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Labour Market Integration and Retention of Skilled Migrants in New Zealand

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Executive summary

Skilled migrants in New Zealand

Skilled migrants are becoming an increasingly important element in global migration flows, especially to more developed countries. New Zealand is notable within the OECD for having high inflows and outflows of people. New Zealand's skilled migration policies aim to attract and retain highly skilled migrants to fill gaps in the labour market by providing a pathway to permanent residence. The Skilled Migrant Category (SMC) policy, which was introduced in December 2003, is New Zealand's main permanent skilled labour migration policy, contributing more than half of all residence approvals. The SMC policy not only attracts skilled people directly from overseas, but also complements temporary visa policies by allowing students and workers to settle and contribute in the longer term or permanently.

The successful settlement of these skilled migrants in New Zealand depends largely on how well they integrate economically, and this can be measured through their employment in the labour market as well as their income and earnings. In order to maximise the benefits from migration, it is important for New Zealand to retain these skilled migrants over a longer period of time or permanently.

Skilled migrant study groups

This study is a follow-up of earlier research, based on a sample from a population of skilled migrants, so the initial study group for analysis is the population in the Longitudinal Immigration Survey: New Zealand (LisNZ). This is the population of skilled migrants who applied for residence through the SMC policy and took up residence in New Zealand between November 2004 and October 2005. Labour market integration and retention of this LisNZ population, three years since taking up residence in New Zealand, are analysed using information from Statistics New Zealand's Integrated Data Infrastructure.

The second study group consists of skilled migrants who took up residence in tax years 2005/06 to 2008/09. Their labour market integration and retention, three years since taking up residence in New Zealand, are analysed to identify any linkages to the changes in the SMC policy settings across time as well as understanding the impact of the recession on the entry cohorts of skilled migrants leading up to the global economic recession.

To understand the short- to medium-term labour market integration and retention of skilled migrants in New Zealand, the third study group follows the 2005/06 tax year cohort over the first six years of residence in New Zealand. For this group, income has been adjusted to the September 2005 quarter using the Consumer Price Index to account for inflation.

Labour market integration and retention of skilled migrants in the LisNZ population

Current employment or job offer supports labour market integration and retention

Migrants with skilled employment at the time of residence approval have higher income three years after taking up residence in New Zealand than migrants without skilled employment. In terms of employment, migrants with a job offer at the time of residence approval are more likely to be

employed three years after taking up residence in New Zealand than migrants without a job offer. In addition, having current skilled employment for less than 12 months or a job offer at the time of residence approval is positively associated with the retention of skilled migrants in New Zealand.

Labour market integration and retention varies by region of origin

Skilled migrants from Asia earn on average 21 percent less and are less likely to be employed, three years after taking up residence in New Zealand, than skilled migrants from Europe.

Skilled migrants from South Africa earn more (7 percent) than skilled migrants from Europe. Furthermore, they are more likely to be employed and remain in New Zealand three years after taking up residence in New Zealand than skilled migrants from Europe.

While skilled migrants from North America appear to earn more than skilled migrants from Europe, the difference is not significant when other factors are controlled for in the analysis. On the other hand, skilled migrants from North America are less likely to be employed and remain in New Zealand three years after taking up residence in New Zealand than skilled migrants from Europe.

Positive returns to education but former students are less well settled

Returns to education are positive for the LisNZ population three years since taking up residence in New Zealand. Skilled migrants with a post-school qualification at the time of residence approval have higher incomes (17 percent higher income for skilled migrants with a bachelor's degree and 38 percent higher income for skilled migrants with a master's or higher degree) compared with skilled migrants with no post-school qualification. In terms of retention, skilled migrants with a master's or higher degree at the time of residence approval are less likely to remain in New Zealand three years after taking up residence compared with skilled migrants with no post-school qualifications. This is not surprising given the international competition for highly skilled migrants in times of global economic growth.

Skilled migrants who initially came to study in New Zealand have much lower incomes, three years after taking up residence in New Zealand, compared with the incomes of migrants who were approved residence offshore. In addition, former international students who transition directly into residence are less likely to be employed three years after taking up residence than skilled migrants approved offshore.

Family support is associated with the retention of skilled migrants

Having close family support in New Zealand does not have a positive impact on income or employment prospects but is positively associated with the retention of skilled migrants three years after taking up residence.

Labour market integration and retention for tax year cohorts 2005/06 to 2008/09

Economic conditions affect the impact of current employment or job offer on labour market integration and retention of skilled migrants

Having skilled employment or a job offer at the time of residence approval is positively associated with income three years after migrants took up residence in New Zealand. The effect of a job offer was much stronger in the period leading up to and during the global economic recession, particularly for skilled migrants who took up residence in the tax years 2007/08 and 2008/09. In addition, having skilled employment or a job offer at residence approval increases the likelihood (by 4 to 8 percent) of skilled migrants participating in the labour market three years after taking up residence in New Zealand.

During the global economic recession and the subsequent period of recovery, migrants with skilled employment at the time of residence approval were more likely to remain in New Zealand. In addition, the magnitude of this positive effect increased after the onset of the global economic recession in October 2008. This can be seen by the larger positive effects on retention for skilled migrants in the 2006/07 tax year cohort and thereafter.

Differences in labour market integration and retention by region of origin continue across time

Skilled migrants from Asia and the Pacific earn less than skilled migrants from other regions three years after taking up residence in New Zealand. The magnitude of this effect ranges between 18 and 27 percent less earnings for skilled migrants from Asia compared to skilled migrants from Europe, once we control for other characteristics. Incomes of skilled migrants from the Pacific appear to be lower than skilled migrants from Europe, although the difference is not significant for the 2005/06 and 2006/07 tax year cohorts. For the tax year cohorts leading into and during the global economic recession, the negative effect of income on Pacific skilled migrants becomes significant and increased in magnitude to 14 percent for the 2007/08 cohort and 17 percent for the 2008/09 cohort. This is consistent with a bigger adverse impact of tough economic conditions on people who work in lower-skilled jobs.

Skilled migrants from Asia and North America are less likely to participate in the labour market than skilled migrants from Europe, three years after taking up residence in New Zealand. However, controlling for other factors the differences are not significant for skilled migrants from North America who took up residence in tax years 2007/08 and 2008/09. On the other hand, skilled migrants from South Africa appear to be more likely to participate in the labour market than skilled migrants from Europe. But, when we control for other factors in the regression model, this advantage is only significant for the 2005/06 tax year cohort.

Skilled migrants from South Africa and the Pacific are more likely to remain in New Zealand three years after taking up residence than skilled migrants from Europe. On the other hand, skilled migrants from North America are more likely to leave New Zealand three years after taking up residence than skilled migrants from Europe.

Positive returns to education but former students are less well settled across time

The increase in income, three years after taking up residence in New Zealand, associated with qualifications ranges from 14 percent for a bachelor's degree to 41 percent for a master's or higher degree compared with not having any post-school qualification. In addition, obtaining the post-school qualification in New Zealand contributes to higher income for skilled migrants who took up residence in New Zealand before the global economic recession. This is particularly important as more and more international students make the transition into permanent residence through SMC.

Skilled migrants who came through the student pathway have lower income (between 17 and 38 percent) compared to skilled migrants who were approved offshore. But the incomes of students who transitioned directly into permanent residence were at least one-third lower than incomes of skilled migrants who were approved offshore.

Former students are less likely to participate in the labour market after three years since taking up residence than skilled migrants approved offshore. In particular, students who transitioned directly into residence are between 11 and 21 percent less likely to participate in the labour market compared to skilled migrants approved offshore. Students who had a work visa prior to gaining residence in New Zealand are at most 8 percent less likely to participate in the labour market compared to skilled migrants approved offshore.

Labour market integration and retention for the 2005/06 tax year cohort over time

Importance of current employment or job offer on labour market integration and retention lessens over time

The positive effect on the income of migrants who have skilled employment or a job offer at the time of residence approval lessens over the time of settlement in New Zealand. By the sixth year, only the effect of having employment for less than 12 months at the time of residence approval is still significant.

The importance of having skilled employment at the time of residence approval is quite strong in tough economic conditions, even for migrants who have settled in New Zealand for four years. Having skilled employment or a job offer at the time of residence approval increases the likelihood of skilled migrants participating in the labour market. However, the positive effect is reduced by half over the first six years of residence in New Zealand. In addition, skilled migrants who were employed at the time of residence approval were 7 percent more likely to participate in the labour market at the peak of the global economic recession – about twice the effect compared to years 5 and 6 of residence in New Zealand.

Skilled migrants with a job offer or current employment at the time of residence approval are 6 percent more likely to remain in New Zealand than skilled migrants who did not have skilled employment or a job offer in the first year of residence in New Zealand. After the first year, the effect is significant but small (3 percent).

Labour market integration and retention varies by region of origin over time

The income of skilled migrants from South Africa is 9 percent higher than the income of skilled migrants from Europe even after six years of residence in New Zealand. On the other hand, skilled migrants from Asia earn lower incomes than skilled migrants from Europe. The income disadvantage of skilled migrants from Asia is maintained over the first six years of settlement in New Zealand.

In terms of employment, skilled migrants from Asia and North America are less likely to participate in the labour market than skilled migrants from Europe in the first six years of residence in New Zealand. The difference is between 5 and 9 percent in the first six years of residence in New Zealand. Skilled migrants from South Africa are more likely to participate in the labour market than skilled migrants from Europe in the first three years of residence but this advantage is not significant thereafter. However, the positive effect on the labour market participation of skilled migrants from the Pacific diminishes with time in New Zealand.

Skilled migrants from South Africa and the Pacific are more likely to remain in New Zealand than skilled migrants from Europe. For skilled migrants from the Pacific the positive effect on retention increases over time from 5 percent in the first year to 14 percent in the sixth year of residence in New Zealand. On the other hand, skilled migrants from North America are more likely to leave New Zealand than skilled migrants from Europe. The difference was much stronger during the global economic recession and subsequent period of recovery.

Positive returns to education continue over time

The positive effect of qualifications on income continues to hold over the first six years and provides a good return on the cost invested in getting a qualification. By the sixth year, the incomes of skilled migrants with a bachelor's degree are 19 percent higher than those with no post-school qualification. The income advantage for skilled migrants with a master's or higher degree is 38 percent over skilled migrants with no post-school qualification, twice the income advantage of a bachelor's degree holder. The income of skilled migrants with a New Zealand qualification is 13 percent higher than the income of skilled migrants with no post-school qualification.

Skilled migrants with New Zealand post-graduate qualifications are more likely to leave New Zealand than skilled migrants with no post-school qualifications after three years of residence in New Zealand. But former international students are more likely to remain in New Zealand in the first two years of settlement.

Labour market integration and retention of former students appear to improve over time

While the incomes of former international students were much lower than skilled migrants approved offshore, they appear to be closing the gap in the first four years of residence in New Zealand. However, the gap increased again in years 5 and 6 of residence in New Zealand.

While former students are less likely to participate in the labour market than skilled migrants approved offshore, this disadvantage is only short-term. After five years of residence in New Zealand the chances of former students participating in the labour market are comparable to skilled migrants approved offshore. Perhaps this improvement is due in part to the accumulation of work experience in the workplace.

Implications for policy and settlement

The results in this study are consistent with previous research in New Zealand and highlight the fact that skilled migrants generally settle well into the New Zealand labour market. Nevertheless, some groups of skilled migrants settle better than others and policy settings could potentially better target these groups. For the groups of skilled migrants experiencing lower levels of labour market integration (for example, former international students) targeted settlement support services can facilitate their pathway to skilled employment. Immigration New Zealand is currently working to provide additional support for these groups of skilled migrants to improve their labour market integration and retention prospects.

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1 Introduction

Skilled migrants are becoming an increasingly important element in global migration flows, especially to more developed countries. For countries in the OECD, skilled migrants make up nearly 29% of all migrants (Nathan, 2014).

New Zealand is notable within the OECD for having high inflows and outflows of people. For the past 40 years, New Zealand has been reliant on migrants to offset New Zealanders leaving, particularly to Australia. The 2013 Census found that one in four people in New Zealand were born overseas (Statistics New Zealand, 2014).

New Zealand's skilled migration policies aim to attract and retain highly skilled migrants by providing a pathway to permanent residence. The Skilled Migrant Category (SMC) policy, which was introduced in December 2003, is New Zealand's main permanent skilled labour migration policy, contributing more than half of all residence approvals. The SMC policy not only attracts skilled people directly from overseas, but also complements temporary visa policies by allowing some students and workers to settle and contribute in the longer term or permanently.[1]

While New Zealand continues to face stiff competition for skilled migrants, particularly from Australia, it is important that its immigration policies as well as its attraction and retention strategies work together to identify and facilitate entry for skilled migrants that can make the biggest contribution to the economy. The successful settlement of these skilled migrants in New Zealand depends largely on how well they integrate economically, which can be measured through their employment in the labour market as well as their income and earnings. In order to maximise the benefits from migration, it is important for New Zealand to retain these skilled migrants over a longer period of time or permanently.

Grangier, Hodgson and McLeod (2012) examined how well the SMC points system predicts the wages of skilled migrants using data from the Longitudinal Immigration Survey: New Zealand (LisNZ) up to three years after taking up residence in New Zealand. Their report made a number of practical suggestions that might improve the SMC points system to more effectively target migrants who were likely to earn higher wages in the medium term.

More recent research used the availability of an integrated dataset, linking migration data with other datasets through Statistics New Zealand's Integrated Data Infrastructure (IDI), to measure the contribution of recent migrants to the New Zealand labour market and assess the retention of skilled migrants in New Zealand. Merwood (2013) analysed the contribution of recent migrants to the New Zealand labour market by looking at where migrants work and in what industries, the proportion working or receiving income support, and their earnings and sources of income. The recent migrants' contribution to the labour market is then compared with that of the total population of wage and salary earners in New Zealand. This study found that skilled migrants showed the most resilience through the 2008/09 global economic recession, with the proportion earning wages and salaries increasing between 2007 and 2011. Peach (2013), on the other hand, used a survival analysis approach to identify the type of skilled migrants who are more or less likely to leave New Zealand. The study found that one quarter of skilled migrants leave within five years of

[1] The primary temporary visa policies that lead to residence under the SMC are the Essential Skills policy (the main labour market tested temporary work policy); Study to Work policies for students who have studied in New Zealand; SMC Job Search visa (a job search policy for some SMC applicants without job offers); and Silver Fern visa (a job search policy for skilled foreign graduates).

taking up residence in New Zealand. Furthermore, the risk that a skilled migrant will leave is greatest at two years after taking up residence in New Zealand.

This report uses Statistics New Zealand's IDI to extend the work of Grangier et al. (2012) and examine the short-term and longer-term labour market integration and retention of skilled migrants in New Zealand. Availability of the IDI enables all skilled migrants in the LisNZ population to be used in the analysis. With the onset of the global economic recession in October 2008, analysis of multiple annual cohorts of skilled migrants gives some understanding of the impact of the recession not only on income but also on other settlement outcomes such as employment and retention. Longer-term labour market integration and retention are also studied by following a cohort of skilled migrants over the first six years of residence in New Zealand.

This report focuses on the labour market integration and retention of skilled migrants in New Zealand and is organised as follows. Chapter 2 gives some background information on the SMC and the selection process together with an outline of previous research on skilled migration. A description of the skilled migrant study groups, the measures and the analysis used in this report are outlined in Chapter 3. Chapter 4 provides the labour market integration and retention of skilled migrants who formed the survey population for the LisNZ study three years after taking up residence in New Zealand. Chapter 5 extends the analysis of labour market outcomes and retention of skilled migrants three years after taking up residence in New Zealand to include more recent cohorts of skilled migrants who took up residence in the 2005/06[2] to 2008/09 tax years. In order to examine the labour market integration and retention of skilled migrants over time since taking up residence in New Zealand, Chapter 6 provides this analysis by tracking the labour market integration and retention of the 2005/06 tax year cohort. Conclusions are outlined in Chapter 7.

[2] The 2005/06 tax year runs from April 2005 to March 2006.

2 Background

The SMC policy is New Zealand's main permanent skilled labour migration policy with the aim of bringing skilled people into the country.

2.1 Policy settings and migrant selection process

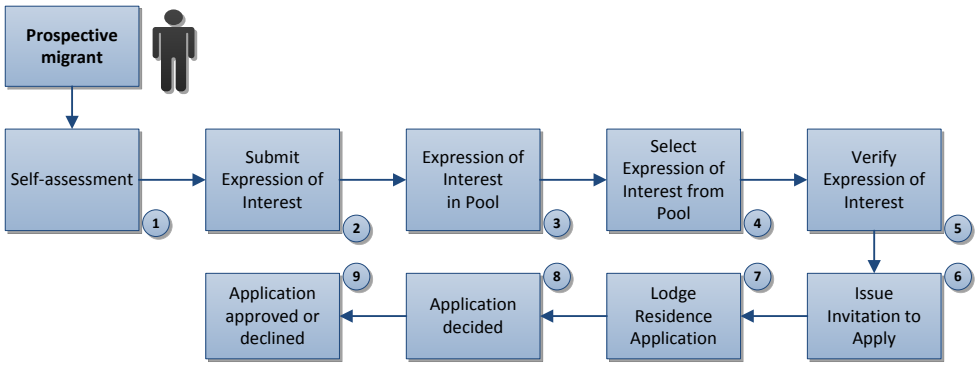
The SMC is a points-based system that rewards transferrable skills and employability, including recognised qualifications. Experience in comparable labour markets is also awarded points. The match between skills and New Zealand's needs is stressed, through points being awarded for having a job or job offer, and bonus points if the job offer is in identified future growth areas and/or areas of skills shortages.

The objective of the SMC policy is to grant a residence visa to people who demonstrate that they:

- have skills to fill identified needs and opportunities in New Zealand
- can transfer those skills to New Zealand and link with local needs and opportunities
- can demonstrate an ability to contribute to New Zealand economically and socially
- can demonstrate an ability to successfully settle in New Zealand.

The SMC is a two-stage application process, as shown in Figure 2.1. Firstly, an Expression of Interest (EOI) is completed by the prospective migrant. If selected, the applicant is then invited to submit a full residence application to Immigration New Zealand. The SMC recognises human capital by allowing open initial application through EOIs, but only approves those with strong employment prospects. In this context, the points that prospective migrants claimed in their EOIs have to be verified and migrants may choose not to claim points for certain aspects of the EOI (such as qualifications or having family in New Zealand) if they already have enough points to progress to the next stage of the application process.

Figure 2.1 The Skilled Migrant Category application process



Source: Ministry of Business, Innovation and Employment.

While applicants may have successfully qualified for enough points to be invited to apply for residence, to be ultimately successful they must demonstrate their ability to successfully settle and contribute to New Zealand. This is automatically met by having a skilled job offer in New Zealand, or having studied in New Zealand for at least two years and having been awarded a master's or higher degree. Applicants who do not

clearly meet this requirement are interviewed to determine whether there are other factors that ensure they can successfully settle and contribute, such as skilled employment prospects, preparedness for settlement, and any linkages and support in New Zealand.

2.2 Previous research

Attracting highly skilled migrants is a key policy objective for migrant-receiving countries. Traditionally, some countries – including New Zealand and the United Kingdom – admit migrants on the basis of a job offer (employer or shortage approach) while others, such as Australia and Canada, use the 'human capital' approach, which is based on the skills and attributes of migrants. In recent years most of these countries have adopted a 'hybrid' or mixed model containing both human capital and employer-led aspects in the selection of skilled migrants (Papademetriou, Somerville & Tanaka, 2008). For example, Australia has placed more priority on their employer-sponsored visa categories and Canada has introduced more points for job offers in Canada.

As the competition for skills grows and barriers to mobility are reduced, skilled migrants are able to choose between many alternative destinations. Aydemir and Robinson (2008) show that a large fraction of male migrants who are working age, especially among skilled workers and entrepreneurs, are highly internationally mobile and respond to declining labour market prospects in the host country by returning to their home country or migrating onward to a third country.

2.2.1 International research on skilled migration

Australia and Canada have used a government-led selection of migrants through a points system, similar to New Zealand's points system, which admits migrants for temporary or permanent residence on the basis of how many points that a migrant scores on a test measuring such characteristics as age, education, skills, work experience and language ability, among others.

Canadian research on the relative labour market performance of migrants found that skilled migrants do not achieve better labour market outcomes than less-skilled migrants in the first two years after arrival (Aydemir, 2011). Estimating the number of years it takes for migrant cohorts to achieve earnings parity with an average Canadian-born worker, Li (2003) found that migrants from Europe and the United States took less time to catch up with the average earnings of Canadians than migrants from Asia and Africa.

Australian experience with the points system provides an interesting comparison to the Canadian case. Cobb-Clark (2000) analysed the results of the Longitudinal Survey of Immigrants to Australia and found that skilled migrants have better labour market outcomes (labour force participation and employment rates) than humanitarian and family-based migrants. Comparing the experience of successive migrant cohorts, Cobb-Clark (2006) concludes that improvements in human capital characteristics largely accounted for the improvements in labour market outcomes. Cully, Lim, Smith and Levantis (2011) used the Continuous Survey of Australia's Migrants to investigate labour market absorption, in terms of the probability of being employed full-time in skilled employment and their earnings, for different visa categories of new migrants to Australia. They concluded that employer-sponsored migrants have the best labour market outcomes compared with other visa categories. Their findings provide support for the shift towards embracing demand-driven skilled migration by giving employers the ability to select migrants themselves through job offers.

Hawthorne (2006) compared the labour market outcomes of skills-based migrants in Canada and Australia. While the outcomes were comparable in the mid-1990s, Australian outcomes substantially improved following the adoption of new selection rules in the late 1990s.

2.2.2 New Zealand research on skilled migration

Research in New Zealand has generally focused on the integration of migrants into the New Zealand labour market relative to the New Zealand-born population (see Poot & Cochrane, 2004, for a review of migration research in New Zealand). These studies looked at the initial entry labour market outcomes of migrants, and their paths of convergence, to the labour market outcomes of New Zealand-born workers. A consistent finding is that the initial entry disadvantage and subsequent convergence is more pronounced for migrants born in Asia (Grangier et al., 2012).

Hawthorne (2011) provided a comparison of the skilled migration policies in New Zealand and Australia from 2004/05 to 2008/09, including employment outcomes for principal applicants in the early settlement period. The research concluded that skilled migrants in New Zealand were more likely to be working, and if working, were more likely to be earning more than in Australia. But overall, the two-step migration (study or work to residence) pathway adopted by New Zealand and Australia appears highly effective.

Grangier et al. (2012) used the LisNZ to examine how the employability and capacity-building factors that are used to select skilled migrants through the SMC policy are related to the wages earned by these migrants three years after taking up residence. Their conclusions include positive returns for qualifications and previous work experience on wages; having current employment or a job offer are comparable in terms of wages; English language ability and skill level are not rewarded under SMC; and Asian and Pacific skilled migrants earn less than other skilled migrants.

Peach (2013) used a survival analysis approach to identify the types of skilled migrants who are more or less likely to leave New Zealand. This study found that 25 percent of skilled migrants leave within five years of taking up residence in New Zealand. Furthermore, the risk that a skilled migrant will leave is greatest at two years after taking up residence in New Zealand. The two-year point is the time when migrants can apply for a permanent residence visa allowing them to return to New Zealand at any time if they wish to leave for an extended period of time in another country. The characteristics most associated with the retention of skilled migrants in New Zealand are country of origin, the type of visa a skilled migrant had before gaining residence combined with the time they spent in New Zealand on that visa, and whether they had children.

3 Data

While the 'Points of Difference' report (Grangier et al., 2012) was based on survey data, this report uses an administrative data source and includes all skilled migrants taking up residence in New Zealand in the analysis.

3.1 Integrated Data Infrastructure

Data used in this report was taken from the Integrated Data Infrastructure (IDI), which is a collection of datasets held and managed by Statistics New Zealand. The IDI is a linked longitudinal dataset and it is made up of a series of datasets from different source agencies that have been integrated using deterministic and probabilistic linking. The IDI allows for policy evaluation and research analysis, and the production of statistical outputs on the pathways, transitions and outcomes of people.

Data from the IDI was accessed onsite, through Statistics New Zealand's data laboratory in Wellington, under conditions that meet the privacy, security and confidentiality requirements of the Privacy Act 1993, the Statistics Act 1975 and the Tax Administration Act 1994.

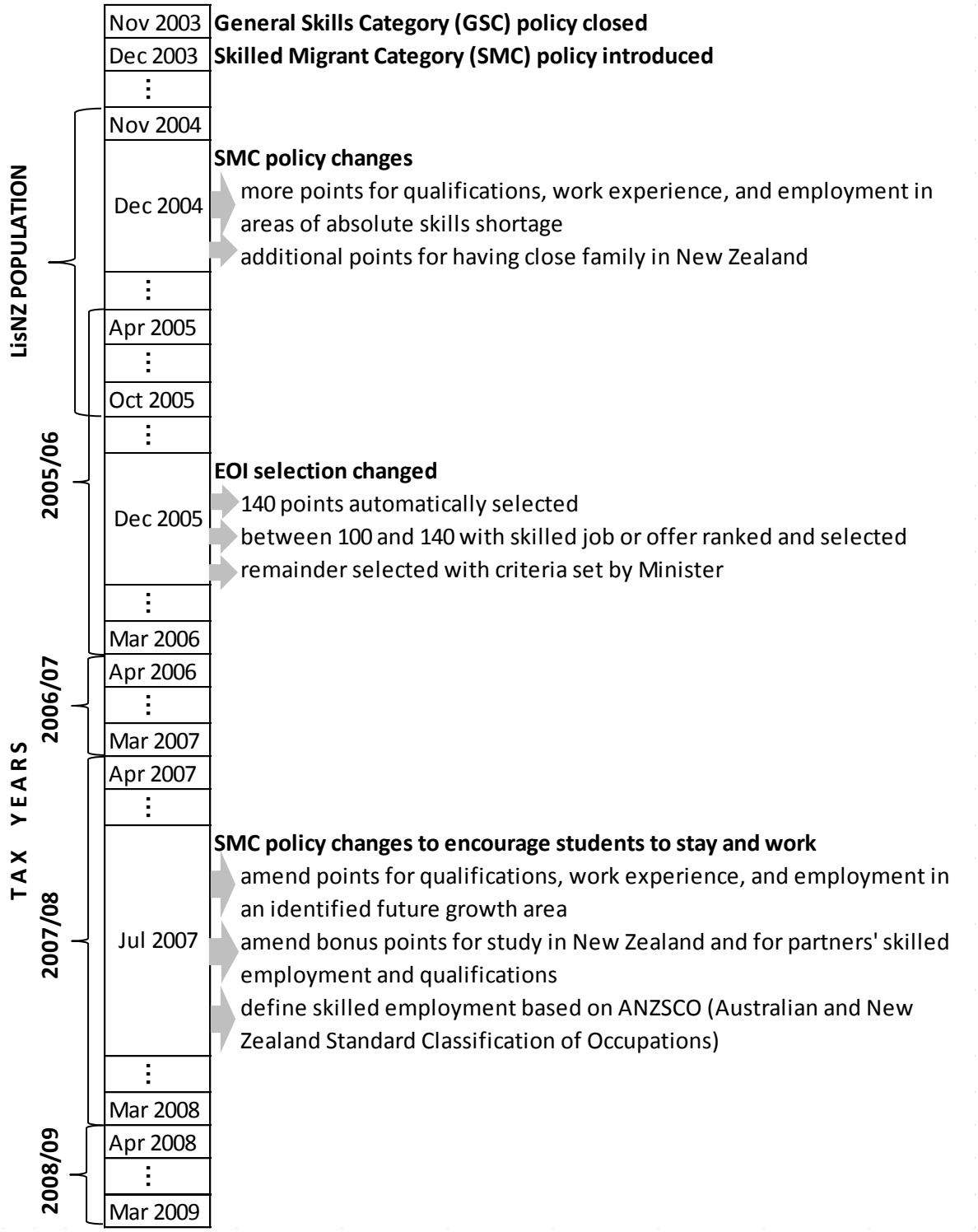
3.2 Skilled migrant study groups

The skilled migrant study groups discussed in this report and changes in the SMC policy settings are outlined in Figure 3.1. Given this study is a follow-up to the 'Points of Difference' report (Grangier et al., 2012), the initial study group for analysis is the LisNZ population. This is the population of skilled migrants who applied for residence through SMC and took up residence in New Zealand between November 2004 and October 2005, and from within which the LisNZ sample was selected.[3] The labour market integration and retention of skilled migrants in the LisNZ population are presented in Chapter 4.

Labour market integration and retention of skilled migrants who took up residence in tax years 2005/06 to 2008/09 are analysed in Chapter 5 to identify any linkages to the changes in the SMC policy settings across time as well as to understand the impact of the recession on the entry cohorts of skilled migrants leading up to the global economic recession. We note that there is an overlap between the LisNZ population and the 2005/06 tax year cohort but the availability of tax year based income information in the IDI leads to analysis by tax years across time. Furthermore, the labour market integration and retention of skilled migrants in the 2005/06 tax year cohort over time are discussed in Chapter 6 of this report. This will give an understanding of the labour market integration and retention of skilled migrants in the first six years of residence in New Zealand.

[3] Results from the analysis based on a sample selected from the LisNZ population are presented in Grangier et al. (2012).

Figure 3.1 Study groups



Source: Ministry of Business, Innovation and Employment.

3.3 Measures used in this report

Linking migrants' border movements in this analysis enables the identification of migrants who have left New Zealand long-term or permanently since taking up residence in New Zealand. Therefore, analysis of data in this report starts from the time migrants take up residence in New Zealand.

3.3.1 Reference date and year

The reference date is the date when the prospective migrant took up residence in New Zealand, namely the arrival date for migrants approved residence offshore and the approval date for migrants approved residence onshore.

The reference year for the LisNZ population is defined by skilled migrants who took up residence between November 2004 and October 2005. The settlement outcomes of this group three years since taking up residence refers to the period from November 2007 to October 2008, the year leading up to the global economic recession.

For the 2005/06 tax year cohort, the reference year is defined by skilled migrants who took up residence between April 2005 and March 2006. The settlement outcomes of this group three years since taking up residence refers to the period from April 2008 to March 2009. Other tax year cohorts and their settlement outcomes three years since taking up residence in New Zealand are defined accordingly.

3.3.2 Income

Income is based on skilled migrants who are employed three years after the reference date. Furthermore, income is reported at gross value (before tax deductions) from monthly wages and salaries, paid parental leave payments, or accident compensation payments as well as self-employment of skilled migrants. Depending on the type of analysis, the gross monthly income is either unadjusted or adjusted to the Consumer Price Index to account for inflation.

Income from wages and salaries (including paid parental leave and accident compensation payments) is available by month in the IDI, while self-employment income is only available by tax year. Therefore, for a migrant who took up residence in June 2005, his/her gross income from wages and salaries (including paid parental leave and accident compensation payments) three years after residence is based on the average monthly income from July 2007 to June 2008. Self-employment income for the same migrant is based on the 2007/08 tax year.

3.3.3 Employment

A skilled migrant is employed if he/she received earnings from wages and salaries, paid parental leave payments or accident compensation payments in the 36th month from the reference date, or received self-employment income three years after the reference date.

The employment rate three years after taking up residence is derived from the proportion of skilled migrants who are employed, for at least one month in the previous 12 months, excluding skilled migrants who have already left New Zealand.

3.3.4 Retention

A skilled migrant is considered to be in New Zealand three years after the reference date if he/she is not out of the country for a period of six months or more.

3.4 Analysis methods used in this report

3.4.1 Ordinary regression

Ordinary regression is used to estimate the impact of certain characteristics on the log monthly income of skilled migrants. Logs are taken to normalise the income distribution, which is otherwise skewed to the

right. The regression coefficients on the logged income scale approximate the percentages of marginal effects on income that are associated with a certain characteristic while holding the influence of other factors constant. It should be noted that negative coefficients underestimate the marginal effect slightly, positive coefficients overestimate, and larger effects underestimate or overestimate to a greater degree than small ones.

3.4.2 Logistic regression and marginal effects

The employment or retention of a skilled migrant is a binary variable with two outcomes. For example, a skilled migrant is either employed or not at any given point in time after taking up residence in New Zealand. Similarly, a skilled migrant can either be in New Zealand or has left New Zealand at a certain point in time after taking up residence in New Zealand.

Logistic regression models are 'non-linear', which means the impact of a particular characteristic on the dependent variable (for example, retention of skilled migrants) differs depending on the values of the other characteristics. These logistic models are generally used to model binary dependent variables. Marginal effects (also known as averaged marginal effects) provide an easier way of interpreting the results of these models. To calculate marginal effects, we calculate the effect of a characteristic in percentage terms, while holding all other characteristics constant at the average for the population of skilled migrants. The marginal effect can be interpreted as the effect on the dependent variable of a particular characteristic for a skilled migrant who is 'average' in their other characteristics.

3.5 Rounding and confidentiality

Information in tables and figures is protected by randomly rounding values and suppressing small counts in accordance with Statistics New Zealand's confidentiality rules. The rounding methods used in this report include random rounding to base 3 and graduated random rounding.

4 Labour market integration and retention of skilled migrants in the LisNZ population

Demographic characteristics of principal skilled migrants in the LisNZ population are presented in Table 4.1 as well as their labour market integration and retention three years after taking up residence in New Zealand. The employment rate of skilled migrants three years after taking up residence in New Zealand excludes skilled migrants who have already left New Zealand. Income is based on the wages and salaries (including paid parental leave and accident compensation payments), and self-employment income of employed skilled migrants three years after taking up residence. The retention rate is measured by the proportion of skilled migrants who remained in New Zealand three years after taking up residence.

4.1 Characteristics

The distribution of the 12,513 principal skilled migrants in the LisNZ population (see Table 4.1) is similar to the results in the 'Points of Difference' report.[4] The SMC policy awards points for principal applicants aged 20–55 years on a decreasing scale and consequently the majority of skilled migrants are in their 20s and 30s. Half of skilled migrants in the LisNZ population came from Europe and one in four from Asia. Three quarters were approved residence onshore and they were mainly former international students[5] and work visa holders taking up permanent residence in New Zealand. Other research shows that one in five international students and one in three work visa holders gained permanent residence in New Zealand within five years of first holding a student or work visa.[6]

Analysis of the main source countries shows that the majority of skilled migrants from the United Kingdom and South Africa (59 percent and 85 percent respectively) were former work visa holders. For the source countries in Asia, 95 percent of skilled migrants from China were former international students; skilled migrants from India were equally split between former international students and work visa holders; and four in five skilled migrants from the Philippines were former work visa holders.

Of the skilled migrants in the LisNZ population who were still living in New Zealand three years after taking up residence, 90 percent were employed. This is similar to the employment rate in the 'Points of Difference' report (94 percent), which is based on survey respondents from a sample of skilled migrants in the LisNZ population. The employment rate of skilled migrants is higher for migrants from South Africa, Europe and the Pacific compared with other regions of origin. Almost all migrants from Asia (97 percent) are approved onshore and most are former international students.

The overall median monthly income of skilled migrants is $4,917, which is approximately $31 an hour based on a 40-hour working week.[7] Skilled migrants from North America have the highest income relative to other skilled migrants. Conversely, skilled migrants from Asia and the Pacific earn much less than skilled migrants from other regions of origin. For skilled migrants from Asia this is partly due to former students gaining residence after studying in New Zealand, while migrants from the Pacific are more likely to be employed in lower-skilled jobs. Information on occupation skill level is available in the IDI from February 2008 onwards. Analysis of the occupation skill level of skilled migrants who took up residence from April 2009 to March 2010 showed that more than half of skilled migrants from the Pacific were employed in jobs with skill levels

[4] See page 9 of Grangier et al. (2012).

[5] Most former international students also had a work visa before getting residence through the SMC policy.

[6] See Ministry of Business, Innovation and Employment (2014).

[7] Grangier et al. (2012) estimated a mean hourly income of $30.

3 or below, while the majority of skilled migrants from other regions of origin worked in jobs with skill levels 1 and 2.

Eighty-four percent of skilled migrants in the LisNZ population remained in New Zealand three years after taking up residence, and this is consistent with the results in Peach (2013). However, the retention rates vary among the source countries of skilled migrants. Almost all skilled migrants from the Pacific (96 percent) have remained in New Zealand three years after taking up residence. Ten percent of skilled migrants from South Africa and about one in five skilled migrants from both Europe and Asia have left New Zealand three years after taking up residence. Skilled migrants from North America have the lowest retention rates compared to other regions of origin, where one in three had already left New Zealand three years after taking up residence.

Table 4.1 Labour market integration and retention of principal skilled migrants in the LisNZ population

Characteristics	Percent (%)	Employment rate 3 years after taking up residence (%)	Median monthly income 3 years after taking up residence ($)	Retention rate 3 years after taking up residence (%)
Age (at taking up residence)				
20–29 years	32	85	4,165	80
30–39 years	42	90	5,226	83
40–44 years	15	91	5,279	83
45–49 years	7	90	5,235	86
50–55 years	4	86	4,960	83
Region				
Europe	50	91	5,298	82
South Africa	10	93	5,370	90
North America	5	83	5,568	65
Asia	28	82	3,759	81
Pacific	3	87	4,569	96
Other	4	90	4,775	87
Approval location				
Offshore	24	91	5,557	78
Onshore	76	87	4,680	83
Previous visa				
No previous student or work visa	3	80	4,858	79
Student visa only	3	72	3,056	74
Work visa only	52	90	5,132	85
Both student and work visa	17	81	3,626	80
Approved offshore	24	91	5,557	78
Time in NZ before residence				
Zero (approved offshore)	23	90	5,536	77
Less than 1 year	23	91	5,393	83
1–2 years	43	87	4,570	83
3–4 years	9	84	3,792	86
5 years or more	2	82	3,764	89

Family composition[(1)]				
Single	38	86	4,331	79
Couple with children	37	91	5,377	85
Couple without children	25	86	4,923	82
Total	**100**	**90**	**4,917**	**84**

Note: (1) Exclude missing values (less than 1 percent) for the family composition variable.

Source: Statistics New Zealand, Integrated Data Infrastructure.

4.2 Predictors of labour market integration and retention

In this section, we use regression models to examine the association between the point factors of skilled migrants and their labour market integration, such as income (including self-employment income) and participation in the labour market (in terms of employment), and retention in New Zealand.

4.2.1 Regression models

As noted in Section 3.4, regression models estimate the average change in a dependent variable (such as income or the retention of skilled migrants) that is associated with a certain characteristic while holding the influence of other factors constant. This allows the identification of the specific effect of each factor on the dependent variable.

Following the 'Points of Difference' report in Grangier et al. (2012), we will first present regression models on log income of skilled migrants using information from the IDI. We then extend the models to address other objectives such as the employment and retention of skilled migrants in New Zealand, which are binary variables with two possible outcomes. For example, a skilled migrant either remains in New Zealand or has left New Zealand three years after taking up residence. Therefore, models for the employment and the retention of skilled migrants are estimated using logistic regression.

4.2.2 Income

Using the analysis in the 'Points of Difference' report, we begin by examining the association between points factors related to labour market outcomes and income, based on the logarithm of monthly income, earned by skilled migrants three years after taking up residence in New Zealand.

In a standard economic model, income is usually related to human capital characteristics, particularly education and work experience. These human capital characteristics contribute to the selection of migrants through the SMC framework. Hence, the following models focus on those characteristics awarded points specifically as indicators of positive labour market outcomes as well as demographic characteristics. Indicators of positive labour market outcomes include:

- current employment or job offer (employability)
- relevant work experience and New Zealand work experience (human capital and employability)
- qualification and New Zealand qualification (human capital)
- close family support, which can provide potential job networks (employability).

Table 4.2 presents the results of the regression model on income and these are consistent with the findings in the 'Points of Difference' report.[8] The model explains 11 percent of the variability in monthly wages and salaries, which is also consistent with other New Zealand studies.[9] The key results on the effect of these characteristics on income three years after taking up residence in New Zealand are summarised below.

- Migrants with skilled employment or a job offer at the time of residence approval have higher income than migrants without skilled employment or a job offer. However, the latter group may have scored highly in other areas of the SMC policy to obtain residence approval.
- Skilled migrants with relevant work experience of at least four years at the time of residence approval have higher income compared to migrants with less than two years of relevant work experience. In addition, skilled migrants with two years relevant work experience in New Zealand have higher income but most of these migrants have been employed for 12 months or more at the time of residence approval. Thus, the advantage of relevant work experience in New Zealand can be accounted for by awarding points to applicants with current employment in New Zealand at the time of applying for residence.
- Returns to education are positive with higher income for skilled migrants with a post-school qualification (17 percent higher income for skilled migrants with a bachelor's degree and 38 percent higher income for skilled migrants with a master's or higher degree) compared with skilled migrants with no post-school qualification.
- Skilled migrants from Asia earn on average 21 percent less than skilled migrants from Europe. On the other hand, skilled migrants from South Africa earn more (7 percent) than skilled migrants from Europe. While skilled migrants from North America appear to earn more than skilled migrants from Europe (see Table 4.1), the difference is not significant when other factors are controlled for in the model.
- Skilled migrants who initially came to study in New Zealand have much lower incomes compared with the incomes of migrants who were approved offshore. However, skilled migrants who transitioned from work have comparable incomes to skilled migrants who were approved offshore.
- Having close family support in New Zealand does not have a positive impact on income but may assist with finding a job or job offer prior to or during the time of applying for residence in New Zealand.

The 'Points of Difference' report recommended that the current SMC points system can be simplified by changing the grouping within categories and joining various categories in order to lower the cost and time of managing applications. The last three columns in Table 4.2 give the results for the simplified SMC points system. We can see that the predictive power of the model is not affected by these changes and the key findings noted above are still valid. Therefore, simplifying the SMC points system will improve the processing times for Immigration New Zealand as well as potential skilled migrants.

Table 4.2 Regression models on income for skilled migrants in the LisNZ population

Characteristics	SMC model			Simplified SMC model		
	Estimate	Standard error	Sig[(1)]	Estimate	Standard error	Sig[(1)]

[8] See Grangier et al. (2012).

[9] See Maré and Stillman (2009).

R^2	*0.111*			*0.108*		
Adjusted R^2	*0.107*			*0.106*		
Number of observations	*7,251*			*7,251*		
SMC labour market points factor						
Skilled employment [None]						
Employed 12 months or more[(2)]	0.185	0.045	**	0.059	0.029	*
Employed less than 12 months[(2)]	0.112	0.039	**			
Job offer	0.038	0.031				
Years of relevant work experience [Less than 2 years]						
2–3 years	0.020	0.037		0.058	0.033	
4–5 years	0.090	0.038	*			
6–7 years	0.118	0.039	**	0.133	0.036	**
8–9 years	0.148	0.043	**			
10+ years	0.144	0.036	**	0.144	0.036	**
Years of relevant work experience in NZ [Less than 1 year]						
1 year	0.023	0.036		0.058	0.034	
2 years	0.263	0.085	**			
3 years	−0.002	0.149				
Qualification [None]						
Bachelor's	0.174	0.023	**	0.168	0.023	**
Master's or higher	0.382	0.037	**	0.377	0.037	**
NZ qualification [None]	0.081	0.040	*	0.064	0.040	
Close family support [None]	0.017	0.046		0.016	0.046	
Demographic characteristics						
Region [Europe]						
South Africa	0.074	0.030	*	0.075	0.030	*
North America	−0.002	0.045		−0.002	0.045	
Asia	−0.208	0.029	**	−0.201	0.029	**
Pacific	−0.040	0.053		−0.026	0.053	
Other	−0.080	0.048		−0.075	0.048	
Age [20–29 years]						
30–39	−0.021	0.027		−0.012	0.027	
40–44	−0.101	0.036	**	−0.095	0.036	**
45–49	−0.089	0.043	*	−0.081	0.043	
50–55	−0.144	0.054	**	−0.135	0.054	*
56+	−0.053	0.225		0.000	0.224	
Gender Female [Male]	−0.185	0.019	**	−0.188	0.019	**
Family composition [Couple without children]						
Couple with children	0.039	0.024		0.038	0.024	
Single	0.008	0.024		0.006	0.024	
Previous visa [Approved offshore]						
No previous student or work visa	−0.203	0.052	**	−0.196	0.052	**
Student visa only	−0.439	0.080	**	−0.448	0.080	**
Work visa only	−0.006	0.053		0.052	0.048	
Both student and work visa	−0.175	0.066	**	−0.146	0.062	*

Time in New Zealand [Zero]						
Less than 1 year	−0.028	0.049		−0.027	0.049	
1–2 years	−0.188	0.055	**	−0.146	0.053	**
3–4 years	−0.331	0.064	**	−0.276	0.062	**
5 years or more	−0.436	0.102	**	−0.309	0.088	**

Note: (1) significance levels; * 5 percent, ** 1 percent

(2) employment observed at residence approval date

Source: Statistics New Zealand, Integrated Data Infrastructure.

4.2.3 Employment

Table 4.3 presents the marginal effects on the employment and retention of skilled migrants three years after taking up residence in New Zealand. The key results for the effect on the employment of skilled migrants are as follows.

- Having current skilled employment or a job offer at the time of residence approval is positively associated with employment but the coefficients for current employment are not significant three years after taking up residence in New Zealand.
- Skilled migrants from North America and Asia are less likely to be employed three years after taking up residence in New Zealand than skilled migrants from Europe. On the other hand, skilled migrants from South Africa are more likely to be employed three years after taking up residence in New Zealand than skilled migrants from Europe.
- Former international students who transition directly into residence are less likely to be employed three years after taking up residence than skilled migrants approved offshore. Furthermore, skilled migrants who did not have a previous student or work visa are also less likely to be employed three years after taking up residence compared to skilled migrants approved offshore.
- Skilled migrants with close family support in New Zealand are less likely to be employed three years after taking up residence in New Zealand than those with no close family support.

Table 4.3 Marginal effects on the employment and retention of skilled migrants in the LisNZ population

Characteristics	Employment of skilled migrants			Retention of skilled migrants		
	Estimate	Standard error	Sig(1)	Estimate	Standard error	Sig(1)
Number of observations	*8,340*			*10,263*		
SMC labour market points factor						
Skilled employment [None]						
Employed 12 months or more(2)	0.027	0.018		0.010	0.021	
Employed less than 12 months(2)	0.015	0.016		0.044	0.017	**
Job offer	0.031	0.013	*	0.043	0.013	**
Years of relevant work experience [Less than 2 years]						
2–3 years	−0.011	0.015		0.018	0.016	
4–5 years	−0.011	0.016		0.018	0.017	

6–7 years	0.022	0.016		0.038	0.017	*
8–9 years	−0.006	0.019		0.021	0.019	
10+ years	0.022	0.015		0.042	0.016	**
Years of relevant work experience in NZ [Less than 1 year]						
1 year	0.000	0.015		−0.030	0.018	
2 years	−0.022	0.033		−0.037	0.046	
3 years	0.046	0.041		0.023	0.075	
Qualification [None]						
Bachelor's	0.002	0.011		−0.013	0.011	
Master's or higher	−0.010	0.015		−0.051	0.016	**
NZ qualification [None]	−0.008	0.014		−0.033	0.018	
Close family support [None]	−0.042	0.021	*	0.083	0.028	**
Demographic characteristics						
Region [Europe]						
South Africa	0.028	0.012	*	0.049	0.013	**
North America	−0.056	0.020	**	−0.138	0.020	**
Asia	−0.029	0.012	*	−0.012	0.013	
Pacific	−0.016	0.022		0.124	0.017	**
Other	−0.013	0.020		0.027	0.022	
Age [20–29 years]						
30–39	−0.009	0.011		0.008	0.012	
40–44	−0.013	0.015		−0.001	0.016	
45–49	−0.028	0.020		0.020	0.019	
50–55	−0.058	0.026	*	−0.008	0.024	
56+	−0.146	0.111		−0.160	0.093	
Gender Female [Male]	−0.036	0.008	**	0.009	0.008	
Family composition [Couple without children]						
Couple with children	0.012	0.011		0.018	0.010	
Single	0.019	0.009	*	−0.048	0.010	**
Previous visa [Approved offshore]						
No previous student or work visa	−0.081	0.027	**	0.035	0.019	
Student visa only	−0.105	0.037	**	0.003	0.033	
Work visa only	−0.007	0.022		0.020	0.025	
Both student and work visa	−0.052	0.028		0.031	0.029	
Time in New Zealand [Zero]						
Less than 1 year	0.015	0.023		0.050	0.026	
1–2 years	−0.008	0.025		0.083	0.028	**
3–4 years	−0.040	0.030		0.133	0.028	**
5 years or more	−0.088	0.049		0.140	0.038	**

Note: (1) significance levels; * 5 percent, ** 1 percent

(2) employment observed at residence approval date

Source: Statistics New Zealand, Integrated Data Infrastructure.

4.2.4 Retention

In terms of the marginal effect on the retention of skilled migrants three years after taking up residence in New Zealand (see Table 4.3), the key results are as follows.

- Having current skilled employment or a job offer at the time of residence approval appears to improve the retention of skilled migrants in New Zealand, although the coefficient for current employment for 12 months or more is not significant.
- Skilled migrants with a master's or higher degree at the time of residence approval are less likely to remain in New Zealand three years after taking up residence compared to skilled migrants with no post-school qualifications. This is not surprising given the international competition for highly skilled migrants in times of global economic growth.
- Skilled migrants from North America are less likely to remain in New Zealand three years after taking up residence than skilled migrants from Europe. However, skilled migrants from South Africa and the Pacific are more likely to remain in New Zealand three years after taking up residence than skilled migrants from Europe.
- Skilled migrants who have spent some time in New Zealand prior to residence approval are more likely to remain in New Zealand three years after taking up residence than skilled migrants approved offshore. In addition, more time in New Zealand prior to residence increases the likelihood of skilled migrants remaining in New Zealand.
- Having family support in New Zealand improves the retention of skilled migrants three years after taking up residence.

5 Labour market integration and retention for tax year cohorts

In this chapter, we examine the labour market integration and retention of skilled migrants who arrived between tax years 2005/06 and 2008/09.[10] This will shed some light on whether or not the labour market integration and retention of skilled migrants reflect the changes in the SMC policy settings over time given in Figure 3.1 (Cobb-Clark, 2004).

5.1 Profiles of the tax year cohorts

Characteristics of skilled migrants who took up residence between tax years 2005/06 and 2008/09 are shown in Table 5.1. We can see that the majority of skilled migrants applied for and were approved residence onshore. Furthermore, the proportion of skilled migrants approved residence onshore increased from 77 percent for the 2005/06 cohort to 83 percent for the 2008/09 cohort. In particular, almost two-thirds of skilled migrants from Asia came to New Zealand initially to study before they transitioned into work and permanent residence.

Over this period, the proportion of skilled migrants from Asia rose from one in three in 2005/06 to one in two in 2008/09, while the proportion of skilled migrants from Europe fell from 45 percent to 27 percent. The rise in proportion of skilled migrants from Asia is mainly driven by the former international students from China who transitioned into work and permanent residence following the completion of their studies in New Zealand.

The proportion of skilled migrants who gained residence through the student and work pathway increased from 23 percent in 2006/07 to 31 percent in 2007/08. This reflects the changes in the SMC policy settings in July 2007 (refer Figure 3.1) to encourage students to stay and work in New Zealand by providing a pathway to permanent residence. Therefore, students who have obtained New Zealand qualifications are facilitated entry as skilled migrants.

The impact of awarding higher SMC bonus points for New Zealand post-graduate qualifications is clearly seen in Table 5.1 with a jump in the proportion of young skilled migrants in the 2007/08 tax year cohort, which coincides with the increase in the proportion of skilled migrants from Asia.

Table 5.1 Characteristics of skilled migrants in tax years 2005/06 to 2008/09

Characteristics	Tax year			
	2005/06	2006/07	2007/08	2008/09
	Percent			
Age (at taking up residence)				
20–29 years	36	36	41	41
30–39 years	39	38	35	35
40–44 years	14	14	12	13
45–49 years	7	7	7	7
50–55 years	4	4	4	4
Region				
Europe	45	43	33	27
South Africa	9	9	9	12
North America	6	5	4	3

[10] For example, 2005/06 tax year refers to the period 1 April 2005 to 31 March 2006.

Asia	34	37	47	48
Pacific	3	4	4	6
Other	3	3	3	4
Approval location				
Offshore	23	26	18	17
Onshore	77	74	82	83
Previous visa				
No previous student or work visa	3	2	2	2
Student visa only	4	2	1	1
Work visa only	48	47	48	49
Both student and work visa	22	23	31	32
Approved offshore	23	26	18	17
Time in NZ before residence				
1–2 years	43	40	44	45
3–4 years	11	10	13	15
5 years or more	2	2	3	5
Less than 1 year	21	23	24	21
Zero	23	24	17	15
Family composition(1)				
Couple with children	33	35	34	34
Single	42	41	43	42
Couple without children	25	24	23	24
Total skilled migrants	**11,718**	**11,514**	**12,189**	**11,631**

Note: (1) Exclude missing values (less than 1 percent) for the family composition variable.

Source: Statistics New Zealand, Integrated Data Infrastructure.

5.2 Labour market integration and retention after three years of residence

Figure 5.1 presents the labour market integration and retention of skilled migrants from the main regions of origin three years after taking up residence in New Zealand. For the 2005/06 tax year cohort the results represent their labour market integration and retention in the 2008/09 tax year, which was during the beginning of the global economic recession. Hence, the results in Figure 5.1 cover the 2008 global economic recession and the subsequent period of recovery.

Median monthly income three years since taking up residence in New Zealand decreased slightly across the tax year cohorts 2005/06 to 2008/09, perhaps reflecting the economic conditions during and after the 2008 global economic recession. Skilled migrants from North America had the highest income followed by skilled migrants from South Africa and Europe. In addition, median monthly income of skilled migrants from these three countries increased across the entry cohorts despite the global economic recession. In line with other studies, median monthly income for skilled migrants from Asia and the Pacific are much lower than other regions of origin.[11] The global economic recession had an adverse effect on the income of skilled migrants from the Pacific, which fell from $4,648 for the 2005/06 cohort to $4,181 for the 2008/09 cohort. This may be attributed to Pacific skilled migrants being over-represented in lower-skilled occupations compared to other regions of origin, as noted in Section 4.1. While median monthly incomes of skilled migrants from

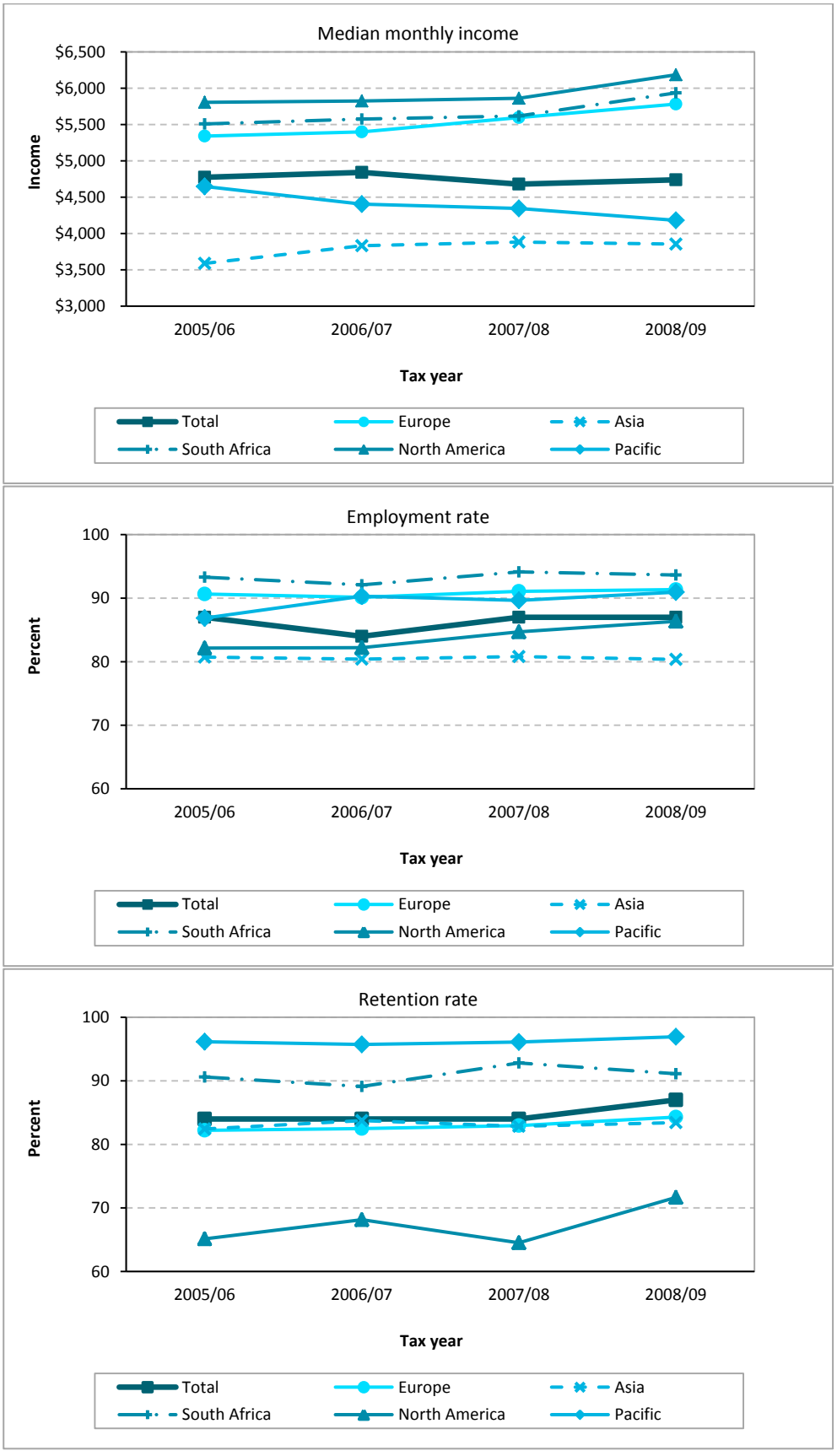
[11] See Grangier et al. (2012).

Asia are the lowest overall, they have increased between the 2005/06 and 2006/07 cohorts and have remained steady since then.

The employment rate of skilled migrants dropped by 3 percentage points for the 2006/07 cohort but has recovered since then, and this is consistent with the recovery after the global economic recession. Skilled migrants from South Africa have the highest employment rate (about 93 percent), followed by skilled migrants from Europe and the Pacific. The employment rate of skilled migrants from the United Stated was low for the 2005/06 and 2006/07 cohorts but higher for the more recent cohorts. Skilled migrants from Asia have the lowest employment rates compared with other regions, and this is again due to the high proportion of former international students with relatively little or no work experience.

The overall retention rates of skilled migrants, three years after taking up residence, rose slightly from 84 percent to 87 percent over the period of analysis. These overall retention rates are very similar to the retention rates of skilled migrants from Asia and Europe. This is not surprising because 75 to 80 percent of skilled migrants come from Asia and Europe. Almost all skilled migrants from the Pacific remained in New Zealand three years after taking up residence. Skilled migrants from North America have the lowest retention rates compared to skilled migrants from other regions.

Figure 5.1 Labour market integration and retention of skilled migrants who took up residence between 2005/06 and 2008/09 tax years, three years later



Source: Statistics New Zealand, Integrated Data Infrastructure.

5.3 Key predictors of labour market integration and retention

Results of the regression models on the key predictors of labour market integration, in terms of income and employment, and retention of skilled migrants three years after taking up residence in New Zealand are given in Appendix A. The key findings over the analysis period will be outlined here.

5.3.1 Income

The power (refer to the adjusted R^2 value in Appendix A) of the regression models on income over the analysis period ranges between 12 and 17 percent.

Current employment or job offer is positively associated with income

Migrants applying under the SMC policy are required to be employed in New Zealand or have a job offer for residence approval. The models suggest that having employment or a job offer at the time of residence approval is positively associated with income three years after migrants took up residence in New Zealand. The effect of a job offer was much stronger in the period leading up to and during the global economic recession, particularly for skilled migrants who took up residence in the tax years 2007/08 and 2008/09.

Relevant work experience increases income in times of economic growth

Relevant work experience increased income during the period when the New Zealand economy was growing prior to the global economic recession (2005/06 to 2007/08 tax years). However, relevant work experience appears to have a negative effect on income for skilled migrants who took up residence during the global economic recession in the 2008/09 tax year.

Positive returns to education

The increase in income associated with qualifications ranges from 14 percent for a bachelor's degree to 41 percent for a master's or higher degree compared with not having any post-school qualification. In addition, obtaining the post-school qualification in New Zealand contributes to higher income for skilled migrants who took up residence in New Zealand before the global economic recession. This is particularly important as more and more international students make the transition into permanent residence through SMC over the analysis period. However, for skilled migrants with a New Zealand post-school qualification who took up residence during the onset of the global economic recession, their incomes were 13 percent lower than skilled migrants who didn't have a New Zealand qualification.

Lower income for former students

Skilled migrants approved offshore have generally higher income than skilled migrants approved onshore. This is not surprising because the majority of skilled migrants approved onshore are former students who initially came to New Zealand in order to gain a New Zealand qualification. Skilled migrants who came through the student pathway have lower income (between 17 and 38 percent) compared to skilled migrants who were approved offshore. But the incomes of students who transitioned directly into permanent residence were at least one-third lower than incomes of skilled migrants who were approved offshore.

Former students are more likely to be from Asia, to have been in New Zealand for a number of years before residence, and to have held a student visa – all of these characteristics are negatively associated with income for all cohorts.

Lower income for migrants from Asia and the Pacific

As previously seen in Figure 5.1, skilled migrants from Asia and the Pacific earned less than skilled migrants from other regions over the analysis period. The magnitude of this effect ranges between 18 and 27 percent less earnings for skilled migrants from Asia compared to skilled migrants from Europe, once we control for other characteristics. Incomes of skilled migrants from the Pacific appear to be lower than skilled migrants from Europe, although the difference is not significant for the 2005/06 and 2006/07 tax year cohorts. For the tax year cohorts leading into and during the global economic recession, the negative effect of income on Pacific skilled migrants becomes significant and increased in magnitude to 14 percent for the 2007/08 cohort and 17 percent for the 2008/09 cohort. This is consistent with a bigger adverse impact of tough economic conditions on people who work in lower-skilled jobs.[12]

5.3.2 Employment

Employed skilled migrants are those who earn a wage or salary (for a minimum of 1 month) or are self-employed in the third year (months 25 to 36) since taking up residence in New Zealand. This is the measure used to indicate the level of participation of skilled migrants in the labour market.

Higher participation for skilled migrants with current employment or job offer

Having skilled employment or a job offer at residence approval increases the likelihood (by 4 to 8 percent) of skilled migrants participating in the labour market three years after taking up residence in New Zealand.

Participation in the labour market varies by source countries

As previously seen in Figure 5.1, skilled migrants from Asia and North America are less likely to participate in the labour market than skilled migrants from Europe. However, controlling for other factors the differences are not significant for skilled migrants from North America who took up residence in tax years 2007/08 and 2008/09. On the other hand, skilled migrants from South Africa appear to be more likely to participate in the labour market than skilled migrants from Europe, but this advantage is only significant for the 2005/06 tax year cohort.

Lower participation of former students in the labour market

Former students are less likely to participate in the labour market after three years since taking up residence than skilled migrants approved offshore. In particular, students who transitioned directly into residence are between 11 and 21 percent less likely to participate in the labour market compared to skilled migrants approved offshore. The differential for students who had a work visa prior to gaining residence in New Zealand is at most 8 percent across the cohorts.

5.3.3 Retention

Three years since taking up residence in New Zealand, some of the skilled migrants have left New Zealand, moving on to either a third country or back to their home countries. This section models the retention of skilled migrants in New Zealand.

Employment and work experience are associated with retention in tough economic conditions

During the global economic recession and the subsequent period of recovery, migrants with skilled employment or relevant work experience at the time of residence approval were more likely to remain in

[12] The Department of Labour (2009) noted that Pacific people (who are over-represented in lower-skilled occupations) are impacted most during a downturn in New Zealand.

New Zealand. In addition, the magnitude of this positive effect increased after the onset of the global economic recession in October 2008. This can be seen by the larger positive effects on retention for skilled migrants in the 2006/07 tax year cohort and thereafter. In a report commissioned by the BBC World Service, Fix et al. (2009) noted that the global economic recession dampened the movement of economic migrants to and from the major destinations and data from around the world did not provide evidence for the notion that the recession has led to massive return migration. Furthermore, because the recession was global, migrants could not relocate to countries with better work opportunities.

Difficult to retain highly qualified skilled migrants

Skilled migrants with a master's or higher degree are more likely to leave New Zealand after three years since taking up residence than skilled migrants with no post-school qualifications.

Family support is associated with retaining skilled migrants

Skilled migrants who have families in New Zealand before residence approval are more likely to remain in New Zealand three years after taking up residence than skilled migrants without any family support or networks.

Time in New Zealand prior to residence is associated with retention of skilled migrants

Skilled migrants who have spent time in New Zealand before residence approval are more likely to remain in New Zealand three years after taking up residence than skilled migrants who have not had time in New Zealand prior to residence approval. The positive effect of time in New Zealand on retention was much stronger during the global economic recession, particularly for the 2006/07 tax year cohort, as employment prospects in other migrant receiving countries were also limited.

Retention varies by source countries

Skilled migrants from South Africa and the Pacific are more likely to remain in New Zealand three years after taking up residence than skilled migrants from Europe. On the other hand, skilled migrants from North America are more likely to leave New Zealand three years after taking up residence than skilled migrants from Europe.

6 Labour market integration and retention for the 2005/06 tax year cohort over time

In this section, we examine the labour market integration and retention for the cohort of skilled migrants who took up residence in the 2005/06 tax year over time in New Zealand. This will enable us to understand the longer-term labour market integration and retention of skilled migrants as they adapt to life in New Zealand. For this cohort, the impact of the global economic recession will be seen from the fourth year of settlement in New Zealand onwards.

6.1 Description of labour market integration and retention over time

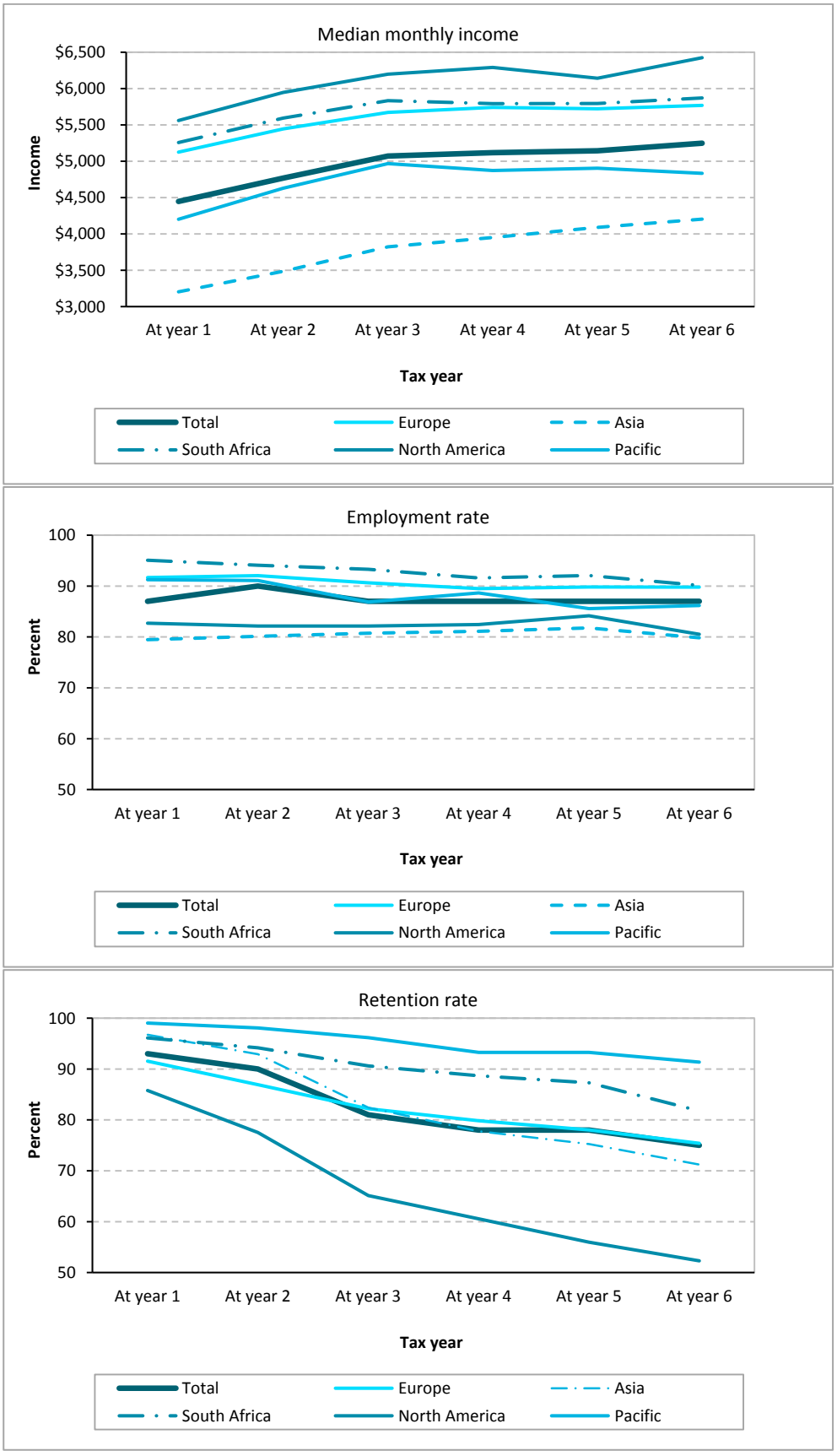
The labour market integration and retention for the 2005/06 tax year cohort of skilled migrants over time are shown in Figure 6.1. We will highlight the key points for the regions of origin of skilled migrants.

As the interest is in observing the 2005/06 tax year cohort over time, income has been adjusted to the September 2005 quarter using the Consumer Price Index to account for inflation. Median monthly income generally increased over time but the rates of increase differ among the main regions of origin. As noted previously in this report, skilled migrants from North America have the highest median monthly income followed by skilled migrants from Europe and South Africa. The income advantage of skilled migrants from North America over those from Europe and South Africa is maintained over the first six years of settlement in New Zealand. In addition, the median monthly incomes of skilled migrants from Europe and South Africa remain steady from the fourth year of settlement onwards. Median monthly income for skilled migrants from the Pacific increased to $4,968 in the third year, after which it declined. As noted earlier, the global economic recession had the biggest adverse impact on people working in lower-skilled jobs. While the median monthly income of skilled migrants from Asia is the lowest compared to other groups, it is rising at a higher rate over the first six years of residence in New Zealand. It is expected that the increase in income for skilled migrants from Asia will continue as these former international students gain more experience in their work and consequently earn higher incomes.

Since taking up residence in New Zealand, the employment rate of skilled migrants remained at 87 percent over time for the 2005/06 tax year cohort with the exception of year two when the employment rate was 90 percent. Skilled migrants from South Africa have the highest employment rate, followed by skilled migrants from Europe and the Pacific. Furthermore, the employment rate from these three regions of origin fell over the first six years by five (South Africa and Pacific) and two (Europe) percentage points. Skilled migrants from Asia have the lowest employment rate compared to other regions, but the employment rate increased slightly over the first five years of residence in New Zealand before falling back to 80 percent in the sixth year.

Retention rates generally decline over time as more migrants leave their host country. In terms of regions of origin, skilled migrants from the Pacific have the highest retention rates with 91 percent of the 2005/06 tax year cohort still remaining in New Zealand after six years of residence. The retention rates of skilled migrants from Europe and Asia follow a similar trend over time. Skilled migrants from North America have the lowest retention rates compared to skilled migrants from other regions, with only half remaining after six years of residence in New Zealand.

Figure 6.1 Labour market integration and retention for the 2005/06 tax year cohort of skilled migrants



Source: Statistics New Zealand, Integrated Data Infrastructure.

6.2 Key predictors of labour market integration and retention over time

Results of the regression models on the key predictors of labour market integration and retention for the 2005/06 tax year cohort over time are given in Appendix A, but the key findings are presented here.

6.2.1 Income

Positive effect of current employment or work experience lessens over time

The positive effect of having employment or a job offer at the time of residence approval on income lessens over the time of settlement in New Zealand. By the sixth year, only the effect of having employment for less than 12 months at the time of residence approval is still significant. Relevant work experience is also a good predictor of income but its effect diminishes by the sixth year of residence in New Zealand as other skilled migrants, who had no previous work experience at the time of residence approval, get more work experience through their workplaces.

Positive returns from education continue over time

The positive effect of qualifications on income continues to hold over the first six years and provides a good return on the cost invested in getting a qualification. By the sixth year, the incomes of skilled migrants with a bachelor's degree are 19 percent higher than those with no post-school qualification. The income advantage for skilled migrants with a master's or higher degree is 38 percent over skilled migrants with no post-school qualification, twice the income advantage of a bachelor's degree holder. The income of skilled migrants with a New Zealand qualification is 13 percent higher than the income of skilled migrants with no post-school qualification.

Income of former students remains lower over time

While the incomes of former international students were much lower than skilled migrants approved offshore, they appear to be closing the gap in the first four years of residence in New Zealand. However, the gap increased again in years 5 and 6 of residence in New Zealand. This is perhaps due the adverse impact of the global economic recession on employment conditions of students who were employed at the time.

Income of skilled migrants varies by source countries

While Figure 6.1 shows that skilled migrants from North America earn more than skilled migrants from Europe in the first six years of residence in New Zealand, this advantage is not significant when other factors are held constant. However, the income of skilled migrants from South Africa is 9 percent higher than the income of skilled migrants from Europe even after six years of residence in New Zealand. On the other hand, skilled migrants from Asia earn lower incomes than skilled migrants from Europe. The income disadvantage of skilled migrants from Asia is maintained over the first six years of settlement in New Zealand.

6.2.2 Employment

Current employment or job offer important for participation in the labour market

Having skilled employment or a job offer at the time of residence approval increases the likelihood of skilled migrants participating in the labour market. However, the positive effect is reduced by half over the first six years of residence in New Zealand. In addition, skilled migrants who were employed at the time of residence approval were 7 percent more likely to participate in the labour market at the peak of the global economic recession – about twice the effect compared to years 5 and 6 of residence in New Zealand. So the

importance of having skilled employment at the time of residence approval is quite strong in tough economic conditions, even for migrants who have settled in New Zealand for four years.

Participation in the labour market over time varies by source countries

We have seen in Figure 6.1 that skilled migrants from Asia and North America are less likely to participate in the labour market than skilled migrants from Europe in the first six years of residence in New Zealand. The difference is between 5 and 9 percent in the first six years of residence in New Zealand. Skilled migrants from South Africa are more likely to participate in the labour market than skilled migrants from Europe in the first three years of residence but this advantage is not significant thereafter. However, the positive effect on the labour market participation of skilled migrants from the Pacific diminishes with time in New Zealand. After four years of residence in New Zealand the chances of skilled migrants from the Pacific participating in the labour market appear to be less than those of skilled migrants from Europe.

Participation of former students in the labour market improves with time in New Zealand

While former students are less likely to participate in the labour market than skilled migrants approved offshore, this disadvantage is only short-term. After five years of residence in New Zealand the chances of former students participating in the labour market are comparable to skilled migrants approved offshore. Perhaps this improvement is due in part to the accumulation of work experience in the workplace.

6.2.3 Retention

Job offer is associated with retention of skilled migrants over time

Skilled migrants with a job offer or current employment at the time of residence approval are more likely to remain in New Zealand than skilled migrants who did not have skilled employment or a job offer in the first year of residence in New Zealand. After the first year, the effect is significant but small.

Extensive work experience is associated with retention over time

After three years of residence in New Zealand, skilled migrants who had at least 10 years of relevant work experience at the time of residence approval are more likely to remain in New Zealand than skilled migrants who had less than two years of relevant work experience.

Loss of skilled migrants with New Zealand qualifications increases over time

Skilled migrants with New Zealand post-graduate qualifications are more likely to leave New Zealand than skilled migrants with no post-school qualifications after three years of residence in New Zealand. This suggests that skilled migrants who completed a New Zealand post-graduate qualification will try and gain some work experience in New Zealand before moving on to other countries. But former international students are more likely to remain in New Zealand in the first two years of settlement.

Skilled migrants with family support are more likely to stay in New Zealand

Skilled migrants who have families in New Zealand before residence approval are more likely to remain in New Zealand than skilled migrants without any family support or networks. The positive effect on the retention of skilled migrants increased from 4 percent in the first year to 7 percent in the sixth year of residence in New Zealand.

Time in New Zealand prior to residence is associated with retention

Skilled migrants who have spent at least three years in New Zealand before residence approval are more likely to remain in New Zealand than skilled migrants who have not had time in New Zealand prior to residence approval. The positive effect is strengthened over the first six years of residence in New Zealand.

This result is consistent with observations from the OECD that migrants leave their host country after a relatively short time, perhaps three years, and the longer a migrant stays in the host country, the less likely he/she is to return home or to re-migrate to a third country (OECD, 2008).

Retention varies by source countries

Skilled migrants from South Africa and the Pacific are more likely to remain in New Zealand than skilled migrants from Europe. For skilled migrants from the Pacific the positive effect on retention increases over time from 5 percent in the first year to 14 percent in the sixth year of residence in New Zealand. On the other hand, skilled migrants from North America are more likely to leave New Zealand than skilled migrants from Europe. The difference was much stronger during the global economic recession and subsequent period of recovery.

7 Conclusion

In this report, we use data from Statistics New Zealand's IDI to examine the labour market integration and retention of skilled migrants from the time they take up permanent residence in New Zealand. We extended previous research on the effect of the SMC points system that was based on wages of a sample of skilled migrants who took up residence in New Zealand from November 2004 to October 2005. In this study we used all skilled migrants taking up residence in this time period and also looked at other objectives such as their employment and retention in New Zealand. Labour market integration and retention of skilled migrants were then examined for people granted residence in different tax years (2005/06 to 2008/09), to enable us to identify how patterns changed for groups exposed to different economic and policy conditions. Labour market integration and retention for one group of skilled migrants (granted residence in the 2005/06 tax year) were also tracked over a period of up to six years, allowing us to examine how the labour market integration and retention trajectories differed for skilled migrants with different characteristics.

Having current employment or a job offer at the time of residence approval suggests positive labour market integration and retention in New Zealand for prospective skilled migrants. These skilled migrants have higher incomes, better employment opportunities and are more likely to remain in New Zealand. This is particularly important when skilled migrants take up residence at a time the New Zealand economy is in a recession. While the magnitude of these advantages lessens over time skilled migrants with employment or a job offer at the time of residence approval are still enjoying better outcomes, in terms of labour market integration and retention, up to six years of settlement in New Zealand.

Returns to education on income are positive; however, former international students have lower income and are less likely to be employed since taking up residence in New Zealand.

Different labour market integration and retention outlooks are experienced by skilled migrants from different source countries. Skilled migrants from Asia have lower income and are less likely to be employed compared to skilled migrants from Europe. This is mainly due to the majority of skilled migrants from Asia being former international students, particularly from China and India. Skilled migrants from the Pacific also have lower income due to the high proportion working in lower-skilled employment. However, the majority of skilled migrants from the Pacific do remain in New Zealand long-term or permanently. While skilled migrants from North America have higher incomes, they are less likely to participate in the labour market and less likely to remain in New Zealand long-term.

Having family support in New Zealand helps with the retention of skilled migrants but does not improve their employment prospects or income.

The results in this study are consistent with previous research in New Zealand and highlight the fact that skilled migrants generally settle well into the New Zealand labour market. Nevertheless, some groups of skilled migrants settle better than others and policy settings could potentially better target these groups.

For the groups of skilled migrants experiencing lower levels of labour market integration (for example, former international students) targeted settlement support services can facilitate their pathway to skilled employment. Immigration New Zealand is currently working to provide additional support for these groups of skilled migrants to improve their labour market integration and retention prospects. Based on the research findings and a recent stocktake of settlement services, these skilled migrants have been identified as the priority groups for the New Zealand Migrant Settlement and Integration Strategy.

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Appendix A Additional regression results

The results presented in Tables A.1 to A.3 below are discussed in Section 5. Similarly, the results in Tables A.4 to A.6 are discussed in Section 6.

Table A.1 Income models three years after taking up residence – tax year cohorts.

Characteristics	2005/06		2006/07		2007/08		2008/09	
	Estimate	Sig	Estimate	Sig	Estimate	Sig	Estimate	Sig
R^2	*0.132*		*0.128*		*0.152*		*0.173*	
Adjusted R^2	*0.128*		*0.124*		*0.148*		*0.169*	
Number of observations	*8,085*		*8,103*		*8,640*		*8,373*	
SMC labour market points factor								
Skilled employment [None]								
Employed 12+ months	0.198	**	0.222	**	0.183	**	0.186	**
Employed <12 months	0.124	**	0.158	**	0.164	**	0.184	**
Job offer	0.068	*	0.078	**	0.184	**	0.124	**
Years of relevant work experience [Less than 2 years]								
2–3 years	0.039		0.045		0.097	**	−0.021	
4–5 years	0.104	**	0.061		0.079	*	−0.066	*
6–7 years	0.089	*	0.045		0.087	*	0.014	
8–9 years	0.140	**	0.112	**	0.058		−0.089	*
10+ years	0.189	**	0.148	**	0.086	**	−0.014	
Years of relevant work experience in NZ [Less than 1 year]								
1 year	0.004		0.032		−0.011		−0.001	
2 years	0.165	*	−0.011		−0.143	**	−0.013	
3 years	−0.048		−0.318	*	−0.128		−0.011	
Qualification [None]								
Bachelor's	0.213	**	0.150	**	0.140	**	0.135	**
Master's or higher	0.406	**	0.368	**	0.305	**	0.272	**
NZ qualification [None]	0.097	**	0.155	**	0.189	**	−0.132	**
Close family support [None]	−0.068		−0.054		−0.071	*	−0.084	**
Demographic characteristics								
Region [Europe]								
South Africa	0.087	**	0.060	*	0.031		0.064	*
North America	0.029		0.108	*	0.155	**	0.110	*
Asia	−0.270	**	−0.178	**	−0.211	**	−0.209	**
Pacific	−0.017		−0.075		−0.137	**	−0.166	**
Other	−0.040		−0.051		0.035		−0.058	
Age [20–29 years]								
30–39	−0.036		0.008		0.029		0.056	*
40–44	−0.083	*	−0.058		0.016		0.020	
45–49	−0.078		−0.094	*	−0.042		0.001	
50–55	−0.207	**	−0.087		−0.029		0.065	
56+	−0.004		−0.056		−0.097		−0.400	**
Gender Female [Male]	−0.159	**	−0.120	**	−0.106	**	−0.157	**
Family composition [Couple without children]								
Couple with children	0.031		0.022		0.015		0.006	
Single	0.011		0.014		−0.009		−0.001	
Previous visa [Approved offshore]								
No previous student or work visa	−0.227	**	−0.214	**	−0.273	**	−0.282	**
Student visa only	−0.337	**	−0.638	**	−0.333	**	−0.506	**
Work visa only	0.015		−0.017		0.008		−0.038	
Both student and work visa	−0.167	**	−0.300	**	−0.377	**	−0.166	**
Time in New Zealand [Zero]								
Less than 1 year	−0.024		0.000		−0.005		−0.048	
1–2 years	−0.197	**	−0.165	**	−0.146	**	−0.217	**
3–4 years	−0.306	**	−0.369	**	−0.248	**	−0.389	**
5 years or more	−0.387	**	−0.331	**	−0.356	**	−0.482	**

Table A.2 Models on the employment of skilled migrants three years after taking up residence – tax year cohorts

Characteristics	2005/06		2006/07		2007/08		2008/09	
	Estimate	Sig	Estimate	Sig	Estimate	Sig	Estimate	Sig
Number of observations	*9,309*		*9,819*		*9,396*		*9,882*	
SMC labour market points factor								
Skilled employment [None]								
Employed 12+ months	0.030		0.042	*	0.050	**	0.053	**
Employed <12 months	0.045	**	0.035	*	0.058	**	0.042	**
Job offer	0.051	**	0.074	**	0.076	**	0.051	**
Years of relevant work experience [Less than 2 years]								
2–3 years	−0.001		0.026		0.039	**	0.009	
4–5 years	0.002		0.020		−0.010		−0.001	
6–7 years	0.025		0.024		0.001		0.002	
8–9 years	0.014		0.038	*	0.014		0.006	
10+ years	0.023		0.031	*	0.013		0.009	
Years of relevant work experience in NZ [Less than 1 year]								
1 year	−0.011		0.017		−0.011		−0.014	
2 years	−0.064		−0.020		−0.025		0.003	
3 years	−0.034		−0.046		−0.024		−0.037	
Qualification [None]								
Bachelor's	−0.002		0.034	**	0.005		0.030	*
Master's or higher	−0.004		0.048	**	0.009		0.019	
NZ qualification [None]	0.007		0.015		0.021		−0.018	
Close family support [None]	−0.034		−0.020		−0.024		−0.021	
Demographic characteristics								
Region [Europe]								
South Africa	0.025	*	0.016		0.026		0.018	
North America	−0.051	**	−0.071	**	−0.033		−0.045	
Asia	−0.061	**	−0.060	**	−0.030	**	−0.045	**
Pacific	0.006		−0.009		0.025		0.000	
Other	−0.018		−0.020		0.004		−0.042	*
Age [20–29 years]								
30–39	−0.024	*	−0.005		0.007		−0.002	
40–44	−0.038	*	−0.017		−0.002		−0.037	*
45–49	−0.049	*	−0.057	**	−0.046	*	−0.038	
50–55	−0.109	**	−0.163	**	−0.029		−0.105	**
56+	−0.042		−0.139		−0.128		−0.303	**
Gender Female [Male]	−0.032	**	−0.030	**	−0.032	**	−0.035	
Family composition [Couple without children]								
Couple with children	0.022	*	0.020		0.042	**	0.007	
Single	0.014		0.004		0.008		0.024	**
Previous visa [Approved offshore]								
No previous student or work visa	−0.073	**	−0.086	*	−0.080		−0.135	**
Student visa only	−0.109	**	−0.135	**	−0.208	**	−0.187	**
Work visa only	−0.006		0.038		0.034		0.045	
Both student and work visa	−0.071	*	−0.028		−0.081	**	−0.048	
Time in New Zealand [Zero]								
Less than 1 year	0.005		-0.002		−0.023		−0.022	
1–2 years	−0.011		−0.022		−0.026		−0.041	*
3–4 years	−0.004		−0.043		−0.039		−0.057	*
5 years or more	0.022		−0.032		−0.063	*	−0.086	**

Table A.3 Models on the retention of skilled migrants three years after taking up residence – tax year cohorts.

Characteristics	2005/06		2006/07		2007/08		2008/09	
	Estimate	Sig	Estimate	Sig	Estimate	Sig	Estimate	Sig
Number of observations	*11,400*		*11,793*		*11,274*		*11,727*	
SMC labour market points factor								
Skilled employment [None]								
Employed 12+ months	0.010		0.054	**	0.070	**	0.070	**
Employed <12 months	0.014		0.069	**	0.066	**	0.076	**
Job offer	0.031	**	0.084	**	0.089	**	0.097	**
Years of relevant work experience [Less than 2 years]								
2–3 years	−0.011		0.041	**	0.026		0.031	*
4–5 years	−0.008		0.025		0.050	**	0.024	
6–7 years	0.007		0.036	*	0.059	**	0.031	*
8–9 years	0.005		0.041	*	0.047	**	0.046	**
10+ years	0.020		0.039	**	0.063	**	0.055	**
Years of relevant work experience in NZ [Less than 1 year]								
1 year	−0.014		−0.023		−0.014		0.004	
2 years	0.003		0.004		0.013		0.007	
3 years	0.037		−0.023		−0.070		0.008	
Qualification [None]								
Bachelor's	0.008		0.014		0.016		−0.004	
Master's or higher	−0.027		−0.032	*	−0.015		−0.031	*
NZ qualification [None]	−0.027		−0.001		−0.031	*	−0.016	
Close family support [None]	0.065	**	0.039	**	0.057	**	0.039	**
Demographic characteristics								
Region [Europe]								
South Africa	0.062	**	0.047	**	0.071	**	0.047	**
North America	−0.124	**	−0.127	**	−0.119	**	−0.116	**
Asia	0.002		0.012		0.021		0.017	
Pacific	0.126	**	0.120	**	0.130	**	0.125	**
Other	0.014		0.035		0.003		0.009	
Age [20–29 years]								
30–39	0.001		0.026	*	0.032	**	0.015	
40–44	−0.001		0.023		0.022		0.023	
45–49	0.007		0.024		0.031		−0.007	
50–55	−0.013		0.002		−0.009		−0.004	
56+	−0.161		0.062		−0.031		−0.075	
Gender Female [Male]	0.004		0.001		0.014	*	−0.002	
Family composition [Couple without children]								
Couple with children	0.019		0.031	**	0.029	**	0.021	*
Single	−0.026	**	−0.016		−0.012		−0.011	
Previous visa [Approved offshore]								
No previous student or work visa	0.005		0.023		0.009		0.026	
Student visa only	0.023		−0.086	*	0.061		−0.005	
Work visa only	0.043		−0.006		0.075	**	0.034	
Both student and work visa	0.037		−0.030		0.057	*	0.005	
Time in New Zealand [Zero]								
Less than 1 year	0.009		0.093	**	0.022		0.037	
1–2 years	0.045		0.117	**	0.044		0.088	**
3–4 years	0.088	**	0.161	**	0.087	**	0.106	**
5 years or more	0.113	**	0.213	**	0.127	**	0.142	**

Table A.4 Income models for the 2005/06 tax year cohort

Characteristics	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6	
	Est	Sig	Est	Sig	Est	Sig	Est	Sig	Est	Sig	Est	Sig
R^2	*0.201*		*0.155*		*0.126*		*0.096*		*0.106*		*0.108*	
Adjusted R^2	*0.197*		*0.152*		*0.122*		*0.092*		*0.102*		*0.104*	
Number of observations	*9,255*		*8,829*		*8,085*		*7,704*		*7,509*		*7,083*	
SMC labour market points factor												
Skilled employment [None]												
Employed 12+ months	0.387	**	0.287	**	0.206	**	0.148	**	0.135	**	0.059	
Employed <12 months	0.311	**	0.222	**	0.130	**	0.116	**	0.115	**	0.083	*
Job offer	0.239	**	0.172	**	0.073	*	0.058		0.081	*	0.040	
Years of relevant work experience [Less than 2 years]												
2–3 years	0.017		0.055		0.046		0.010		0.006		−0.042	
4–5 years	0.081	**	0.110	**	0.114	**	0.083	*	0.044		−0.037	
6–7 years	0.120	**	0.102	**	0.098	*	0.093	*	0.070		0.002	
8–9 years	0.143	**	0.128	**	0.151	**	0.061		0.086		0.028	
10+ years	0.146	**	0.158	**	0.201	**	0.120	**	0.115	**	0.053	
Years of relevant work experience in NZ [Less than 1 year]												
1 year	0.003		0.021		0.002		0.019		0.016		0.069	
2 years	0.058		0.087		0.162	*	0.091		0.135		0.234	**
3 years	−0.118		0.153		−0.062		0.182		0.005		0.157	
Qualification [None]												
Bachelor's	0.213	**	0.187	**	0.221	**	0.206	**	0.228	**	0.185	**
Master's or higher	0.378	**	0.363	**	0.419	**	0.387	**	0.434	**	0.379	**
NZ qualification [None]	0.069	*	0.065	*	0.102	**	0.095	*	0.120	**	0.126	**
Close family support [None]	−0.043		−0.009		−0.070		−0.039		−0.030		−0.023	
Demographic characteristics												
Region [Europe]												
South Africa	0.040		0.085	**	0.096	**	0.068	*	0.104	**	0.086	**
North America	0.064	*	0.082	*	0.019		−0.051		0.060		0.072	
Asia	−0.221	**	−0.254	**	−0.267	**	−0.247	**	−0.239	**	−0.260	**
Pacific	−0.118	**	−0.038		0.004		−0.074		−0.033		−0.065	
Other	−0.001		0.014		−0.031		0.036		−0.005		−0.061	
Age [20–29 years]												
30–39	0.032		0.004		−0.038		−0.050		−0.032		−0.031	
40–44	0.010		0.018		−0.082	*	−0.072		−0.045		−0.058	
45–49	0.029		−0.016		−0.078		−0.092	*	−0.077		−0.092	*
50–55	−0.034		−0.062		−0.208	**	−0.159	**	−0.262	**	−0.267	**
56+	0.073		0.091		−0.013		0.030		−0.367	*	−0.398	
Gender Female [Male]	−0.105	**	−0.136	**	−0.154	**	−0.137	**	−0.207	**	−0.209	**
Family composition [Couple without children]												
Couple with children	0.044	*	0.022		0.034		0.078	**	0.082	**	0.083	**
Single	0.008		−0.003		0.015		0.005		0.027		0.052	*
Previous visa [Approved offshore]												
No previous student or work visa	−0.106	*	−0.212	**	−0.229	**	−0.310	**	−0.248	**	−0.158	**
Student visa only	−0.621	**	−0.435	**	−0.335	**	−0.256	**	−0.321	**	−0.435	**
Work visa only	−0.089	*	−0.046		0.009		−0.033		0.005		−0.047	
Both student and work visa	−0.347	**	−0.245	**	-0.167	*	−0.154	*	−0.139		−0.224	**
Time in New Zealand [Zero]												
Less than 1 year	0.007		−0.024		−0.020		−0.017		−0.026		−0.005	
1–2 years	−0.080		−0.149	**	−0.196	**	−0.198	**	−0.167	**	−0.103	
3–4 years	−0.164	**	−0.270	**	−0.310	**	−0.325	**	−0.296	**	−0.299	**
5 years or more	−0.216	**	−0.388	**	−0.390	**	−0.439	**	−0.353	**	−0.415	**

Table A.5 Models on the employment of skilled migrants for the 2005/06 tax year cohort

Characteristics	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6	
	Est	Sig	Est	Sig	Est	Sig	Est	Sig	Est	Sig	Est	Sig
Number of observations	*10,554*		*10,101*		*9,309*		*8,949*		*8,721*		*8,301*	
SMC labour market points factor												
Skilled employment [None]												
Employed 12+ months	0.08	**	0.07	**	0.03		0.07	**	0.03		0.04	*
Employed <12 months	0.08	**	0.06	**	0.04	**	0.07	**	0.04	**	0.04	*
Job offer	0.11	**	0.08	**	0.05	**	0.07	**	0.04	**	0.05	**
Years of relevant work experience [Less than 2 years]												
2–3 years	0.01		0.02		0.00		0.01		−0.02		−0.02	
4–5 years	−0.01		−0.01		0.00		0.00		−0.01		−0.02	
6–7 years	0.01		0.03		0.02		0.01		−0.01		−0.01	
8–9 years	−0.01		0.00		0.01		0.00		0.00		−0.01	
10+ years	0.00		0.01		0.02		0.02		0.00		0.01	
Years of relevant work experience in NZ [Less than 1 year]												
1 year	−0.01		−0.05	**	−0.01		−0.02		0.00		0.00	
2 years	−0.01		0.00		−0.06		0.00		0.00		−0.04	
3 years	−0.08		-0.01		−0.03		−0.04		0.00		−0.02	
Qualification [None]												
Bachelor's	0.01		0.02		0.00		0.01		0.00		0.03	*
Master's or higher	0.03	*	0.03	*	0.00		0.01		−0.01		0.02	
NZ qualification [None]	0.00		0.01		0.01		0.05	**	0.00		0.00	
Close family support [None]	−0.02		−0.03		−0.03		−0.01		−0.01		−0.04	*
Demographic characteristics												
Region [Europe]												
South Africa	0.03	**	0.03	**	0.03	*	0.00		0.00		0.02	
North America	−0.07	**	−0.07	**	−0.05	**	−0.07	**	−0.06	**	−0.07	**
Asia	−0.09	**	−0.08	**	−0.06	**	−0.06	**	−0.06	**	−0.08	**
Pacific	0.04	*	0.03		0.01		0.00		−0.02		−0.01	
Other	0.00		−0.03		−0.02		−0.01		−0.02		−0.03	
Age [20–29 years]												
30–39	−0.01		−0.01		−0.02	*	0.00		−0.02		−0.01	
40–44	−0.05	**	−0.04	*	−0.04	*	−0.04	*	−0.05	**	−0.04	*
45–49	−0.10	**	−0.06	**	−0.05	*	−0.07	**	−0.10	**	−0.09	**
50–55	−0.09	**	−0.10	**	−0.11	**	−0.11	**	−0.13	**	−0.15	**
56+	−0.03		−0.02		−0.04		−0.18	*	−0.11		−0.30	**
Gender Female [Male]	−0.02	**	−0.05	**	−0.03	**	−0.05	**	−0.05	**	−0.05	**
Family composition [Couple without children]												
Couple with children	0.02	*	0.02	*	0.02	*	0.02	*	0.03	**	0.04	**
Single	0.02	*	0.02	*	0.01		0.01		0.01		0.02	
Previous visa [Approved offshore]												
No previous student or work visa	−0.08	**	−0.06	*	−0.07	**	−0.05	*	−0.07	*	−0.04	
Student visa only	−0.12	**	−0.15	**	−0.11	**	−0.12	**	−0.09	*	−0.03	
Work visa only	0.00		0.01		−0.01		−0.03		0.01		0.01	
Both student and work visa	−0.08	**	−0.07	*	−0.07	*	−0.07	*	−0.03		−0.02	
Time in New Zealand [Zero]												
Less than 1 year	0.01		0.01		0.00		0.01		−0.01		−0.01	
1–2 years	0.01		0.01		−0.01		−0.01		−0.03		−0.03	
3–4 years	0.01		0.02		0.00		−0.01		−0.05		−0.04	
5 years or more	0.04		0.03		0.02		0.04		−0.03		0.01	

Table A.6 Models on the retention of skilled migrants for the 2005/06 tax year cohort

Characteristics	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6	
	Est	Sig	Est	Sig	Est	Sig	Est	Sig	Est	Sig	Est	Sig
Number of observations	*11,400*		*11,400*		*11,400*		*11,400*		*11,400*		*11,400*	
SMC labour market points factor												
Skilled employment [None]												
Employed 12+ months	0.06	**	0.03		0.01		0.02		0.03		0.03	
Employed <12 months	0.06	**	0.04	**	0.01		0.02		0.03		0.02	
Job offer	0.06	**	0.03	**	0.03	**	0.03	**	0.03	*	0.03	
Years of relevant work experience [Less than 2 years]												
2–3 years	0.00		−0.01		−0.01		−0.01		0.00		0.01	
4–5 years	0.02		0.00		−0.01		0.01		0.02		0.03	
6–7 years	0.01		0.00		0.01		0.02		0.02		0.03	
8–9 years	0.01		0.00		0.01		0.02		0.03		0.04	*
10+ years	0.01		0.02		0.02		0.03	*	0.04	*	0.05	**
Years of relevant work experience in NZ [Less than 1 year]												
1 year	0.00		0.01		−0.01		−0.01		−0.02		−0.02	
2 years	0.04	*	0.00		0.00		−0.05		−0.04		0.00	
3 years	0.02		−0.05		0.04		−0.01		0.06		0.09	
Qualification [None]												
Bachelor's	0.02	*	0.01		0.01		0.01		0.01		0.01	
Master's or higher	0.00		−0.01		−0.03		−0.02		−0.04	*	−0.02	
NZ qualification [None]	0.01		−0.02		−0.03		−0.04	*	−0.04	*	−0.04	*
Close family support [None]	0.04	**	0.04	**	0.06	**	0.08	**	0.07	**	0.07	**
Demographic characteristics												
Region [Europe]												
South Africa	0.02	**	0.04	**	0.06	**	0.06	**	0.07	**	0.04	**
North America	−0.04	**	−0.08	**	−0.12	**	−0.16	**	−0.18	**	−0.20	**
Asia	0.00		0.04	**	0.00		0.00		0.00		−0.01	
Pacific	0.05	**	0.08	**	0.13	**	0.11	**	0.14	**	0.14	**
Other	0.01		0.01		0.01		0.00		0.01		−0.02	
Age [20-29 years]												
30–39	−0.01		−0.01		0.00		0.01		0.01		0.00	
40–44	−0.01		−0.01		0.00		0.02		0.01		0.00	
45–49	−0.02		−0.01		0.01		0.03		0.03		0.05	*
50–55	−0.03		−0.01		−0.01		0.01		0.01		0.01	
56+	−0.04		−0.03		−0.16		−0.02		−0.01		0.04	
Gender Female [Male]	0.01		0.02	**	0.00		0.01		0.00		0.01	
Family composition [Couple without children]												
Couple with children	−0.01		0.00		0.02		0.02	*	0.03	**	0.05	**
Single	−0.03	**	−0.02	**	−0.03	**	−0.02		−0.01		0.00	
Previous visa [Approved offshore]												
No previous student or work visa	−0.01		0.01		0.01		0.04		0.05	*	0.03	
Student visa only	0.05	**	0.04		0.02		0.03		0.01		0.02	
Work visa only	0.02		0.02		0.04		0.04		0.03		0.04	
Both student and work visa	0.05	**	0.05	*	0.04		0.03		0.02		0.03	
Time in New Zealand [Zero]												
Less than 1 year	0.02		0.02		0.01		0.01		0.01		0.00	
1–2 years	0.03	*	0.04		0.04		0.05		0.04		0.04	
3–4 years	0.04	*	0.05	*	0.09	**	0.10	**	0.10	**	0.09	**
5 years or more	0.07	**	0.11	**	0.11	**	0.15	**	0.14	**	0.17	**

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