

EMPLOYMENT BY SKILLS IN NEW ZEALAND AND MIGRANTS' SHARE IN ITS RECENT GROWTH: TRANS-TASMAN AND WIDER COMPARISONS

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Abstract

Migration has historically played a key role in growing the New Zealand population, increasing its cultural diversity and in supplying skilled labour to the New Zealand economy. The link between economic growth and the skills of the workforce have been well documented in economic growth literature. The immigration policy provides a direct policy lever to influence the future skill mix in the labour market. This paper aims to quantify the skills New Zealand is gaining from migration. Three main conclusions have arisen from this analysis: over the last 5 years, New Zealand has gained people at the highly skilled level, lost workers at the three other skill levels and the origins of migrants have changed.

JEL Codes: J61

Keyword(s): Skilled Migration, Labour Market, Trans-Tasman Migration

1. Introduction

Within New Zealand, migration has always played an important role in growing our population, adding to New Zealand's human capital, and has provided an invaluable source of labour for the New Zealand economy. The link between economic growth and the skills of the workforce has been well documented in the literature (Barrett, 2007; Bedford, 2003). Immigration policy along with the education system thus provides a direct policy lever to influence the future skill mix of the New Zealand labour market. The main difference here is the time frames involved. The impacts of immigration policy can be expected to be more immediate while the education and training impacts within New Zealand will have some time lags.

Over the last decade, there has been a continuing debate concerning the notion that New Zealand has been losing its smartest and brightest to outward migration. This paper aims to quantify the role migration has played in employment growth over the last decade, identifying which countries migrants to New Zealand are arriving from and departing to and the skills of these migrants.

In recent years, New Zealand's immigration policy with respect to the Residency program has focused on attracting skilled migrants who possess skills that are in shortage and also meet specific language criteria. Recently, however, with the global recession leading to increased domestic unemployment rates, many governments have implemented restrictive immigration policies (Immigration New Zealand, 2009). Immigration New Zealand, therefore, had to take into account the rising unemployment rate and the New Zealanders first policy when regularly reviewing the

immediate (or short-term) and the long-term (essential) skills shortage lists when issuing work permits.

This paper is based on the analysis of historical flows of skilled migrants and utilises permanent and long-term (PLT) migration data from Statistics New Zealand. This data provides the current occupation of migrants recorded in arrival and departure cards by those entering into and departing from New Zealand. The data is then aggregated to four broad skill groups: highly skilled, skilled, semi-skilled and elementary. The groupings are based on the standard classification codes of occupations provided by Statistics New Zealand (SNZ), which are discussed in detail in the following section. A similar analysis was then conducted for Australia, based on data from the Australian Bureau of Statistics (ABS).

Flows of migrants to Australia were also studied separately to identify the most prominent skills New Zealand has been losing to or gaining from Australia. Findings from this analysis indicate that, on a net basis, New Zealand has been losing migrants to Australia in all the years for which data was analysed across the four skill groups. The net loss of migrants to Australia from New Zealand was mainly driven by increased departures of New Zealand born in particular, with arrivals from Australia remaining relatively stable over the last 10 years.

Overall, analysis of migrant flows across the different skill levels over the last decade indicates that New Zealand gained a significant amount of migrants at the highly skilled level. The other three skill categories, however, have experienced a net outflow over the last 3 years.

* The views expressed are those of the authors and do not represent the official position of the Department of Labour

This analysis suggests that, although the recession of 2008–09 led to a fall in employment in New Zealand, migration continued to play an integral role in supplying the required labour for the New Zealand labour market. A recent OECD report addressed the impact on migration flows and related issues of immigration policy responses by many countries to the latest economic crisis (OECD, 2009). This report highlighted the development of the “Essential Skills Policy” in New Zealand. The duration of the temporary work permit varied according to the skill level of the occupation and longer permit periods were provided for highly skilled workers.

The remaining paper is organised as follows. In Section 2, the methodology used to analyse the occupational migrant flows, the data sources used and their strengths and limitations are discussed. Section 3 presents the analysis of the PLT migration datasets to quantify the role occupational migration has played in the New Zealand labour market. Section 4 compares the inflows of skilled migrants into New Zealand with new or additional employment growth for the four skill categories. Section 5 discusses the changing origins of occupational migrants to New Zealand over the last 5 years, and Section 6 concludes with some of the key findings.

2. Methodology

This paper analyses the skills of recent migrants and estimates how much migration has contributed to employment growth in New Zealand over the last decade. First, migration and employment data is aggregated to four skill groups to provide an internationally comparable analysis of the data.

The total net arrivals of migrants are then compared to the employment growth for these skill categories in an attempt to quantify the role migration played in employment growth over the last decade.

Data sources

Five data sources were used to analyse the flow of migrants and immigration’s impact on the New Zealand labour market. These included data from: (i) the 2006 Census of Population and Dwellings; (ii) permanent and long-term migration flow data from Statistics New Zealand; (iii) permanent and long-term migration data from the Australian Bureau of Statistics; (iv) occupational employment estimates from the Department of Labour; and (v) approved residency applications data from Immigration New Zealand.

Aggregation of occupations

The analysis in this paper relies on grouping the migration flows data into four skill groups. A description of these skill groups and the occupations that are aggregated to create the four groups is presented below. The four skill groups into which the data is aggregated to are referred to as highly skilled, skilled, semi-skilled and elementary. These four groups were chosen as they allow for a comparable analysis of both historical employment growth and migration

flows, which are unavoidably from different data sources. These four skill groups are not expected to be exact but have enabled a comparative analysis to be carried out to gain some insights.

The highly skilled occupational group includes legislators, administrators and managers, and the professionals’ occupational groups to be consistent with the NZSCO 1999¹ occupational classification in use until 2007 and the managers and professional groups according to the ANZSCO 2006² occupational classification in use by Immigration New Zealand since 2007. The aggregation of these occupational groups is based on the premise that higher levels of skills are required by people employed in occupations within the 1 and 2 categories at the 1-digit level, with most of them possessing a bachelor’s degree or higher.

Table 1: NZSCO 99 and ANZSCO 06 1-digit occupational classifications

NZSCO 1999	ANZSCO 2006
1. Legislators, administrators and managers	1. Managers
2. Professionals	2. Professionals
3. Technicians and professionals	3. Technicians and trades workers
4. Clerks	4. Community and personal services workers
5. Service and sales workers	5. Clerical and administrative workers
6. Agricultural and fishery workers	6. Sales workers
7. Trades workers	7. Machinery operators drivers
8. Plant and machine operators and assemblers	8. Labourers
9. Elementary occupations (including residuals)	9. Residual categories (operational codes only)

Source: Statistics New Zealand.

Table 2: Occupational groupings for the different skill groups

Occupation classification	NZSCO 99	ANZSCO 06
Highly skilled	1 and 2	1 and 2
Skilled	3 and 7	3
Semi-skilled	4, 5 and 6	4, 5 and 6
Elementary	8 and 9	7 and 8

Source: Statistics New Zealand.

¹ NZSCO 1999 – New Zealand Standard Classification of Occupations, 1999.

² ANZSCO 2006 – Australia and New Zealand Standard Classification of Occupations, 2006.

At the lower end of the skills spectrum, the elementary skilled occupational group includes plant and machine operators and assemblers, along with other elementary occupations including labourers on the basis of the NZSCO 1999 classification. Under the ANZSCO 2006 classification, once again, elementary skilled workers include machinery operators, drivers and labourers.

The skilled occupational group includes technicians and other associate professionals along with trades workers according to the NZSCO 1999 classification and technicians and trades workers according to the ANZSCO 2006 classification.

Finally, the semi-skilled occupational group includes clerks, service and sales workers, and agriculture and fishery workers according to the NZSCO 1999 classification and community and personal service workers, clerical and administrative workers, and sales workers according to the ANZSCO 2006 classification.

Tables 1 and 2 above present the occupational groupings included at the 1-digit level according to NZSCO 1999 and the subsequently implemented ANZSCO 2006 occupational classifications. The corresponding occupational codes are used to create consistent skill categories using the appropriate 1-digit occupational groupings.

These skill groups are used mainly to provide a proxy measure of the skills migrants bring with them. Grouping the occupations at the 1-digit level into these four skills categories also means that migration data can be compared with the historical employment figures.

Migration data constraints and assessments

Upon arrival/departure to/from New Zealand, all persons are required by law to fill out a migration card. One of the questions on the card requires the migrant to provide a description of his/her current occupation.

This data, along with the location the migrant has arrived from or is planning to travel to, is then processed by Statistics New Zealand to track the flows of migrants over time. Based on how long the migrant plans to stay in New Zealand for or leave, the migrant is then classified as either a short-term migrant (if he/she intends to stay or leave in less than 12 months) or a PLT migrant (if he/she intends to stay for or leave in 12 months or more).

When using the PLT migration data to assess the flows of migrants, a number of caveats must be considered.

Three main data limitations identified concerning the use of PLT migration statistics are:

- migrants changing their intentions concerning how long they intend to stay in New Zealand for or leave (category jumpers)
- the occupation provided upon arrival or departure may differ from where migrants end up working in New Zealand
- a significant amount of migrants do not provide a description of their occupation

upon arrival into or departure from New Zealand due to their student status or because they are older dependents.

When using PLT migration data to assess migration flows, the first issue is 'category jumpers'. Category jumpers are described as people who state upon arrival/departure that they intend to stay/leave for less than 12 months and are classified as short-term migrants but then end up remaining/staying away for longer than 12 months (Glass and Choy, 2001). For a full description of the category jumpers phenomenon, and a list of potential solutions to resolve the issue, please refer to Glass and Choy (2001).

People arriving or departing New Zealand are also required to provide a description of their usual occupation on their arrival/departure card. Occupations provided were coded to NZSCO 1999 until 2007 by SNZ and since 2007 to ANZSCO 2006. An assertion that a new migrant actually works in the occupation specified in the arrival card after settling in New Zealand is, however, a major assumption of the analysis, as they may not be able to find employment in their preferred occupation or they may find better paid work.

Research conducted by International Migration, Settlement and Employment Dynamics (IMSED) at the Department of Labour has, however, indicated that approximately 60% of recent migrants surveyed worked in the same skill group as in their country of origin. Of the remaining 40%, approximately 25% were employed in a lower skilled occupation and 15% in a higher skilled occupation than in their country of origin (IMSED, 2009).

The third and most important issue is the level of capture and coding to occupations within the PLT migration dataset. Table 3 presents the level of coding for the PLT in New Zealand. From Table 3, it is clear that, within the PLT migration dataset, of the 88,251 PLT migrant arrivals in the 2008/09 period, approximately one-third (33% or 28,986) were coded to an occupation, 12% (or 10,800) were classified as 'response unidentifiable', meaning the migrant gave too broad a description for an occupation; 41,412 (or 47%) were classified as 'response outside scope, not applicable' and 7,053 (or 8%) were classed as 'not stated'.

At first impression, one could conclude that there is a relatively low level of coding to the occupation groups. Further analysis of the data revealed, however, that migrants classified as 'response outside scope, not applicable' consisted of children, students and those who had retired. Hence, migrants classified as 'response outside scope, not applicable' were reclassified as inactive or not in the labour force (NILF).

When reclassifying the migrants in the 'response outside scope, not applicable' group as not in the labour force for the 2008/09 period, the percentage of those coded to an occupation increased from 33% to 62% of PLT arrivals when considering migrants from all countries.

The level of such coding for PLT data between Australia and New Zealand, also covered in the analysis for this paper, were significantly higher and averaged between 80% and 85%.

Over the period of analysis, which covers the years 1992/93 to 2008/09, the level of coding has either improved slightly or has been stable at the levels reported above.

Census data and some of its limitations

An alternative data source for studying the characteristics of migrants in terms of their demographic profiles and levels of qualifications but not ideally suited for assessing the flow of migrants into and out of New Zealand is the Census. Census data provides estimates on the stocks of migrants in New Zealand every five years and can match where migrants have come from, how long they have been in New Zealand, their highest qualification, occupation or the industry they are working in (Haig, 2010).

The periodic nature of the 5-yearly Census data is, however, a major drawback for carrying out the migrant flow analysis required for this paper. Census data cannot be used to assess the annual flows of migrants by skill level between different countries for more recent periods (for example, post-2006 when the last Census was carried out) and over longer periods of time (i.e. more than 5 years).

However, Census data could be used in future as a benchmark to compare the results between total flows of migrants and a net apparent inflow suggested by the Census.

3. Migration analysis

Overview

This section analyses the arrivals, departures and net flows of migrants to New Zealand in total and from a selection of countries. The migrants' occupations have been grouped to the four skill categories discussed earlier.

Migrant arrivals classified to an occupation as a share of total arrivals

This section compares the share of the arrival of migrants classified to an occupation to total migrant arrivals for New Zealand and for a selection of other Western countries.

Table 3 below indicates that, as a share of the total migration, the United Kingdom reported the highest share of total arrivals classified to an occupation ³ at 56%.

³ The share of occupational migration as discussed in this report is calculated by dividing those arrivals reporting an occupation by total arrivals for a particular period.

Table 3: Arrivals reporting occupation as a share of total arrivals, 2008⁴

Country	Occupational migrant arrivals as a share of total arrivals
United Kingdom ⁵	56%
Canada	41%
Australia	41%
New Zealand	34%
United States of America	27%

Source: Statistics New Zealand, Citizenship and Immigration Canada, Office for National Statistics UK, Australian Bureau of Statistics, US Department of Homeland Security.

As a share of total arrivals, New Zealand has had a proportionally lower level of skilled migration at 34%. This indicates that around one-third of total inward migration in New Zealand is classified as occupational migration. Proportionally lower figures for New Zealand and for Australia at 34% and 41% respectively, is mainly due to a large proportion of overseas students arriving in recent years. Even lower figure for the US is due to a larger share of dependents, both young and old, being not in the labour force.

Migrant arrivals classified to an occupation as a percentage of employment

Next, the potential impact of occupational migration on employment is quantified by comparing total occupational arrivals by total employment in 2008. These estimates show that, as a share of total employment, New Zealand had one of the highest shares of occupational arrivals, at over 1.3%. For New Zealand, Australia and the UK, these figures included occupational migrants arriving under the residency program as well as the work permit scheme. In the case of the US and Canada, due to the absence of PLT type data, information from their respective permanent residency programs were used.

Table 4: Occupational migration as a share of employment, 2008

Country	Occupational migration as a share of employment
New Zealand	1.3%
United Kingdom ⁵	1.0%
Canada	0.8%
Australia	0.8%
United States of America	0.2%

Source: Statistics New Zealand, Citizenship and Immigration Canada, Office for National Statistics UK, Australian Bureau of Statistics, US Department of Homeland Security.

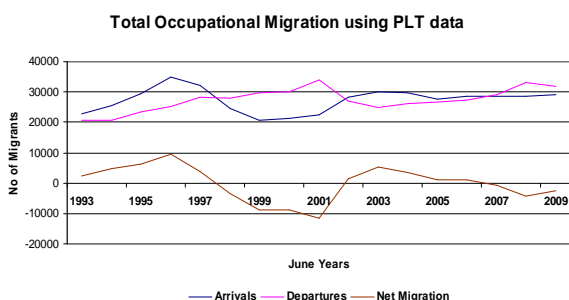
This higher dependence on migration to fill gaps within the labour market in New Zealand compared to

⁴ Note: occupational migration for the United States and Canada was calculated from permanent residency data

⁵ United Kingdom data is for the 2007 period

Australia and the UK in particular implies that New Zealand must compete more with these two traditional sources in particular to attract skilled migrants from as well as from the new sources of skilled migrants.

Occupational Migration across skill levels



The total occupational migration flows (arrivals, departures and net) are presented above which is not differentiated by skill levels. They are also grouped into periods of June years varying from single years (i.e. 2008 and 2009) to several years (i.e. 5-6 years) in the table below. This is to reflect net migration levels for these periods varying between -8,000 and + 5,000 and described as strong, medium or weak negative or conversely positive at varying levels.

This has been accompanied by a summarised analysis of the push and pull factors covering the economic factors (per capita income growth) and labour market drivers, both employment growth and unemployment rates for New Zealand compared with those for Australia and the UK (Please see Appendix 2 Tables).

Periods of June Years	Migration Levels	Pull & Push Factors Assessed/Summarised
1993-97	Strong Positive	Very Strong Pull & Push
1998-01	Strong Negative	Negative Pull/not offset by Push
2002-07	Weak Positive	Strong Pull & Push
2008	Medium Negative	Negative Pull & Strong Push
2009	Weak Negative	Negative Pull offset by Push

During 1993-97, a combination of strong employment growth in New Zealand at about 3% per annum compared to about 1.9% in Australia and only 0.4% in the UK which also led to slightly lower (but still high) unemployment rates resulted in very strong pull & push factors leading to more than 5,000 net gain on average each year of those considered as occupational migrants.

Conversely, during the subsequent 3 year period (1998-2001) a significant drop in annual employment growth in New Zealand to about 1% per annum but steady growth in Australia and the UK resulted in a net loss of about 8,000 occupational migrants due to negative pull factors not offset by push factors overseas.

More recently in 2008, there were strong negative pull factors along with strong push factors overseas leading to a medium level of net outflow at about 4,000

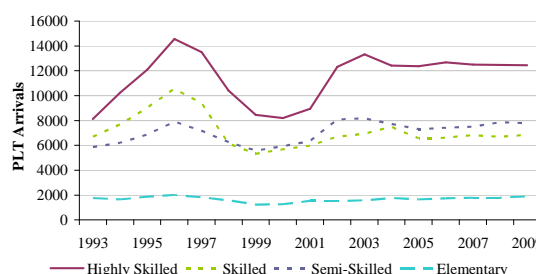
followed by even lower net outflow at about 2,500 in 2009 June year when departures of New Zealand citizens in particular declined but arrivals rose slightly. The period in between (2002-07) included strong pull and push factors but not to the same extent as during 1993-97.

Migration flow analysis by skill levels

In this section, the skill composition of arrivals, departures and net flows are analysed. The flows of migrants between New Zealand and Australia and the migrant flows of New Zealand citizens are both assessed separately and independently. It was not possible to differentiate the New Zealand citizens into those who were born in New Zealand and those who were born in overseas countries due to the absence of occupational information in this type of decomposition.

Skilled PLT arrivals

Figure 1: Skill distribution of PLT arrivals, 1993-2009



Source: Statistics New Zealand

Table 5: Skill shares of PLT arrivals, 1993-2009

Year	2005	2006	2007	2008	2009
Highly Skilled	44%	45%	44%	43%	43%
Skilled	24%	23%	24%	23%	24%
Semi-Skilled	26%	26%	26%	27%	27%
Elementary	6%	6%	6%	6%	7%

Source: Statistics New Zealand

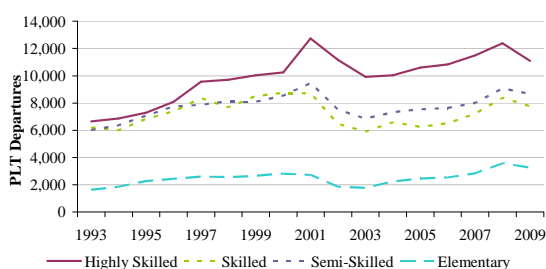
Figure 1 above presents the skilled arrivals to New Zealand from all countries for the period 1993-2009. Key points from Figure 1:

- Inflows of skilled migrants at all the skill groups have been relatively unchanged for the past 6 years in terms of the relative levels of skill categories, with just over 12,000 people on average arriving in the highly skilled group, around 7,000 in the skilled group, just under 8,000 in the semi-skilled group and just under 2,000 in the elementary skilled group per annum.
- The large inflows of migrants at the highly skilled level are to be expected given the main focus of the immigration policy, related to the Residency program in particular, being on attracting skilled migrants. The impact to some extent of the Asian Economic Crisis, which began

in 1997, and the consequence of the impact of the weaker pull and stronger push factors on migration (employment growth was slowing down and the unemployment rate was rising) is also seen in Figure 1. A significant decrease in the number of arrivals across all the skill groups was observed during 1997–1999.

Skilled PLT departures

Figure 2: Skill distribution of PLT departures, 1993–2009



Source: Statistics New Zealand

Figure 2 presents the skilled permanent and long-term departures from New Zealand for the period 1993–2009. Key points from Figure 2:

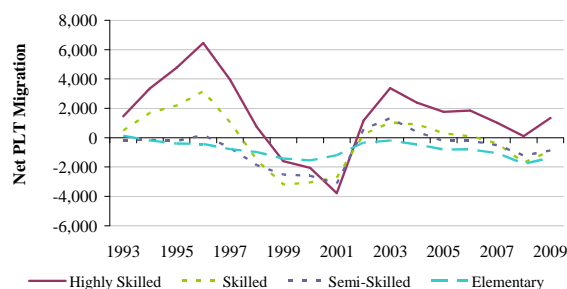
- The skill distribution of those departing New Zealand has changed over time – people leaving New Zealand are currently more likely to be highly skilled in 2008/09 than in 1993/94. This can be explained by the higher proportion of highly skilled workers in the overall population as well as the higher demand.
- Permanent and long-term departures of all four skill groups increased steadily during the 1993–2009 period except for a trough in 2003 offsetting this trend.
- The largest share of departures has been in the highly skilled category, with more than 12,000 departing in the 2007–08 period.
- Departures of those in all the skill categories dropped off in the 2008–09 period, which is likely due to the recession across the world and New Zealanders in particular deciding to stay at home rather than being overseas.

Net PLT migration

Figure 3 covers the total net flows of permanent and long-term migrants across all the skill categories for New Zealand during 1993–2009. Key points from Figure 3:

- Between 1998 and 2002, the New Zealand labour market experienced a net outflow of migrants across the four broad skill groups. This was argued to be causing a ‘brain drain’ in New Zealand, (Glass and Choy, 2001).

Figure 3: Skill distribution of net PLT migration, 1993–2009



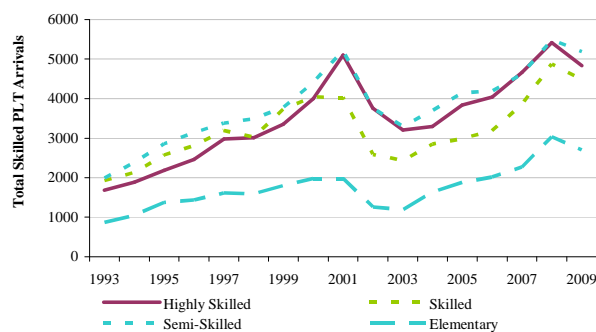
Source: Statistics New Zealand

- Over the last 8 years, only the net flows of highly skilled permanent and long-term migrants have been consistently positive, with New Zealand experiencing a net loss across the other three skill categories to the rest of the world.
- At the semi-skilled level, New Zealand experienced a large net outflow of migrants in the mid to late 1990s, a net inflow between 2002 and 2004 and a net outflow again from 2005 to the present.
- The increase in departures across all four skill categories from 2003–2008 along with relatively stable arrivals resulted in a small net inflow or net outflow of migrants for all the three skill groups with the exception of the highly skilled group.

Total PLT migration outflows between Australia and New Zealand

The PLT flow data between Australia and New Zealand indicates that New Zealand experienced an outflow of migrants at all different skill groups in each of the past 15 years. This outflow of migrants from New Zealand to Australia reached a peak in 2000/01. Figure 4 below suggests that another peak of an even larger magnitude was reached in 2007/08 with some reversal during 2008/09. However, it may take some time to verify if this trend resumes or not.

Figure 4: Total PLT migration (outflows) from New Zealand to Australia, 1993–2009



Source: Statistics New Zealand

The largest and most significant outflow of permanent and long-term migrants to Australia has been at the highly skilled, skilled and semi-skilled levels, with significantly less migrants categorised at the elementary skilled level departing to Australia.

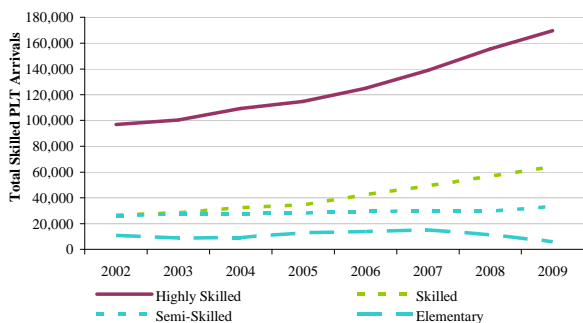
The outflow of migrants from New Zealand to Australia was even higher at the skilled and semi-skilled levels compared to the highly skilled level during the late 1990s. While the level of skilled migrant outflow has dropped off a little since 2000, the semi-skilled migrants has kept up or exceeded the highly skilled category of migrants.

PLT arrivals in Australia

The level of migrants reporting an occupation, at about 150,000 in total, was considerably higher (Figure 5) compared to about 30,000 in New Zealand, even in 2002. However, the Australian figure rose to over 250,000 in 2009 especially due to the significant growth in the number of people arriving in Australia at the highly skilled level.

The migrant inflows at the highly skilled level rose from about 100,000 in 2002 to over 160,000 in 2009. While the overall New Zealand figure in 2009 was still 30,000, the trends are similar in New Zealand as well in that there has been significant growth in the highly skilled occupational group and less so at the other three levels over the last decade. The skilled occupational group has also experienced strong growth in Australia by rising from 20,000 to 60,000 between 2002 & 2009.

Figure 5: Total Australian PLT arrivals by skill group, 2002–2009



Source: Australian Bureau of Statistics

The relative shares of occupational migrants by skill category reported in table 6 suggests that about 60% were consistently highly skilled compared to about 45% in New Zealand (Table 5). The remaining occupational migrants were also mainly skilled (about 20-25%) or semi-skilled (over 10%) with very few considered to possess elementary skills.

Table 6: Skill shares of Australian PLT arrivals, 2007 - 2009

Year	2007	2008	2009
Highly Skilled	60%	61%	62%
Skilled	21%	22%	24%
Semi-Skilled	13%	12%	12%
Elementary	7%	5%	2%

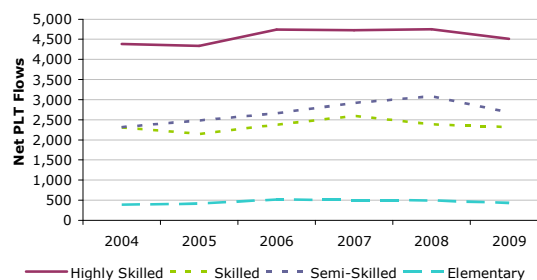
Source: Australian Bureau of Statistics

Similar information for New Zealand suggests about equal proportion (25%) of skilled and semi-skilled migrants.

Net skilled PLT migration to New Zealand excluding Australian and New Zealand citizens

In order to gauge the possible impact of the net flows of migrants (i.e. citizens) from other countries besides New Zealand (i.e. return migration) and Australia, the movements of New Zealand and Australian citizens were removed from this analysis. Over the last 5 years, New Zealand has had a steady net inflow of migrants from the rest of the world, when New Zealand and Australian citizens were removed.

Figure 6: Net PLT migration to New Zealand of citizens other than New Zealand or Australia



Source: Statistics New Zealand

Key points from Figure 6:

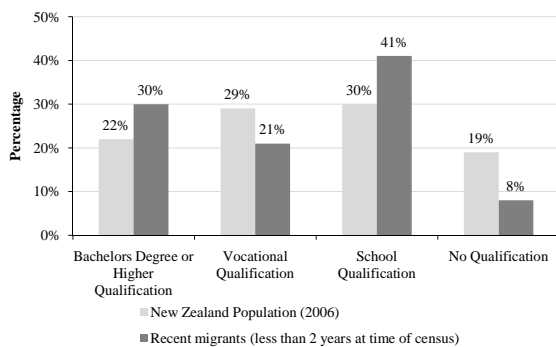
- New Zealand had significant positive net PLT migration across all four skill categories when the movements of Australian and New Zealand citizens were removed from the analysis.
- Net arrivals of migrants from the rest of the world excluding flows of Australian or New Zealand migrants have been relatively steady and flat over the last 5 years.
- Although Figure 4 showed that New Zealand was losing a significant amount of migrants to Australia, these net outflows are being replaced with migrants with similar or better skills from other parts of the world. Tables 12 and 13 shows the other sources of migrants to New Zealand where there is a net gain.

Qualifications of migrants compared to the New Zealand population

This section compares and contrasts the qualifications that recent migrants held at the time of the 2006 Census.

Figure 7 shows that, in general, migrants to New Zealand were slightly more skilled than the New Zealand population. Figure 6 also indicates that, at the time of the 2006 Census, 41% of recent migrants held a school level qualification compared to 31% for the rest of the New Zealand population.

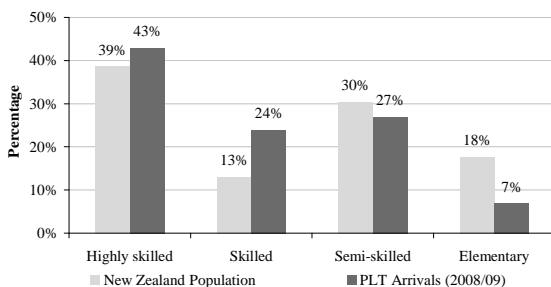
Figure 7: Highest qualifications – total New Zealand population compared to recent migrants, 2006



Source: 2006 Census, Statistics New Zealand

At the higher end of qualifications, however, recent migrants were at a higher level to the rest of the New Zealand population, with 30% and 22% respectively possessing a minimum of a bachelor's degree.

Figure 8: Skill distribution of recent migrants (2008/09) and the New Zealand population



Source: Statistics New Zealand

When comparing the occupations and associated skills of recent arrivals of migrants in the 2008/09 period with the rest of the New Zealand population in Figure 8 above, those arriving in New Zealand appear to be more skilled than those who were in New Zealand. Based on Figure 8, it is evident that recent migrants are much more skilled than the New Zealand population in general, with 43% of all migrants arriving in New Zealand on a permanent and long-term basis classed as highly skilled, compared to 39% of the New Zealand labour force.

Figure 9 below compares the skill levels of the New Zealand population to those who are part of total PLT departures, using their occupational groups. People who leave New Zealand tend to have a higher level of skills than those surveyed within. The difference in the skill levels of emigrants, however, is not as pronounced as for the immigrants – compared to the entire population, emigrants in the highly skilled and elementary skilled level were 3% and 7% lower.

Figure 9: Skill distribution of people leaving New Zealand (2008/09) and the New Zealand population



Source: Statistics New Zealand

Skill distribution of people leaving for Australia

Next, the skill flows of those departing to Australia from New Zealand are compared and contrasted with the New Zealand population. Figure 9 below suggests that migrants leaving for Australia tend to be lower skilled than those in the New Zealand population. Nevertheless, even this level of loss of slightly lower skilled migrants to Australia is still a concern for New Zealand due to the significant costs of training these individuals that is borne by the New Zealand taxpayer.

Figure 10: Skill distribution of departures to Australia (2008/09) and New Zealand population



Source: Statistics New Zealand, PLT data and HLFS results

4. Contribution of new migrants to recent total employment growth in New Zealand

Recent total employment growth

The level of growth in total employment demand across the different skill groups has varied between 2004/05 and 2008/09. Over the last 5 years, the largest absolute growth in total employment demand was at the highly skilled level, with an estimated 53,000 demand in 2005/06 and declining to about 21,000 in the 2008/09 period. The peak total demand for the skilled category was about 36,000 in 2004/05 which declined dramatically to under 2,000 in 2008/09. The demand for the semi-skilled category fluctuated between about 10,000 and 27,000 during this period and for elementary skills declined from over 17,000.

⁶ The skill composition of PLT arrivals to the rest of the world is based on departure cards, while the skill composition of the New Zealand population is based on employment by occupation from the Household Labour Force Survey.

Table 7: Total employment demand⁷ across the different skill categories, 2004/05–2008/09

Employment growth by skill group	2004/05	2005/06	2006/07	2007/08	2008/09
Highly skilled	21,344	53,552	40,715	32,470	21,482
Skilled	35,896	22,472	28,605	-898	1,900
Semi-skilled	23,156	10,749	13,830	27,354	10,653
Elementary	17,635	1,937	-7,003	-5,576	5,601

Source: Statistics New Zealand and Department of Labour estimates.

Table 8 compares total migrant arrivals from all countries reporting occupations at the highly skilled level with corresponding total employment growth.

Table 8: Highly skilled total employment growth and net new highly skilled migration, 2005–2009

Employment growth by skill group	2004/05	2005/06	2006/07	2007/08	2008/09
Highly skilled employment growth (annual)	21,344	53,552	40,715	32,470	21,482
Net new Highly skilled arrivals	4,333	4,739	4,725	4,754	4,511
Contribution	20%	9%	12%	15%	21%

Source: Statistics New Zealand & Department of Labour estimates.

A sizeable share of total employment growth at the highly skilled level over this period was filled by highly skilled net new migrants requiring either a residency permit or skilled work permit. This analysis takes into account the fact that some of the new migrants would have filled vacancies created by workers (i.e. New Zealand citizens and residents) leaving their positions to migrate themselves! The new migrants' share of the growth in total highly skilled positions varied between about 10% and 20%.

The number of net new migration at the skilled level has been relatively steady at about 2,500 in comparison to total net new migration, and total employment growth has been volatile for this group over the last 5 years (Table 9).

Table 9: Skilled total employment growth and net new skilled migration, 2005–2009

Employment growth by skill group	2004/05	2005/06	2006/07	2007/08	2008/09
Skilled employment growth (annual)	35,896	22,472	28,605	-898	1,900
Net new skilled arrivals	2,147	2,378	2,594	2,383	2,317
Contribution	6%	11%	9%	-	-

Source: Statistics New Zealand & Department of Labour estimates.

The skilled occupational group experienced significant decline in total employment demand growth between 2007 and 2009 but migrants may not be surplus to requirement when the replacement workers required,

⁷ This total employment growth covers new positions being created as well as those being replaced due to retirement, migration and other reasons.

who may have migrated themselves some possibly to Australia, are taken into account.

At the semi-skilled occupational level, migration has played a significant role in providing labour to the New Zealand labour market. Between June 2008 and June 2009, total employment demand growth declined by more than 16,000 in the semi-skilled group, but there were consistently about 2,500 net new PLT migrants arriving on average over this 5 year period (Table 10).

Table 10: Semi-skilled total employment growth and net new semi-skilled migration, 2005–2009

Employment growth by skill group	2004/05	2005/06	2006/07	2007/08	2008/09
Semi-skilled employment growth (annual)	23,156	10,749	13,830	27,354	10,653
Net new Semi-skilled arrivals	2,483	2,662	2,916	3,082	2,679
Contribution	11%	25%	21%	11%	25%

Source: Statistics New Zealand and Department of Labour estimates.

Table 11 below indicates that the elementary skilled group experienced a significant decline in total employment growth between 2005 and 2008 but recovered somewhat in 2009. Net new migrant PLT arrivals for the elementary skilled group, however, remained relatively low and steady at about 500 on average over this 5 year period.

Table 11: Elementary skilled level total employment growth and net new migration, 2005–2009

Employment growth by skill group	2004/05	2005/06	2006/07	2007/08	2008/09
Elementary skilled employment growth (annual)	17,635	1,937	-7,003	-5,576	5,601
Net new elementary skilled arrivals	414	514	500	490	430
Contribution	2%	27%	-	-	8%

Source: Statistics New Zealand and Department of Labour estimates.

In summary, the above analysis suggests the following in terms of the growth in total employment demand by the four skill groups (including replacement) and the migrants' share when assessed by total PLT arrivals:

- a) The total employment demand growth by skill levels varied considerably across the four skill groups. The highly skilled group grew in numbers in all 5 recent years studied. But fluctuated between an annual growth of above 21,000 in 2009 and more than 53,000 in 2006. Employment in the skilled group grew significantly in earlier years by between about 22,000 and 36,000 but declined in recent years. New employment growth for semi-skilled group experienced greater fluctuations both rising and falling but at much smaller magnitude – less than 28,000 and often around 11,000.

- b) The net new migrant flows focused on those requiring one form or other immigration approval (i.e. residency and work permits) suggested reasonably steady inflows of migrants for each skill group, sometimes unrelated to the levels of total employment growth. However, this analysis also focused on total demand being created taking into account the fact that new migrants were also replacing workers who were emigrating.
- c) Net flows measured by PLT arrivals and departures of new migrants approved by the Immigration Service varied somewhat across the four skill groups. About 4,500 highly skilled, about 2,500 skilled and semi-skilled each and often less than 500 elementary skilled workers arrived in each of the past 5 years. This is in line with the New Zealand immigration policy and the operational focus, as regards residency, on higher skilled migrants.
- d) In terms of their contribution to total employment growth, migrants played an important role across all the four skill groups. The dependence on migrants for meeting total employment growth was somewhat similar across the highly skilled, skilled and also the semi-skilled groups compared to lower skill groups.

5. Changing source countries of migrants

The origins of migrants have also changed over the last decade. Historically, Australia and the United Kingdom have been the two main sources for migrants to New Zealand. However, recent figures have indicated that the United Kingdom, in particular, is becoming relatively less significant in terms of the level and shares. Countries such as China, South Africa and India in particular, and also Fiji and Sri Lanka, are registering increasing numbers of approved residency applications and have become an important source for migrants.

Table 12: Successful residency permits for selected countries, 2004/05–2008/09

Approved residency applications	2004/05	2005/06	2006/07	2007/08	2008/09
China	1,154	2,128	2,109	2,409	2,409
Fiji	316	297	451	527	621
Great Britain	4,546	4,341	3,564	2,782	2,088
India	963	961	884	854	886
South Africa	940	1,088	1,019	1,078	1,386
Sri Lanka	44	50	82	94	158
Zimbabwe	217	94	70	98	137

Source: Department of Labour.

Table 12 presents the number of residency applications approved for these countries over the last 5 years. The number of residency applications for migrants from China has more than doubled since 2004/05, offsetting

some of the decrease in applications received from Great Britain, which has more than halved.

Approved applications from South Africa have also seen increases over the last 5 years, while approved applications from India have declined somewhat.

Table 13: Total PLT arrivals for selected countries, 2004/05 – 2008/09

Country	2005	2006	2007	2008	2009
Fiji	2,808	2,590	2,786	3,109	2,768
China, People's Republic of	4,102	4,271	4,207	4,993	5,982
India	2,569	2,743	4,232	5,923	6,888
Sri Lanka	269	283	385	587	481
United Kingdom	22,013	22,695	19,381	18,655	17,391
South Africa	1,492	1,850	2,127	3,159	1,838
Zimbabwe	257	274	264	348	199

Source: Statistics New Zealand

Tables 12 and 13 together compare and contrast the different pathways to migration for those arriving from different source countries. When also considering those arriving with skilled work permits, in addition to the residency permits, the number for certain countries such as India and China, has risen quite dramatically especially in recent years.

6. Conclusion

Since the mid 19th century, migration has historically, played an integral role in supplying labour to the New Zealand labour market and has continued to do so in recent years. Migration and the international flow of skills throughout the world will become even more important in the future in supplying skills needs, as increasingly mobile workers, particularly those who are highly skilled, take advantage of international opportunities.

Occupational migration flows into New Zealand were equivalent to approximately 1.3% of the New Zealand labour force in 2008, which was the highest among the key Western countries analysed in this paper. This reiterates the dependence that the New Zealand labour market has had on migrants for skilled labour even though the number of migrants arriving has been small compared to Australia.

Comparing the skill levels of migrants, both arrivals and departures, most occupational migrant arrivals were in the highly skilled category (43%) in 2008/09, well above the total population classified as highly skilled (39%). However, the largest share of migrant (PLT) departures was also in the highly skilled category.

On a net basis, however, New Zealand has been gaining people mainly at the highly skilled level over the last 5 years, with much lower net flows recorded for the other three skill categories. The migrant (PLT) outflows between Australia and New Zealand continue to be high for the highly skilled, skilled and semi-skilled emigrants in particular, with peaks in 2001 and in 2008.

The combination of an ageing workforce and falling fertility rate will increase the need for migration to fill future skills needs. Although New Zealand's immigration policy has historically been focused towards attracting highly skilled migrants within the residency policy, the demand for work permits may also increase for lower skilled workers to fill roles traditionally shunned by New Zealand workers such as aged care and some other lower skilled occupations.

In conclusion, although New Zealand has been losing a significant number of skilled people to Australia over a long period of time, they were not just in the highly skilled category alone. They have also often been replaced or exceeded by migrants from other countries. Hence, New Zealand will continue to be reliant on inflows of highly skilled and lower skilled migrants. New Zealand's migration policy and various programmes targeting skilled workers had a major role to play here and continue to do so in an increasingly competitive global market for skills in the future.

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Appendix Table 1: Net PLT arrivals from all countries by skill levels, 2004–2009

Year	Highly skilled	Skilled	Semi-skilled	Elementary	Response unidentifiable	Response outside scope/not applicable	Not stated	Total all NZSCO99/ANZSCO06 occupations
2004	12,427	7,487	7,726	1,769	8,397	39,590	6,889	84,285
2005	12,372	6,562	7,302	1,649	10,171	35,172	5,911	79,139
2006	12,680	6,612	7,425	1,751	10,752	34,916	5,940	80,076
2007	12,503	6,824	7,502	1,787	10,812	37,173	6,099	82,700
2008	12,477	6,688	7,861	1,793	10,855	39,178	6,387	85,239
2009	12,448	6,848	7,791	1,899	10,800	41,412	7,053	88,251

Source: Statistics New Zealand.

Appendix Table 2: Assessment of the effects of some push/pull factors on occupational migration – New Zealand, 1993–2009

Periods of June Years	Occupational Migration Levels			Migration Levels
	Arrivals	Departures	Net	
1993-97	28,980	23,697	5,283	Strong Positive
1998-01	22,288	30,406	- 8,118	Strong Negative
2002-07	28,794	26,872	1,922	Weak Positive
2008	28,653	32,989	- 4,336	Medium Negative
2009	29,284	31,804	- 2,520	Weak Negative

Pull & Push Factors Assessed/Summarised	Per capita GDP growth			Employment Growth			Unemployment rates		
	NZ	Aus	UK	NZ	Aus	UK	NZ	Aus	UK
Very Strong Pull & Push	7.9%	3.2%	1.0%	3.0%	1.9%	0.4%	7.9%	9.2%	9.1%
Negative Pull/not offset by Push	-10.2%	-6.5%	0.4%	1.1%	1.9%	1.2%	6.8%	7.1%	5.9%
Strong Pull & Push	11.4%	9.4%	7.3%	2.8%	2.3%	0.9%	4.4%	5.5%	5.1%
Negative Pull & Strong Push	12.2%	16.8%	5.1%	1.1%	2.6%	1.1%	3.7%	4.2%	5.3%
Negative Pull offset by Push	-22.8%	-19.6%	-22.2%	0.5%	1.1%	-0.7%	5.0%	4.9%	6.8%

Periods of June Years	Migration Levels	Pull & Push Factors Assessed/Summarised
1993-97	Strong Positive	Very Strong Pull & Push
1998-01	Strong Negative	Negative Pull/not offset by Push
2002-07	Weak Positive	Strong Pull & Push
2008	Medium Negative	Negative Pull & Strong Push
2009	Weak Negative	Negative Pull offset by Push

Source: Department of Labour estimates using migration flow data and some relevant push-pull factors extracted from the OECD data available from the dX database for comparable periods.