	-.1987	.0131	-.1256	.0184	-.1769	.0085	-.2774	.0103	-.1028	.0146
Cohort 1986-90	-.1093	.0118	-.1371	.0145	-.0839	.0192	-.2111	.0084	-.3199	.0102	-.1202	.0140
Cohort 1991-95	-.0809	.0123	-.0753	.0148	-.0983	.0204	-.3895	.0099	-.4636	.0122	-.3394	.0161
1986 Census	.7803	.0268	.6419	.0316	1.0356	.0463	.9504	.0288	.8534	.0349	1.0825	.0490
1996 Census	.5475	.0268	.1718	.0323	.8955	.0449	.6386	.0280	.3587	.0345	.8609	.0465
Y in NZ	.0119	.0011	.0165	.0013	.0078	.0019	.0056	.0010	.0083	.0012	.0015*	.0017
" * School	-.0018*	.0010	-.0024	.0012	.0011*	.0017	.0075	.0010	.0075	.0012	.0104	.0016
" * Vocational	-.0028	.0009	-.0051	.0011	.0015*	.0017	.0023	.0010	.0023*	.0012	.0045	.0018
" * University	-.0080	.0011	-.0130	.0013	.0008*	.0020	.0177	.0012	.0187	.0014	.0210	.0022
Y in NZ sq/100	-.0106	.0018	-.0174	.0021	-.0031*	.0032	-.0009*	.0018	-.0017*	.0022	.0057*	.0032
" * School	.0035*	.0022	.0055	.0026	-.0030*	.0037	-.0116	.0024	-.0108	.0029	-.0185	.0040
" * Vocational	.0042	.0020	.0074	.0023	-.0018*	.0036	-.0033*	.0024	-.0038*	.0029	-.0078*	.0042
" * University	.0201	.0026	.0309	.0029	.0002*	.0047	-.0265	.0029	-.0261	.0034	-.0414	.0055
Hours of work	.0219	.0001	.0114	.0002	.0315	.0002	.0214	.0001	.0127	.0002	.0293	.0002
" * 1986	-.0042	.0002	-.0044	.0002	-.0047	.0003	-.0055	.0002	-.0054	.0003	-.0051	.0003
" * 1996	-.0034	.0002	.0017	.0002	-.0088	.0003	-.0056	.0002	-.0006	.0002	-.0102	.0003
Age	.0820	.0009	.1148	.0011	.0637	.0017	.0809	.0010	.1071	.0013	.0652	.0018
" * 1986	-.0105	.0013	-.0005*	.0016	-.0236	.0023	-.0167	.0014	-.0102	.0018	-.0248	.0025
" * 1996	.0249	.0013	.0259	.0017	.0173	.0022	.0229	.0014	.0203	.0018	.0196	.0023
Age squared/100	-.0869	.0012	-.1245	.0015	-.0687	.0022	-.0871	.0014	-.1169	.0017	-.0720	.0025
" * 1986	.0103	.0017	-.0017*	.0020	.0272	.0030	.0180	.0019	.0102	.0023	.0284	.0033
" * 1996	-.0305	.0017	-.0308	.0021	-.0209	.0029	-.0277	.0018	-.0241	.0023	-.0226	.0031
School qual.	.1663	.0072	.1328	.0086	.1754	.0122	.1435	.0072	.1035	.0088	.1689	.0120
" * 1986	.0020*	.0096	.0033*	.0117	-.0020*	.0159	-.0034*	.0094	.0107*	.0118	-.0108*	.0152
" * 1996	.0266	.0099	.0397	.0120	.0261*	.0163	.0513	.0099	.0707	.0124	.0463	.0160
" * Immig.	-.0117*	.0142	.0223*	.0172	-.0585	.0235	-.0648	.0136	-.0047*	.0166	-.1261	.0226
" * Immig. * 1986	-.0038*	.0110	-.0005*	.0136	.0013*	.0175	-.0253	.0122	-.0448	.0153	-.0183*	.0196
" * Immig. * 1996	-.0310	.0124	-.0467	.0153	-.0247*	.0203	-.0671	.0132	-.1162	.0164	-.0329*	.0213
Vocational qual.	.3004	.0076	.2499	.0087	.3412	.0134	.2898	.0075	.2371	.0089	.3368	.0131
" * 1986	-.0139*	.0097	-.0169*	.0112	-.0170*	.0171	-.0069*	.0095	.0029*	.0113	-.0216*	.0164
" * 1996	-.0254	.0103	-.0158*	.0121	-.0357	.0176	.0094*	.0102	.0246	.0124	-.0073*	.0172
" * Immig.	-.0113*	.0143	.0318*	.0165	-.0671	.0249	-.0231*	.0155	.0373	.0185	-.0756	.0264
" * Immig. * 1986	.0052*	.0109	.0256	.0124	-.0391	.0198	-.0263*	.0135	-.0275*	.0160	-.0324*	.0236
" * Immig. * 1996	-.0164*	.0127	-.0089*	.0148	-.0444	.0221	-.0463	.0146	-.0626	.0176	-.0401*	.0247
University qual.	.5308	.0144	.4912	.0153	.5257	.0303	.5270	.0143	.4798	.0156	.5252	.0295
" * 1986	.0275*	.0184	.0364*	.0200	-.0059*	.0369	.0332	.0182	.0596	.0204	-.0101*	.0359

```
" * 1996            .0314  .0175 |  .0643  .0194 | -.0035* .0345 |  .0649  .0174 |
.1053  .0199 |  .0346* .0337
" * Immig.          .0122* .0204 |  .0851  .0225 | -.0935  .0399 | -.1866  .0213 | -
.1118  .0237 | -.2604  .0427
" * Immig. * 1986   .0155* .0214 |  .0146* .0233 |  .0203* .0422 |  .0211* .0232 |
.0037* .0258 |  .0348* .0465
" * Immig. * 1996  -.0041* .0209 | -.0099* .0234 |  .0108* .0402 | -.0110* .0221 | -
.0698  .0251 |  .0532* .0430
Male               .3696  .0046 |               |               |  .3244  .0049 |
|
Male * 1986         .0483  .0062 |               |               |  .0427  .0065 |
|
Male * 1996        -.0770  .0060 |               |               | -.0792  .0062 |
|
R-squared             0.4708          0.4486          0.4382          0.4329
0.4153          0.4061
```

Table B2: Pooled log-income regressions by Region-of-Origin. Results for Men

	UK&Ireland		Australia		Europe&NthAm.		Pacific Islands		Asia		Other	
	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.
Cohort Pre-1960	-.2758	.0332	-.2589	.0350	-.3545	.0344	-.2877	.0248	-.3487	.0383	-.4502	.0672
Cohort 1961-65	-.2282	.0289	-.2171	.0302	-.3031	.0303	-.2725	.0217	-.2665	.0338	-.3703	.0584
Cohort 1966-70	-.1993	.0262	-.2232	.0267	-.2920	.0274	-.2850	.0186	-.2396	.0290	-.3588	.0536
Cohort 1971-75	-.1651	.0226	-.2133	.0226	-.2722	.0241	-.2714	.0150	-.2029	.0240	-.3112	.0459
Cohort 1976-80	-.1352	.0222	-.2405	.0193	-.2773	.0213	-.3041	.0130	-.2969	.0177	-.2823	.0413
Cohort 1981-85	-.0752	.0237	-.1964	.0205	-.2496	.0216	-.2743	.0130	-.2590	.0176	-.3043	.0404
Cohort 1986-90	.0161*	.0284	-.1254	.0257	-.2221	.0240	-.2820	.0140	-.3324	.0168	-.2516	.0383
Cohort 1991-95	-.0048*	.0287	-.0802	.0237	-.1827	.0238	-.4492	.0209	-.5243	.0179	-.2514	.0381
1986 Census	.7978	.0362	.7349	.0386	.7433	.0380	.9170	.0375	.8497	.0416	.8153	.0420
1996 Census	.3295	.0379	.2791	.0390	.2839	.0387	.3991	.0382	.4266	.0406	.3330	.0418
Y in NZ	.0157	.0020	.0128	.0020	.0128	.0022	.0084	.0015	-.0012*	.0022	.0225	.0043
" * School	-.0004*	.0024	-.0027*	.0022	-.0017*	.0022	.0119	.0020	.0104	.0025	.0034*	.0043
" * Vocational	-.0032*	.0021	-.0091	.0020	-.0008*	.0021	.0032*	.0022	.0163	.0026	-.0069*	.0041
" * University	-.0144	.0027	-.0167	.0026	-.0100	.0024	.0036*	.0038	.0325	.0025	-.0075*	.0043
Y in NZ sq/100	-.0157	.0035	-.0135	.0034	-.0081	.0039	-.0043*	.0033	.0158	.0040	-.0304	.0080
" * School	.0008*	.0050	.0060*	.0046	.0025*	.0050	-.0208	.0052	-.0164	.0058	.0026*	.0099
" * Vocational	.0023*	.0043	.0146	.0041	.0002*	.0046	-.0014*	.0053	-.0327	.0059	.0111*	.0093
" * University	.0302	.0058	.0372	.0054	.0276	.0055	.0052*	.0084	-.0522	.0058	.0204	.0100
Hours of work	.0123	.0002	.0129	.0002	.0117	.0002	.0144	.0002	.0128	.0002	.0133	.0002
" * 1986	-.0062	.0003	-.0058	.0003	-.0058	.0003	-.0069	.0003	-.0070	.0003	-.0071	.0003
" * 1996	.0006	.0003	.0004*	.0003	.0007	.0003	-.0015	.0003	-.0012	.0003	.0001*	.0003
Age	.1163	.0013	.1185	.0014	.1161	.0014	.1092	.0014	.1175	.0016	.1208	.0016
" * 1986	-.0041	.0019	-.0020*	.0020	-.0027*	.0019	-.0095	.0019	-.0047	.0022	-.0033*	.0022
" * 1996	.0214	.0020	.0245	.0021	.0227	.0020	.0221	.0020	.0197	.0022	.0216	.0022
Age squared/100	-.1262	.0017	-.1289	.0019	-.1263	.0018	-.1199	.0018	-.1274	.0020	-.1318	.0021
" * 1986	.0023*	.0024	-.0007*	.0026	.0004*	.0025	.0084	.0025	.0027*	.0028	.0009*	.0029
" * 1996	-.0260	.0025	-.0303	.0027	-.0269	.0025	-.0272	.0026	-.0240	.0028	-.0260	.0029
School qual.	.1409	.0085	.1369	.0087	.1314	.0089	.1063	.0086	.1387	.0091	.1371	.0089
" * 1986	-.0059*	.0117	.0066*	.0122	.0087*	.0124	.0121*	.0116	-.0098*	.0127	.0085*	.0126
" * 1996	.0197*	.0121	.0270	.0125	.0312	.0127	.0502	.0123	.0387	.0130	.0302	.0128
" * Immig.	.0005*	.0289	.0498	.0253	.0329*	.0266	-.0372*	.0219	-.0042*	.0269	-.0141*	.0469
" * Immig. * 1986	.0364	.0182	-.0243*	.0200	-.0026*	.0173	-.0782	.0190	-.0234*	.0237	.0410*	.0310
" * Immig. * 1996	-.0596	.0219	-.0127*	.0233	-.0236*	.0207	-.1096	.0209	-.1390	.0251	-.0907	.0360
Vocational qual.	.2533	.0086	.2453	.0089	.2465	.0090	.2361	.0087	.2475	.0092	.2421	.0090
" * 1986	-.0169*	.0113	-.0053*	.0117	-.0042*	.0118	.0100*	.0111	-.0172*	.0122	.0004*	.0122
" * 1996	-.0253	.0121	-.0194*	.0125	-.0167*	.0127	.0057*	.0124	.0036*	.0130	-.0146*	.0128
" * Immig.	.0226*	.0259	.0820	.0252	-.0309*	.0257	-.0264*	.0281	.0033*	.0308	.1833	.0473
" * Immig. * 1986	.0175*	.0152	.0383	.0190	.0432	.0153	-.0679	.0235	.0323*	.0259	-.0384*	.0305
" * Immig. * 1996	-.0180*	.0196	.0439*	.0230	-.0091*	.0197	-.0706	.0251	-.0376*	.0280	-.0996	.0363
University qual.	.4944	.0148	.4862	.0152	.4877	.0156	.4789	.0151	.4884	.0159	.4828	.0154
" * 1986	.0371*	.0195	.0477	.0202	.0492	.0205	.0657	.0198	.0367*	.0210	.0533	.0206
" * 1996	.0554	.0190	.0607	.0196	.0637	.0200	.0857	.0194	.0846	.0204	.0659	.0199

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" * Immig.          .1550  .0351 |  .0849  .0330 |  .0332* .0309 | - .0304* .0545 | -
.1746  .0298 |  .1569  .0497
" * Immig. * 1986  -.0362* .0298 |  .0978  .0340 |  .0321* .0275 | -.1049  .0508 |
.0331* .0294 | -.0453* .0389
" * Immig. * 1996  -.0816  .0309 |  .0894  .0342 |  .0115* .0289 | -.0426* .0470 | -
.0379* .0301 | -.0610* .0420
Constant           6.3022  .0251   6.2412  .0269   6.3427  .0264   6.3900  .0265
6.2580  .0289   6.1869  .0290

Observations          141498          129100           154849          149000
132028         112418
R-squared               .4629           .4668            .4277           .4382
.4350          .4701
```

Table B3: Pooled log-income regressions by Region-of-Origin. Results for Women

	UK&Ireland		Australia		Europe&NthAm.		Pacific Islands		Asia		Other	
	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.
Cohort Pre-1960	.0429*	.0475	-.1011	.0490	-.2836	.0546	.0707	.0357	-.2623	.0498	-.2323	.0934
Cohort 1961-65	.0771*	.0415	-.1241	.0421	-.2306	.0484	.0381*	.0311	-.1847	.0437	-.1824	.0815
Cohort 1966-70	.0575*	.0376	-.1242	.0377	-.2072	.0438	.0439*	.0270	-.2082	.0383	-.1785	.0752
Cohort 1971-75	.0756	.0320	-.1096	.0324	-.1747	.0388	.0147*	.0223	-.1559	.0318	-.1693	.0647
Cohort 1976-80	.0380*	.0318	-.1527	.0282	-.2235	.0351	-.0388	.0195	-.1974	.0246	-.2097	.0587
Cohort 1981-85	.0366*	.0332	-.1120	.0288	-.1697	.0345	-.0508	.0187	-.1967	.0231	-.2213	.0583
Cohort 1986-90	.1030	.0390	-.0946	.0335	-.0903	.0362	-.0719	.0197	-.1869	.0211	-.1444	.0556
Cohort 1991-95	.0714*	.0418	-.0458*	.0321	-.1291	.0367	-.3090	.0285	-.3931	.0216	-.2752	.0572
1986 Census	1.0920	.0541	1.0571	.0561	1.0247	.0567	1.1462	.0536	1.0713	.0591	1.0653	.0614
1996 Census	.8900	.0535	.9013	.0543	.8351	.0547	.9681	.0522	.8800	.0551	.9193	.0584
Y in NZ	-.0031*	.0029	.0073	.0029	.0101	.0036	-.0028*	.0022	.0011*	.0029	.0154	.0062
" * School	.0098	.0034	-.0030*	.0028	.0034*	.0034	.0120	.0027	.0157	.0032	.0033*	.0063
" * Vocational	.0072	.0033	-.0001*	.0029	.0093	.0035	.0044*	.0030	.0150	.0034	-.0054*	.0061
" * University	.0008*	.0045	.0016*	.0038	-.0004*	.0038	.0108*	.0061	.0385	.0035	-.0095*	.0069
Y in NZ sq/100	.0139	.0052	-.0054*	.0049	-.0023*	.0065	.0085*	.0046	.0156	.0058	-.0204*	.0123
" * School	-.0250	.0072	.0078*	.0060	-.0082*	.0077	-.0252	.0068	-.0275	.0078	-.0076*	.0147
" * Vocational	-.0157	.0069	.0041*	.0061	-.0175	.0077	-.0059*	.0071	-.0321	.0080	.0089*	.0140
" * University	-.0039*	.0102	-.0060*	.0085	.0047*	.0088	-.0324	.0136	-.0769	.0089	.0273*	.0168
Hours of work	.0317	.0003	.0312	.0003	.0303	.0003	.0311	.0003	.0294	.0003	.0311	.0003
" * 1986	-.0049	.0004	-.0049	.0004	-.0047	.0004	-.0056	.0004	-.0046	.0004	-.0049	.0004
" * 1996	-.0091	.0003	-.0092	.0003	-.0087	.0003	-.0107	.0003	-.0098	.0003	-.0089	.0004
Age	.0652	.0020	.0705	.0021	.0652	.0021	.0704	.0020	.0680	.0022	.0719	.0023
" * 1986	-.0260	.0027	-.0244	.0028	-.0229	.0028	-.0275	.0027	-.0243	.0030	-.0249	.0031
" * 1996	.0178	.0027	.0175	.0028	.0200	.0028	.0158	.0027	.0193	.0028	.0161	.0030
Age squared/100	-.0702	.0026	-.0778	.0029	-.0711	.0028	-.0787	.0028	-.0745	.0030	-.0795	.0031
" * 1986	.0304	.0035	.0279	.0038	.0259	.0037	.0315	.0036	.0276	.0040	.0286	.0042
" * 1996	-.0203	.0035	-.0199	.0037	-.0232	.0036	-.0172	.0035	-.0224	.0037	-.0182	.0040
School qual.	.1892	.0123	.1846	.0126	.1778	.0128	.1766	.0120	.1923	.0127	.1895	.0128
" * 1986	-.0153*	.0163	-.0015*	.0168	-.0009*	.0171	-.0083*	.0154	-.0285*	.0170	-.0065*	.0173
" * 1996	.0158*	.0166	.0105*	.0170	.0214*	.0172	.0203*	.0163	.0181*	.0172	.0069*	.0173
" * Immig.	-.1198	.0396	-.0493*	.0335	-.0603*	.0409	-.1412	.0305	-.0751	.0359	-.0280*	.0662
" * Immig. * 1986	.0171*	.0235	.0200*	.0237	-.0117*	.0238	-.0296*	.0251	-.0088*	.0313	-.0453*	.0396
" * Immig. * 1996	-.0186*	.0293	.0367*	.0292	-.0659	.0294	.0195*	.0277	-.1154	.0327	-.0530*	.0484
Vocational qual.	.3514	.0132	.3441	.0136	.3423	.0138	.3406	.0130	.3522	.0137	.3468	.0137
" * 1986	-.0283*	.0172	-.0135*	.0177	-.0139*	.0180	-.0168*	.0164	-.0382	.0178	-.0182*	.0181
" * 1996	-.0483	.0177	-.0492	.0181	-.0398	.0183	-.0358	.0174	-.0331*	.0182	-.0515	.0183
" * Immig.	-.1561	.0400	-.0480*	.0364	-.1168	.0429	-.1302	.0376	-.0176*	.0413	.0524*	.0662
" * Immig. * 1986	.0073*	.0257	-.0368*	.0277	-.0647	.0274	-.0009*	.0319	-.0566*	.0365	-.0468*	.0414
" * Immig. * 1996	.0131*	.0307	-.0304*	.0321	-.0968	.0321	-.0319*	.0333	-.0776	.0373	-.0326*	.0496
University qual.	.5354	.0294	.5270	.0301	.5291	.0306	.5227	.0290	.5408	.0303	.5298	.0300
" * 1986	-.0160*	.0361	-.0021*	.0369	-.0039*	.0375	-.0027*	.0354	-.0285*	.0371	-.0068*	.0370
" * 1996	-.0128*	.0337	-.0127*	.0345	-.0053*	.0350	.0079*	.0333	.0076*	.0347	-.0156*	.0345

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" * Immig.          .0169* .0611 | -.0671* .0546 | -.1157  .0537 | -.2636  .0997 | -
.2357  .0502 | -.0019* .0834
" * Immig. * 1986  -.1072* .0554 |  .0319* .0560 |  .1000  .0488 |  .1128* .0955 | -
.0029* .0525 |  .0125* .0702
" * Immig. * 1996  -.0489* .0538 |  .0306* .0538 |  .0463* .0486 |  .2204  .0870 | -
.0334* .0498 | -.0009* .0705
Constant           6.1568  .0387   6.1007  .0408   6.2234  .0408   6.1239  .0394
6.1956  .04264  6.0762  .0441

Observations           98956           97358           102964          106344
97312          81250
R-squared             .4496           .4417            .4296           .4225
.4189          .4430
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Table B4: Pooled participation logits. Results for men

	ESM		NESM		UK&Ireland		Australia		Europe&NthAm		Pac.Islands		Asia		Other	
	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.
Cohort Pre-1960	.336	.048	.405	.051	.937	.217	.292	.076	.172	.036	.840	.146	.099	.022	.117	.048
Cohort 1961-65	.343	.044	.372	.041	.855	.177	.281	.066	.168	.032	.641	.100	.150	.032	.113	.041
Cohort 1966-70	.366	.044	.351	.035	.821	.161	.286	.063	.201	.036	.535	.075	.202	.039	.105	.035
Cohort 1971-75	.454	.048	.351	.030	.968	.170	.387	.074	.237	.038	.482	.058	.198	.030	.161	.046
Cohort 1976-80	.462	.045	.389	.029	.886	.159	.422	.071	.303	.043	.457	.049	.249	.028	.138	.034
Cohort 1981-85	.452	.040	.357	.022	.690	.122	.492	.075	.323	.042	.384	.034	.203	.020	.162	.034
Cohort 1986-90	.574	.050	.355	.017	.851	.159	.590	.092	.452	.059	.443	.032	.196	.013	.224	.037
Cohort 1991-95	.529	.041	.187	.007	.682	.125	.764	.105	.396	.043	.300	.021	.120	.006	.206	.022
1986 Census	.499	.253	1.60	.855	.554	.364	.318	.222	.280	.172	.843	.539	.516	.359	.363	.277
1996 Census	46.7	19.0	25.6	10.9	64.0	33.4	27.7	15.6	23.1	11.5	15.5	8.15	40.7	22.1	44.9	27.1
Y in NZ	1.06	.007	1.03	.005	1.02	.012	1.05	.013	1.10	.012	1.00	.008	1.09	.010	1.12	.022
" * School	1.00	.006	1.05	.005	.981	.014	1.04	.013	1.02	.010	1.00	.009	1.04	.009	.994	.016
" * Vocational	.996	.006	1.02	.005	.993	.012	1.01	.013	1.00	.010	1.00	.011	1.01	.011	.957	.016
" * University	1.00	.008	1.09	.008	1.00	.019	1.01	.020	1.00	.013	1.07	.023	1.06	.011	1.03	.021
Y in NZ sq/100	.911	.009	.971	.008	.941	.015	.949	.017	.882	.015	.981	.014	.912	.014	.852	.027
" * School	.993	.012	.912	.010	1.05	.026	.930	.021	.966	.020	.991	.021	.923	.018	.981	.037
" * Vocational	1.00	.011	.957	.012	1.00	.020	.965	.021	.993	.019	.991	.022	.972	.023	1.08	.042
" * University	1.00	.017	.864	.014	1.01	.033	.983	.034	1.01	.029	.919	.041	.900	.022	.931	.044
Age	1.94	.033	1.82	.034	1.97	.043	1.85	.043	1.88	.039	1.76	.040	1.88	.044	1.87	.048
" * 1986	.972	.021	.920	.021	.971	.027	.983	.029	.998	.026	.931	.026	.980	.029	.981	.032
" * 1996	.736	.013	.750	.014	.722	.017	.751	.019	.752	.016	.769	.018	.738	.018	.729	.019
Age squared/100	.416	.008	.448	.009	.405	.010	.435	.011	.430	.010	.458	.011	.429	.011	.430	.012
" * 1986	1.04	.025	1.10	.029	1.04	.033	1.03	.035	1.01	.029	1.10	.035	1.03	.035	1.03	.039
" * 1996	1.46	.030	1.45	.032	1.50	.041	1.45	.042	1.44	.036	1.41	.038	1.48	.042	1.51	.047
School qual.	1.35	.146	1.14	.123	1.40	.155	1.33	.148	1.33	.145	1.21	.133	1.31	.145	1.36	.152
" * 1986	.913	.120	.952	.124	.875	.119	.933	.127	.908	.122	.972	.130	.860	.118	.887	.123
" * 1996	1.34	.155	1.78	.204	1.26	.149	1.33	.158	1.39	.164	1.46	.173	1.49	.177	1.32	.158
" * Immig.	.742	.111	.541	.078	.825	.210	.785	.186	.770	.144	.443	.092	.743	.150	1.09	.326
" * Immig. * 1986	1.06	.156	1.28	.206	1.17	.221	1.00	.215	.949	.154	2.16	.485	1.08	.240	1.55	.473
" * Immig. * 1996	.952	.127	.817	.116	1.08	.189	.898	.178	.726	.111	1.96	.392	.579	.112	1.15	.316
Vocational qual.	1.41	.137	1.22	.119	1.47	.146	1.42	.142	1.40	.138	1.32	.131	1.39	.139	1.44	.145
" * 1986	.990	.113	1.04	.118	.951	.112	1.00	.119	.974	.114	1.05	.122	.929	.111	.958	.117
" * 1996	1.59	.173	2.10	.228	1.46	.164	1.52	.171	1.60	.177	1.83	.204	1.66	.186	1.54	.175
" * Immig.	1.24	.177	1.05	.162	1.10	.252	.979	.230	1.47	.275	.740	.192	1.15	.269	3.39	1.19
" * Immig. * 1986	.869	.110	.925	.146	.930	.142	1.21	.233	.698	.103	1.26	.326	1.10	.259	.522	.174
" * Immig. * 1996	.661	.083	.637	.097	.797	.124	.908	.174	.462	.070	1.11	.275	.561	.125	.490	.162
University qual.	1.56	.283	1.36	.247	1.65	.304	1.61	.295	1.57	.286	1.49	.274	1.56	.286	1.63	.300
" * 1986	1.47	.349	1.52	.358	1.40	.339	1.46	.352	1.43	.343	1.52	.361	1.36	.329	1.40	.340
" * 1996	2.46	.521	3.30	.696	2.23	.479	2.34	.502	2.46	.523	2.87	.613	2.55	.544	2.39	.512
" * Immig.	.702	.163	.341	.078	.722	.266	.802	.302	1.06	.293	.050	.018	.450	.119	1.34	.544
" * Immig. * 1986	.807	.218	.880	.243	.848	.299	1.07	.422	.601	.179	2.42	.963	.908	.282	.450	.193
" * Immig. * 1996	.844	.206	1.03	.258	.793	.254	.992	.358	.553	.154	7.95	2.83	.952	.266	.725	.291
Partner	1.46	.249	1.96	.338	1.64	.350	2.06	.481	1.37	.280	2.13	.422	2.07	.472	1.88	.486
" * 1986	1.83	.391	1.60	.339	1.67	.456	1.89	.554	1.89	.479	1.90	.462	1.61	.472	2.07	.674
" * 1996	1.51	.272	1.14	.200	1.45	.325	1.19	.290	1.60	.343	1.08	.221	1.04	.244	1.16	.310
Sole Parent	.119	.024	.207	.041	.109	.028	.128	.035	.110	.026	.175	.040	.192	.054	.110	.034
" * 1986	5.37	1.43	3.47	.899	4.84	1.67	5.40	1.95	7.23	2.26	4.47	1.31	3.28	1.22	6.35	2.56

" * 1996	2.32 .514	1.96 .414	2.30 .649	1.88 .560	2.50 .648	1.98 .480	1.80 .530	2.32 .758
Joint Parent	1.17 .068	1.27 .080	1.14 .089	1.12 .095	1.22 .083	1.20 .092	1.24 .105	1.19 .110
" * 1986	1.05 .077	.881 .068	1.10 .109	.988 .105	1.00 .085	.877 .082	1.00 .106	.924 .108
" * 1996	.748 .052	.620 .042	.729 .068	.722 .072	.732 .060	.590 .050	.693 .063	.707 .075
Observations	188545	193784	116602	103092	132339	129330	120449	91541
Log-Likelihood	-41326.0	-55344.9	-24494.9	-22070.6	-29907.3	-32121.9	-32960.2	-20225.4

Table B5: Pooled employment logits. Results for men

	ESM		NESM		UK&Ireland		Australia		Europe&NthAm		Pac.Islands		Asia		Other	
	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.
Cohort Pre-1960	.253	.056	.081	.013	.597	.226	.179	.061	.089	.027	.184	.035	.057	.017	.033	.017
Cohort 1961-65	.293	.057	.087	.012	.652	.221	.203	.060	.122	.034	.177	.029	.049	.013	.043	.018
Cohort 1966-70	.330	.059	.097	.011	.627	.196	.244	.065	.162	.041	.183	.026	.069	.016	.045	.017
Cohort 1971-75	.437	.067	.108	.010	.911	.251	.269	.059	.250	.054	.167	.019	.126	.024	.076	.023
Cohort 1976-80	.522	.070	.163	.013	1.06	.283	.396	.075	.323	.058	.202	.021	.189	.025	.098	.025
Cohort 1981-85	.625	.077	.202	.014	1.01	.260	.445	.079	.578	.101	.209	.019	.220	.027	.104	.024
Cohort 1986-90	.885	.106	.261	.015	1.19	.313	.661	.124	.825	.142	.259	.020	.256	.023	.145	.026
Cohort 1991-95	.843	.092	.198	.011	.730	.179	.829	.137	.474	.072	.192	.016	.226	.018	.138	.019
1986 Census	.011	.009	.152	.103	.026	.027	.020	.023	.017	.016	.308	.231	.025	.027	.100	.114
1996 Census	.096	.070	.218	.117	.401	.355	.121	.122	.128	.107	.154	.091	.320	.299	1.45	1.38
Y in NZ	1.06	.012	1.10	.007	1.02	.021	1.09	.018	1.12	.020	1.06	.009	1.14	.014	1.19	.028
" * School	1.01	.011	1.03	.007	1.00	.023	1.02	.019	1.02	.017	.988	.011	1.05	.014	.959	.022
" * Vocational	1.02	.010	1.06	.008	1.01	.021	1.00	.019	1.06	.016	.992	.012	1.08	.016	.951	.022
" * University	1.03	.014	1.20	.011	1.02	.032	.920	.040	1.07	.021	1.03	.030	1.19	.017	1.12	.030
Y in NZ sq/100	.935	.017	.928	.013	.962	.032	.905	.025	.895	.029	.934	.018	.872	.022	.802	.036
" * School	.973	.025	.927	.017	1.01	.050	.958	.040	.946	.039	1.00	.030	.895	.029	1.07	.066
" * Vocational	.958	.022	.873	.016	.988	.042	.991	.039	.875	.032	1.00	.032	.839	.029	1.09	.067
" * University	.964	.034	.713	.017	.985	.071	1.39	.210	.887	.044	1.01	.084	.717	.024	.783	.050
Age	1.12	.030	1.12	.025	1.18	.040	1.12	.039	1.14	.036	1.10	.027	1.19	.043	1.22	.046
" * 1986	1.14	.038	1.06	.031	1.10	.046	1.14	.050	1.13	.044	1.03	.034	1.09	.049	1.05	.051
" * 1996	1.00	.028	.981	.023	.948	.034	1.00	.037	.981	.032	1.02	.027	.919	.034	.902	.036
Age squared/100	.887	.029	.869	.024	.836	.034	.902	.039	.862	.032	.892	.027	.817	.036	.807	.038
" * 1986	.839	.034	.926	.033	.880	.045	.837	.045	.858	.040	.946	.038	.890	.049	.934	.055
" * 1996	.982	.034	1.01	.029	1.04	.046	.978	.045	1.00	.040	.951	.031	1.09	.050	1.11	.055
School qual.	2.84	.593	2.56	.526	3.05	.643	3.25	.684	3.04	.637	3.22	.663	2.73	.575	3.04	.644
" * 1986	.637	.157	.533	.127	.619	.155	.563	.141	.564	.141	.477	.114	.598	.150	.594	.151
" * 1996	.793	.170	.826	.174	.749	.163	.704	.152	.736	.159	.625	.132	.812	.176	.734	.160
" * Immig.	.389	.099	.611	.143	.372	.144	.532	.178	.399	.118	.459	.118	.881	.303	1.35	.575
" * Immig. * 1986	1.52	.408	1.33	.355	1.78	.611	1.03	.360	1.40	.418	2.15	.607	.924	.362	1.22	.553
" * Immig. * 1996	1.27	.306	.876	.205	1.44	.448	.938	.304	.875	.238	2.08	.523	.408	.139	.856	.349
Vocational qual.	1.91	.299	1.78	.272	2.01	.320	2.15	.341	2.04	.322	2.23	.342	1.83	.291	1.99	.319
" * 1986	1.16	.222	.985	.180	1.13	.223	1.03	.203	1.02	.200	.890	.164	1.09	.215	1.10	.221
" * 1996	1.29	.217	1.54	.252	1.21	.207	1.15	.197	1.21	.206	1.11	.184	1.45	.248	1.30	.225
" * Immig.	.872	.188	.929	.195	1.13	.406	1.18	.373	.509	.131	1.02	.292	.920	.315	2.65	1.12
" * Immig. * 1986	.618	.131	.749	.175	.476	.137	.697	.217	.631	.148	.968	.287	.621	.233	1.15	.533
" * Immig. * 1996	.588	.119	.414	.087	.568	.166	.610	.185	.432	.101	.774	.211	.333	.113	.443	.180
University qual.	3.98	1.65	3.70	1.53	4.12	1.71	4.45	1.85	4.26	1.76	4.62	1.90	3.74	1.55	4.03	1.67
" * 1986	.728	.354	.626	.302	.713	.348	.643	.314	.640	.312	.571	.276	.687	.336	.695	.341
" * 1996	.800	.343	.983	.420	.759	.327	.713	.307	.754	.324	.703	.301	.930	.400	.835	.360
" * Immig.	.523	.247	.572	.274	.458	.300	2.37	1.79	.419	.213	.408	.280	.720	.402	.876	.552
" * Immig. * 1986	1.03	.557	.800	.444	1.35	.950	1.45	1.32	.731	.412	1.12	.852	.698	.445	1.26	.910
" * Immig. * 1996	.841	.403	.287	.141	1.34	.842	.533	.403	.432	.221	1.52	1.02	.195	.110	.578	.366
Partner	.800	.392	1.66	.476	1.20	.684	.829	.607	.682	.370	1.91	.606	.658	.408	1.68	1.02
" * 1986	5.77	2.99	1.90	.644	4.61	2.78	4.13	3.23	5.18	3.04	1.60	.601	5.77	3.90	2.93	1.94
" * 1996	3.19	1.57	1.43	.414	2.24	1.28	3.02	2.22	4.17	2.28	1.23	.397	3.72	2.31	1.63	1.00
Sole Parent	.738	.410	.727	.230	.763	.512	1.05	.896	.483	.281	.928	.344	.423	.246	.912	.676
" * 1986	1.30	.785	.857	.331	1.31	.959	.469	.425	1.36	.885	.618	.271	1.20	.805	.757	.617

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" * 1996           .564 .318 | .628 .205 | .505 .344 | .323 .276 | .859 .510 | .456
.174 | 1.00 .595 | .415 .312
Joint Parent       1.17 .101 | .959 .072 | 1.01 .119 | 1.15 .136 | 1.21 .120 | .928
.079 | .908 .114 | .958 .129
" * 1986           .769 .084 | .905 .086 | .820 .120 | .655 .098 | .780 .099 | .959
.103 | .849 .131 | .826 .139
" * 1996           .764 .074 | .733 .058 | .858 .113 | .678 .090 | .607 .067 | .761
.072 | .850 .111 | .698 .102
Observations        171627       167545      106417      94192       120074
116076      103269      83340
Log-Likelihood     -23354.1     -38637.2    -14037.8    -13493.4    -17599.8    -
24120.1    -20309.6    -13396.7
```

Table B6: Pooled participation logits. Results for women

	ESM		NESM		UK&Ireland		Australia		Europe&NthAm		Pac.Islands		Asia		Other	
	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.
Cohort Pre-1960	.686	.049	.827	.055	1.71	.199	.664	.079	.417	.049	1.17	.098	.588	.067	.480	.103
Cohort 1961-65	.751	.047	.800	.046	1.65	.169	.675	.069	.466	.048	1.00	.073	.552	.056	.433	.080
Cohort 1966-70	.729	.041	.691	.034	1.45	.135	.588	.053	.484	.045	.792	.050	.607	.055	.456	.079
Cohort 1971-75	.777	.037	.668	.027	1.52	.118	.545	.042	.528	.043	.699	.036	.697	.052	.529	.075
Cohort 1976-80	.655	.027	.614	.022	1.20	.092	.559	.038	.456	.032	.592	.028	.605	.033	.442	.055
Cohort 1981-85	.638	.026	.542	.018	1.03	.085	.569	.039	.499	.034	.535	.024	.461	.023	.419	.049
Cohort 1986-90	.669	.030	.487	.014	1.13	.123	.619	.052	.538	.041	.505	.021	.398	.017	.421	.045
Cohort 1991-95	.543	.024	.252	.007	.722	.075	.541	.041	.463	.032	.334	.017	.220	.008	.297	.025
1986 Census	2.23	.406	3.12	.597	1.69	.381	2.54	.579	2.19	.484	2.55	.548	3.25	.770	2.72	.688
1996 Census	8.57	1.37	15.0	2.41	10.9	2.17	11.3	2.27	7.77	1.50	17.7	3.29	11.4	2.29	15.2	3.33
Y in NZ	1.03	.004	1.03	.003	.999	.006	1.04	.006	1.05	.007	1.02	.004	1.07	.006	1.06	.013
" * School	1.01	.003	1.01	.003	1.01	.007	1.01	.006	1.00	.006	1.00	.006	1.00	.006	.979	.011
" * Vocational	1.01	.004	1.00	.004	1.01	.007	1.02	.007	1.00	.006	.988	.007	.992	.007	.961	.010
" * University	1.02	.005	1.02	.006	1.04	.013	1.00	.010	1.02	.008	.989	.019	1.00	.007	.983	.014
Y in NZ sq/100	.940	.006	.931	.005	.968	.010	.937	.009	.908	.011	.940	.008	.884	.009	.877	.020
" * School	.966	.008	.964	.008	.984	.015	.959	.012	.997	.014	.977	.014	.998	.015	1.03	.028
" * Vocational	.981	.008	.995	.009	.997	.016	.964	.013	1.00	.015	1.01	.017	1.02	.017	1.08	.029
" * University	.973	.012	.961	.014	.946	.027	1.00	.024	.986	.020	1.03	.044	.990	.019	1.03	.039
Age	1.43	.009	1.41	.009	1.46	.011	1.45	.012	1.43	.011	1.41	.011	1.44	.012	1.46	.013
" * 1986	.914	.007	.909	.008	.927	.009	.899	.009	.919	.009	.915	.009	.900	.010	.902	.010
" * 1996	.938	.007	.901	.007	.931	.009	.919	.009	.947	.009	.907	.008	.908	.009	.907	.010
Age squared/100	.612	.004	.625	.005	.598	.005	.600	.006	.615	.006	.625	.006	.608	.006	.595	.006
" * 1986	1.13	.011	1.13	.012	1.11	.014	1.16	.015	1.12	.014	1.13	.014	1.15	.016	1.16	.017
" * 1996	1.07	.010	1.12	.011	1.08	.013	1.11	.014	1.06	.013	1.11	.013	1.12	.014	1.13	.016
School qual.	1.29	.043	1.22	.040	1.33	.045	1.27	.043	1.26	.043	1.26	.042	1.26	.043	1.28	.044
" * 1986	.985	.043	1.01	.043	.95	.043	.995	.045	.996	.045	1.00	.044	.960	.044	.974	.045
" * 1996	1.36	.058	1.53	.065	1.28	.057	1.33	.059	1.38	.061	1.36	.060	1.45	.064	1.34	.061
" * Immig.	.778	.044	.830	.046	.711	.072	.873	.073	1.00	.086	.962	.078	.771	.065	1.18	.164
" * Immig. * 1986	.962	.046	.983	.054	1.13	.077	.987	.063	.848	.051	1.12	.083	.937	.078	.972	.102
" * Immig. * 1996	.958	.051	.792	.044	1.05	.083	1.00	.075	.757	.054	1.10	.081	.704	.057	1.12	.134
Vocational qual.	1.72	.063	1.62	.059	1.76	.066	1.72	.065	1.69	.063	1.68	.062	1.69	.064	1.73	.066
" * 1986	.999	.047	1.04	.049	.964	.047	.995	.049	1.01	.050	1.02	.049	.975	.048	.979	.049
" * 1996	1.38	.068	1.52	.074	1.30	.066	1.33	.067	1.37	.069	1.38	.069	1.38	.070	1.33	.068
" * Immig.	.718	.044	.909	.061	.638	.066	.706	.066	.839	.078	1.25	.134	.755	.077	1.51	.218
" * Immig. * 1986	.955	.053	.964	.066	1.13	.086	1.00	.076	.893	.064	.978	.096	.903	.090	.912	.104
" * Immig. * 1996	.953	.058	.980	.067	1.09	.095	1.06	.093	.846	.069	1.07	.104	.968	.096	.955	.122
University qual.	1.80	.182	1.71	.172	1.84	.188	1.77	.181	1.77	.180	1.77	.179	1.76	.179	1.78	.183
" * 1986	1.02	.128	1.06	.132	.982	.124	1.03	.131	1.03	.130	1.04	.130	1.00	.126	1.01	.129
" * 1996	1.71	.208	1.88	.227	1.60	.196	1.69	.207	1.70	.208	1.73	.209	1.73	.211	1.70	.209
" * Immig.	.770	.094	.904	.120	.568	.111	1.21	.211	.939	.136	1.25	.425	.820	.121	1.24	.264
" * Immig. * 1986	.974	.136	.730	.113	1.09	.213	.844	.156	.919	.142	.804	.272	.786	.131	.905	.196
" * Immig. * 1996	.845	.115	.789	.115	1.00	.191	.708	.128	.716	.109	.911	.284	.860	.136	1.06	.223
Partner	1.27	.078	1.60	.099	1.32	.101	1.43	.114	1.42	.105	1.68	.119	1.54	.127	1.55	.139
" * 1986	1.39	.102	1.33	.098	1.45	.133	1.41	.133	1.38	.122	1.36	.114	1.36	.134	1.33	.141
" * 1996	.711	.049	.807	.053	.733	.064	.724	.065	.675	.056	.722	.056	.815	.072	.666	.066
Sole Parent	.223	.016	.267	.018	.212	.018	.200	.018	.241	.020	.255	.019	.237	.022	.220	.022
" * 1986	4.10	.364	3.14	.269	4.30	.468	4.53	.501	3.90	.415	3.30	.314	3.95	.459	4.14	.510

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" * 1996           .703 .057 | .987 .074 | .673 .067 | .761 .077 | .665 .065 | .827
.070 | .966 .098 | .745 .083
Joint Parent       .251 .006 | .313 .008 | .249 .007 | .223 .007 | .270 .008 | .295
.009 | .259 .008 | .229 .008
" * 1986           2.77 .085 | 2.26 .075 | 2.78 .112 | 2.99 .122 | 2.56 .097 | 2.32
.089 | 2.61 .110 | 2.88 .133
" * 1996           1.21 .041 | 1.37 .045 | 1.14 .052 | 1.23 .056 | 1.13 .047 | 1.22
.049 | 1.54 .063 | 1.28 .063
Observations       210395       216766      126563       124643      138899
148693      140922      104893
Log-Likelihood     -123168.58   -130816.08  -72996.71    -72587.17   -81731.42   -
88563.28   -83499.70  -60942.63
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Table B7: Pooled employment logits. Results for women

	ESM		NESM		UK&Ireland		Australia		Europe&NthAm		Pac.Islands		Asia		Other	
	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.	Odds	Std.
Cohort Pre-1960	.202	.043	.152	.026	.197	.072	.400	.143	.074	.025	.453	.095	.047	.015	.047	.025
Cohort 1961-65	.240	.045	.162	.023	.234	.075	.416	.127	.115	.035	.364	.063	.061	.016	.038	.016
Cohort 1966-70	.288	.048	.175	.022	.281	.082	.424	.116	.139	.038	.381	.058	.070	.016	.056	.022
Cohort 1971-75	.349	.050	.183	.019	.331	.082	.467	.109	.204	.049	.330	.042	.109	.019	.079	.026
Cohort 1976-80	.422	.052	.250	.022	.446	.103	.551	.111	.338	.068	.317	.035	.209	.028	.114	.032
Cohort 1981-85	.547	.059	.283	.020	.582	.124	.741	.130	.465	.083	.298	.028	.245	.026	.162	.038
Cohort 1986-90	.634	.066	.367	.022	.624	.150	1.11	.207	.505	.087	.340	.028	.316	.027	.196	.039
Cohort 1991-95	.610	.058	.256	.014	.509	.119	.874	.135	.354	.054	.260	.023	.246	.017	.168	.026
1986 Census	.193	.135	.204	.136	.096	.088	.139	.125	.197	.169	.215	.165	.087	.080	.088	.091
1996 Census	.253	.166	.292	.180	.105	.091	.222	.190	.207	.168	.269	.194	.104	.089	.129	.126
Y in NZ	1.09	.012	1.09	.008	1.09	.022	1.06	.019	1.14	.022	1.04	.010	1.20	.015	1.19	.031
" * School	1.00	.010	1.03	.007	.991	.021	1.01	.016	1.01	.017	.999	.011	1.00	.013	.993	.022
" * Vocational	1.02	.010	1.06	.008	.990	.021	1.01	.018	1.03	.018	.999	.013	1.04	.015	1.02	.023
" * University	1.05	.013	1.19	.012	1.01	.031	1.04	.024	1.07	.020	1.05	.035	1.09	.015	1.15	.033
Y in NZ sq/100	.909	.018	.909	.014	.885	.032	.925	.029	.846	.031	.945	.021	.782	.022	.785	.042
" * School	.978	.024	.937	.018	1.01	.049	.969	.038	.972	.040	.980	.029	1.01	.037	.972	.058
" * Vocational	.959	.024	.883	.018	1.01	.049	.971	.040	.936	.040	.992	.034	.932	.035	.926	.053
" * University	.892	.027	.694	.018	.962	.071	.912	.050	.849	.040	.897	.075	.849	.033	.704	.051
Age	1.12	.037	1.13	.035	1.09	.047	1.12	.049	1.14	.046	1.13	.042	1.08	.048	1.09	.055
" * 1986	.999	.035	1.00	.034	1.03	.048	1.01	.047	.982	.043	1.01	.040	1.02	.049	1.03	.056
" * 1996	1.01	.034	1.00	.032	1.06	.048	1.02	.046	1.01	.042	1.04	.039	1.05	.047	1.06	.055
Age squared/100	.902	.038	.871	.035	.940	.053	.907	.052	.882	.046	.891	.043	.922	.052	.931	.062
" * 1986	.996	.046	1.00	.044	.966	.058	.987	.061	1.02	.058	.985	.052	.982	.060	.959	.068
" * 1996	.965	.043	.978	.040	.907	.053	.951	.057	.965	.052	.929	.046	.927	.054	.901	.061
School qual.	1.54	.287	1.42	.256	1.50	.293	1.68	.328	1.51	.293	1.83	.336	1.35	.262	1.52	.304
" * 1986	.866	.169	.762	.143	.949	.195	.835	.172	.881	.181	.701	.134	.866	.177	.897	.190
" * 1996	1.49	.286	1.66	.308	1.56	.314	1.40	.283	1.52	.305	1.23	.234	1.74	.347	1.51	.313
" * Immig.	.759	.172	.758	.169	1.07	.390	.630	.191	.601	.178	.652	.177	1.00	.330	2.17	1.01
" * Immig. * 1986	1.18	.249	1.16	.261	1.08	.321	1.10	.294	1.17	.294	1.50	.398	1.20	.399	.788	.342
" * Immig. * 1996	.847	.184	.573	.127	.678	.214	.896	.256	.714	.191	1.10	.294	.359	.117	.477	.214
Vocational qual.	1.82	.406	1.78	.387	1.80	.410	1.97	.449	1.80	.409	2.18	.480	1.72	.390	1.81	.421
" * 1986	.873	.202	.727	.164	.919	.219	.828	.198	.878	.209	.686	.157	.813	.193	.869	.212
" * 1996	1.34	.309	1.52	.341	1.33	.315	1.24	.292	1.36	.319	1.13	.257	1.51	.354	1.36	.325
" * Immig.	.489	.129	.602	.175	.634	.238	.388	.132	.425	.145	.775	.301	.703	.294	2.51	1.39
" * Immig. * 1986	1.52	.385	1.38	.408	1.70	.538	1.83	.571	1.39	.427	1.48	.572	1.37	.592	.581	.309
" * Immig. * 1996	1.11	.289	.559	.163	1.33	.450	1.55	.512	.779	.250	.935	.357	.406	.169	.331	.180
University qual.	.760	.281	.701	.257	.751	.281	.833	.313	.738	.276	.898	.331	.690	.258	.754	.285
" * 1986	2.95	1.23	2.60	1.07	3.12	1.31	2.75	1.16	3.02	1.27	2.36	.978	2.85	1.20	2.93	1.24
" * 1996	4.79	1.86	5.75	2.21	4.67	1.83	4.27	1.68	4.88	1.91	4.02	1.56	5.62	2.20	4.76	1.89
" * Immig.	.679	.279	.368	.155	1.85	1.26	.864	.473	.509	.229	.531	.456	.643	.289	.809	.486
" * Immig. * 1986	.817	.365	.940	.442	.530	.371	.917	.548	.932	.437	1.49	1.37	.717	.352	.755	.476
" * Immig. * 1996	.474	.199	.382	.165	.331	.221	.417	.232	.453	.204	1.13	.955	.236	.108	.416	.250
Partner	2.94	.735	3.61	.744	3.17	.987	3.02	.974	2.58	.807	3.55	.880	3.14	.915	3.45	1.22
" * 1986	1.49	.390	1.19	.262	1.41	.459	1.72	.577	1.80	.589	1.17	.307	1.63	.504	1.49	.553
" * 1996	.777	.197	.541	.113	.782	.248	.767	.251	.978	.311	.516	.130	.739	.218	.636	.229
Sole Parent	.841	.234	1.10	.259	.964	.338	.880	.313	.757	.263	1.20	.331	.902	.306	.937	.366
" * 1986	1.11	.329	.654	.165	.897	.331	1.15	.431	1.21	.445	.616	.180	.998	.360	.997	.410

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" * 1996           .314 .089 | .243 .058 | .250 .089 | .268 .097 | .341 .121 | .200
.056 | .312 .107 | .233 .092
Joint Parent       1.67 .193 | 1.38 .151 | 1.59 .248 | 1.94 .307 | 1.44 .206 | 1.49
.192 | 1.67 .264 | 1.67 .304
" * 1986           .385 .048 | .471 .056 | .394 .065 | .325 .055 | .439 .067 | .443
.061 | .376 .064 | .352 .068
" * 1996           .331 .040 | .356 .040 | .338 .056 | .275 .046 | .334 .050 | .340
.046 | .306 .049 | .270 .051
Observations        132580       130031      80259        78528       85866      91870
84369      66255
Log-Likelihood     -28471.52    -39352.49   -16516.45    -17053.64   -19565.57   -
25791.37   -22956.99  -15664.24
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Table B8. The effect of Age-at-Arrival.

	Male Migrants						Female Migrants			
	All		ESM		NESM		All			
	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.	Coef.	StdErr.
Cohort Pre-1960	.0525	.0247	-.1959	.0283	.3432	.0304	.0470	.0327	.0456	.0381
Cohort 1961-65	.1075	.0240	-.1348	.0274	.3903	.0295	.0841	.0317	.0943	.0370
Cohort 1966-70	.1108	.0235	-.1235	.0268	.3978	.0289	.0871	.0311	.0865	.0361
Cohort 1971-75	.1330	.0229	-.1001	.0260	.4193	.0280	.1039	.0303	.1092	.0351
Cohort 1976-80	.0891	.0225	-.1330	.0254	.3712	.0275	.0314	.0298	.0399	.0344
Cohort 1981-85	.1241	.0225	-.0912	.0255	.4042	.0277	.0379	.0298	.0509	.0344
Cohort 1986-90	.0724	.0228	-.0356	.0266	.3454	.0279	.0315	.0302	.0964	.0356
Cohort 1991-95	.0446	.0229	.0325	.0259	.1674	.0283	-.1013	.0302	.0552	.0349
1986 Census	.3894	.0030	.4011	.0034	.3865	.0037	.3974	.0042	.4026	.0050
1996 Census	.7458	.0042	.7656	.0044	.7463	.0046	.9276	.0058	.9390	.0062
School qual.	.1494	.0030	.1386	.0036	.1389	.0037	.1541	.0039	.1618	.0049
Vocational qual.	.2646	.0029	.2223	.0034	.2553	.0037	.2831	.0041	.2825	.0051
University qual.	.5764	.0038	.5290	.0047	.5746	.0049	.5059	.0056	.4902	.0070
Hours of Work	.0114	.0000	.0111	.0001	.0110	.0001	.0244	.0001	.0261	.0001
Age	.1242	.0010	.1261	.0009	.1249	.0010	.0655	.0013	.0658	.0013
Age squared	-.1371	.0013	-.1395	.0012	-.1380	.0013	-.0721	.0018	-.0723	.0018
Age at arrival	-.0211	.0012	-.0068	.0013	-.0379	.0015	-.0103	.0017	-.0116	.0019
Years in NZ	-.0053	.0013	.0072	.0015	-.0193	.0016	-.0056	.0018	-.0066	.0021
Age at a.* YiNZ	.0004	.0000	.0000	.0000	.0007	.0000	.0002	.0000	.0003	.0000
Age at a. sq.	.0285	.0017	.0135	.0019	.0448	.0021	.0093	.0024	.0120	.0028
Years in NZ sq.	.0112	.0018	-.0023	.0021	.0258	.0023	.0127	.0025	.0149	.0030
Constant	6.2152	.0176	6.2058	.0173	6.2306	.0177	6.4573	.0238	6.3840	.0242
Observations	328448		222301		204236		230809		158482	
R-squared	0.4146		0.4448		0.4137		0.4101		0.4337	
	6.4955	.0237							0.3996	