

# Profile of migrants in the Wellington region

Including an analysis of growth scenarios

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# Profile of migrants in the Wellington region including an analysis of growth scenarios

## Executive Summary

### Overview

This purpose of this report is twofold: (1) it presents the profile of the Wellington region's migrant population; and (2) it looks at growth scenarios for the region out to 2031 and how many people would be needed to achieve that growth. If migrants were the main source of additional labour, the report finds a large gap between the requirements and current growth trends.

### Who are Wellington's migrants?

In this report migrants are defined as people living in the Wellington region who were born in a country other than New Zealand. Migrants are a diverse group of people in terms of country of origin, age, culture, education, time in New Zealand, skills, backgrounds and aspirations. Reasons for coming to New Zealand, and to Wellington in particular, may include work/career purposes, education, lifestyle, to join family and/or a partner, or as asylum seekers or refugees.

In 2013 there were 113,031 migrants in the Wellington region, or 23.2% of the population, compared to the national average of 18.0%. By 2031 the conservative projection of the migrant population in the region is 145,099 (27.1%).

In 2013, according to census data, key demographic characteristics of Wellington's migrants may be summarised as follows:

- 40.5% were from Europe; 26.4% from Asia; 13.2% from the Pacific Islands.
- 61.9% had been living in New Zealand for 10 years or more.
- 71.2% were in the 18-64 age group ('working age').
- 93.0% classed themselves as English speakers.
- 79.3% had at least one dependent child.

### Migrant contributions to the Wellington region

The migrant contributions to the region are summarised in Table E1 for 2013, and Table E2 for the trend between 2005 and 2014. The key characteristics relate to their education, income and employment. These figures show that migrants are relatively highly educated, skilled, and earning relatively high incomes, with a relatively low employment rate (the proportion of the workforce with employment).

Table E1 shows that migrants are significant contributors to the Wellington regional economy, representing 24.3% of people employed in 2013 and 27.8% of total income. A relatively large share of the migrant population was of working age (91.4% compared to 79.4% for the region), while the employment rate was lower for migrants (62.0% compared to 67.5%).

The average income scaled to the employment rate was \$47,730, 6.9% higher for working migrants than for the general population in 2013. Migrants had a relatively high rate of university

qualifications (34.8% compared to 28.1%) and accounted for 29.3% of people employed in the skilled occupations (managers and professionals).

**Table E1: Summary table of migrant contributions to the Wellington region, 2013**

|  | Migrant total | Share as defined and Wellington regional data where applicable            |
|--|---------------|---|
| Population   | 113,031       | 23.2% (share of regional total)   |
| People of working age (aged 15 plus)                         | 103,302       | 91.4% (share of total migrant population)<br>regional average 79.4%       |
| Employed (in full-time or part-time paid employment)         | 64,026        | 24.3% (share of regional total)   |
| Workforce employment rate                                    | 62.0%         | Regional average rate 67.5%<br>Migrants = 27.2% of the region's workforce |
| Employed in skilled occupations (professionals and managers) | 29,538        | 29.3% (share of regional total)   |
| Employed in target industries <sup>1</sup>                   | 13,545        | 23.0% (share of regional total)   |
| Total income   | \$4.3bn       | 27.8% (share of regional total)   |
| Average income scaled to employment rate                     | \$47,730      | 6.9% above the regional average   |
| University qualified   | 33,702        | 34.8% (share of total migrant population)<br>Regional average 28.1%       |

Note: All data relate to the population aged 15 and over with the exception of the total population.

**Table E2: Summary table of trends in migrant contributions to the Wellington region, 2005-2014**

|  | 2005     | 2014     | Change              |
|--|----------|----------|---------------------|
| Population   | 98,778   | 114,813  | 16,034 (up 16.2%)   |
| Population – share of region   | 21.4%    | 23.4%    | Up 2.0%             |
| People of working age (15 plus)  | 89,745   | 104,997  | 15,251 (up 17.0%)   |
| Employed (full-time or part-time paid employment)                                  | 55,167   | 65,133   | 9,966 (up 18.1%)    |
| Employed – share of region   | 22.7%    | 24.6%    | Up 1.9%             |
| Employed in skilled occupations (professionals and managers)                       | 23,216   | 30,328   | 7,112 (up 30.6%)    |
| Employed in target industries  | 12,325   | 13,697   | 1,372 (up 11.1%)    |
| Employed in target industries – share of region                                    | 21.7%    | 23.3%    | Up 1.6%             |
| Total income   | \$2.8bn  | \$4.5bn  | \$1.7bn (up 58.3%)  |
| Total income – share of region   | 24.2%    | 28.1%    | Up 3.9%             |
| Average income (total migrant earnings divided by migrant population aged 15 plus) | \$34,515 | \$45,001 | \$10,485 (up 30.4%) |
| University qualified   | 22,381   | 35,117   | 12,736 (up 56.9%)   |
| University qualified – share of total migrant population                           | 26.9%    | 35.6%    | Up 8.7%             |

Note: All data relate to the population aged 15 and over with the exception of the total population.

Table E2 shows the trend for the period 2005-2014 for the key factors shown in Table E1. There is shown to be relative growth in the migrant population, people of working age, people employed (share and absolute), people employed in target industries,<sup>1</sup> level of education and incomes.

Additional key characteristics revealed by the data relating to employment, qualifications and international students, a key source of skilled migrants are summarised here:

➤ **Employment**

- The strongest growth in numbers of employed migrants between 2005 and 2014 was from Asia, accounting for more than 60% of the total increase in employed migrants in the region.
- Asians and Pacific Islanders tend to have the lowest full-time employment rate for the first five years in New Zealand.
- The highest unemployment rate in 2013 was for migrants from Africa and the Middle East, and Pacific Islanders. Europeans had the lowest unemployment rate.

➤ **Skill levels and qualifications**

- Europeans and North Americans tended to arrive in New Zealand with the highest proportion of university qualifications of around 55% in both cases.
- Pacific Islanders were the least likely to have university qualifications.
- 46% of successful applicants to immigrate to New Zealand in 2013/14 were skilled migrants.<sup>2</sup>
- Migrants to the Wellington region in 2013/14 through the SMC with a job offer were predominantly from India and the UK.

➤ **International students in New Zealand**

- 23% of international students in New Zealand became New Zealand residents (2010 sample).
- 110,198 international students enrolled in New Zealand in 2014 – 62% went to Auckland, just 6% to Wellington.
- The five highest source countries for international students in 2014 were all Asian, led by China and India.
- The Wellington region attracted a falling share of international students to New Zealand between 2004/05 and 2013/14.

➤ **Net migration**

- The Wellington region had a negative net migration rate (permanent and long-stay arrivals and departures) between 2005 and 2014 with an average net outflow of 63 people per annum.

### **Growth scenarios and the implied employment shortfall**

Three growth scenarios out to 2031 based on sets of assumptions relating to investment in the economy<sup>3</sup> for the Wellington region are expected to result in between 35,900 and 76,700 additional FTEs (full-time equivalents) being required and an increase in regional GDP of between \$11.4bn and \$17.4bn (relative to the base year 2013).

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<sup>1</sup> Target industries in this report are those noted in the Wellington Regional Strategy (WRS) documentation as sectors targeted for growth. These are proxied in this report as manufacturing; information media and telecommunications (IMT); and professional, scientific and technical services (PSTS) sectors. They are also referred to as WRS focus sectors.

<sup>2</sup> The 'skilled migrants' entered the country through the Immigration New Zealand Skilled Migrant Category (SMC).

<sup>3</sup> BERL (2014) 'Growth scenarios for the Wellington region: Towards 2041', produced for the GWRC.

It has been demonstrated that in order to reach the employment levels required for each scenario to be achieved, after accounting for natural population growth and ongoing migration patterns, more people will be needed to be employed than are expected to be available in the region.

There is expected to be a shortfall of FTEs under all three scenarios, and if the shortfall is to be met by migrants, this implies a total immigration requirement of 50,000 to 150,000 by 2031.<sup>4</sup>

### **The focus for the Wellington region**

The performance of the Wellington region in key areas is central to the attraction and retention of migrants. In order to address an employment shortfall, it is important to understand the region's performance overall and also in comparison to the rest of New Zealand, as this information will be central to assessing the attractiveness of the region to migrants relative to the rest of the country.

This report finds that the main areas for concern or room for improvement in terms of the region's growth rates are with respect to population, regional GDP, GDP of the WRS target industries, earnings per person, attracting international students, and attracting and retaining migrants.

### **Finally...**

This report finds that for the Wellington region to achieve any of the economic growth scenarios, then a large element of the required employment growth must be from migrants. The shortfall is expected to be substantial unless significant changes are made to migrant flows – both attraction and retention, with the migrant profile data feeding into the understanding of both of these factors. It is clear that in order to address the shortfall that policy review and further research are required.

Further analysis of findings in this report will be undertaken. This will assist in understanding what role local government and WREDA (Wellington Regional Economic Development Agency) can best play in the attraction and retention of international skills and talent to meet future needs.

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<sup>4</sup> The exact numbers of migrants required cannot be confidently estimated because of too many unknowns, but even under the business as usual (BAU) scenario at least 21,500 new migrants would be required by 2031 in addition to those already forecast to arrive, bringing the total to over 50,000, and under the aspirational scenario the total new arrivals required by 2031 could exceed 137,000. Therefore a reasonable working range for policy-related discussions is to assume a requirement out to 2031 for the region of 50,000 to 150,000 total net immigration.



# 1 Introduction

## 1.1 Purpose of this report

This report presents an overview of the profile of the migrant population of the Wellington region and key contributions made by migrants to the Wellington regional economy. In this report migrants are defined as those people living in the Wellington region who were born in a country other than New Zealand. This covers a diverse group of people in terms of country of origin, age, culture, education, time in New Zealand, skills and backgrounds. The migrants will also have had varying reasons for coming to New Zealand, and to Wellington in particular, such as for work/career purposes, education, lifestyle, to be with family and/or a partner, or as asylum seekers or refugees.

This report looks at a selection of growth scenarios for the Wellington region out to 2031, using a report produced for the Greater Wellington Regional Council (GWRC) by BERL<sup>5</sup> in 2014, and assesses the gaps that there may be in terms of employment in order to achieve the growth outlined in those scenarios. Where natural population growth is not likely to meet the growth in employment required, migrants are a key source of labour and skills. If migrants were then targeted to fill those gaps, this report provides a broad-brush assessment of the numbers of migrants who it may be considered desirable to attract into the region.

## 1.2 Growth strategies and aspirations for New Zealand and for the Wellington region

This section sets out the strategic and policy context for this report. It introduces the relevant national framework and strategy, and the regional strategies, policies and action delivery activities relating to growth and to the role of migrants in that context.

At the national level, the Business Growth Agenda (BGA), which is the central government's economic framework and reviewed annually by the Ministry of Business, Innovation and Employment (MBIE), acts as a reference point for policy considerations in this document. The BGA<sup>6</sup> names six 'key inputs for growth' which are 'building' the following: exports; innovation; investment; natural resources; skilled and safe workplaces; and infrastructure.

Specific to migrants, from 1 July 2014 the central government replaced the existing Migrant Settlement Strategy with the New Zealand Migrant Settlement and Integration Strategy, 'a revised approach to successfully settle and integrate migrants in New Zealand'. The strategy 'places value on the economic contribution of migration and stresses the importance of the long-term integration of migrants in conjunction with successful initial settlement'. The newer strategy has resulted in changes in the way that the central government supports regional migrant attraction and retention activities. This has been driven by the central government's economic imperatives. Previously, regional migrant activities were largely delivered through the Migrant Settlement Strategy with operational support provided at a council level and this has been replaced by the opportunity to formalise a new arrangement between the region and government through a Regional Partnership Agreement (RPA).

With regard to the Wellington RPA, this arrangement is based on identifying Wellington's needs, aligning activities with the BGA and developing agreed operational requirements. The Wellington

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<sup>5</sup> Business and Economic Research Limited (BERL) is an economics-based consultancy located in Wellington, New Zealand.

<sup>6</sup> See for example, the 2015 BGA entitled 'The Business Growth Agenda: Towards 2025', page 7.

Regional Strategy (WRS) Committee will be the signatory on behalf of the region to any such agreement.

The RPA would look at addressing issues relating to supply of labour to the workforce; demand for labour; and 'people connections' which refers to the settlement and retention of migrants. Such an agreement would be developed in partnership with Immigration New Zealand, the WRS office and WREDA,<sup>7</sup> and involve other delivery agencies in the areas of migrant attraction and settlement. This report will assist in identifying and quantifying areas that require further attention if the region is to meet its growth aspirations. An action plan will be developed in conjunction with the review of the Wellington Regional Labour Market Strategy and RPA process.

The 'Wellington Regional Strategy: Internationally Competitive Wellington' was first developed and agreed in June 2007 and revised in 2012. It provides an overview of the opportunities that exist to lift the region's economic performance. The WRS also seeks improvement in the region's environmental, social and cultural performance.' Specific reference is made to skills and workforce development.

The 2012 revised strategy, the 'Wellington Regional Strategy 2012 – Growing a sustainable economy', states as its aim (p.6): 'The aim of the WRS is to build a resilient, diverse economy – one that retains and creates jobs (especially high value jobs), supports the growth of high value companies and improves the region's position in relation to the national GDP and national employment.' In order to achieve this aim there are six focus areas, which 'set out what councils and Grow Wellington<sup>8</sup> propose to do to support economic growth, and to build a resilient and diverse economy in the Wellington region' (*ibid.*, p.7). Focus area 4 is entitled 'Attracting business, investment and talent to the region' and the document states 'This focus area is about having a targeted approach to attracting businesses, potential investors, skilled migrants and students to the region.'

Informed by the Wellington Regional Strategy, there is the Wellington Regional Labour Market Strategy (WRLMS) which was adopted in 2007. The aims of the WRLMS (at the time of writing) are to:

- Improve productivity levels of the regional labour force and the work place.
- Increase participation rates and opportunities for youth, Māori, Pacific peoples, older people, migrants and people with disabilities.
- Increase job attraction and retention rates in key regional sectors.
- Meet future labour and skills needs as required.
- Diversify labour market opportunities in the region and support export-led growth.
- Encourage sustainable business growth in the region.

It has been noted that given changes in the nature and organisation of delivery agencies and other factors the strategy will need to be reviewed. This is proposed for early 2016.

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<sup>7</sup> WREDA is the Wellington Regional Economic Development Agency, which is the regional economic development agency established on 1 January 2015 with Wellington City Council and GWRC as stakeholders.

<sup>8</sup> Grow Wellington was the operational arm of WRS, and was merged into WREDA on 1 January 2015.

It is important to understand the issues and opportunities around the attraction, assimilation and experiences of migrants, so that the region can aim to provide the environment for them to maximise contentment and productivity, thereby benefiting both the migrants themselves and the region as a whole. This report looks at a range of key characteristics of the migrant population of the Wellington region and of the total regional population and provides data to feed into these activity areas. The analysis from this report will provide a basis to inform policy considerations and to feed into subsequent work.

### **1.3 Why focus on migrants?**

The Wellington region has a regular intake of migrants, and they form a significant section of the population, at 23.2% in 2013, a share which has been increasing and is expected to grow to 27.1% (at a conservative estimate, assuming no increase above the recent trends, as presented in section 2) out to 2031. Migrants therefore represent a significant and growing group, and this has implications for the productivity and prosperity of the region.

This report does not provide a full literature review of research in the area of migrant attraction, retention and contribution to the economy. It does however refer to some key literature that illustrates that there is a body of research showing why migrants are a desirable source of labour, how they contribute to the economy, and why that is one way to fill the employment gap. The reader may also find a number of related references within each of these papers exploring various aspects of the migrant contribution, and the issues of attraction and retention.

This section aims simply to cite some key publications and findings that support the assumption that sourcing and retaining migrants is a reasonable proposition in order to achieve growth targets. Some examples are as follows:

Moretti (2012) in 'The New Geography of Jobs' states: 'communities that can attract skilled workers and good jobs tend to attract even more. Communities that fail to attract skilled workers lose further ground'.

Nana et al. (2009) in their paper for the Department of Labour on the economic impacts of immigration, focusing on the New Zealand economy, state the following:

In general, the results of the model scenarios found that increased immigration:

- reduces production costs
- improves the competitiveness of New Zealand goods and services, benefiting exports
- benefits domestic investment and/or consumer spending, depending on the skills composition of the immigration inflow
- results in higher revenues to government, which outweigh the impact on spending, so translate into an improvement in the balance of the government's accounts.

The four results listed above combine to improve both real gross domestic product (GDP) and real GDP per capita. (p.7)

The authors also state: ‘the inflow of immigrants at recent historical levels is estimated to be worth around \$1.9 billion per year to GDP and \$1,000 per capita GDP in 2021’ (*ibid.*, p.9). Therefore, their work finds that through immigration, total productivity increases and incomes increase across the board, benefiting everyone in that economy – both migrants and non-migrants.

Hodgson and Poot (2010), contributing to same series of working papers for the Department of Labour as Nana et al. (2009), namely the Economic Impacts of Immigration Working Paper Series, used data for the period 2005-2010 for New Zealand and found that:

Generally, we know that immigration generates more income for the native-born population collectively, and there is no extensive international evidence that the labour market outcomes of the native population are detrimentally affected overall. (p.vii)

McLeod et al. (2010) provide examples for New Zealand of the importance of migrants to the New Zealand economy: ‘between 2001 and 2006, more than half of New Zealand’s workforce growth came from permanent and temporary migrants’.

Turning to the importance of retention, and the related process of outmigration being a serious consideration, McLeod et al. (2010, p.1) state:

Nana and Sanderson (2009)<sup>9</sup> note that “a focus should be on the qualifications of migrants and their retention (i.e. ensuring they stay in New Zealand)”, also noting “the importance of further study to establish and understand the determinants of outmigration such as policy, migrant characteristics or the buoyant economy”.

It is also important to note that some lack of retention is not necessarily a failure, but part of an unavoidable process:

An early departure cannot always be viewed as a failure – the migrant may have achieved their migration objectives, and made a worthwhile contribution to both their employer and to the New Zealand economy in their time in New Zealand. Nevertheless, an early departure from New Zealand could be viewed as at best an underutilisation of that migrant’s skills and resources, and at worst a failure for the migrant, the employer and/or New Zealand itself. (McLeod et al., 2010, p.2)

In 2011 the New Zealand Department of Labour produced a study looking at the attraction and retention and importance of social cohesion. On page v of this study (cited in the references as Department of Labour, 2011), it states:

To manage the risks and realise the benefits of immigration it is critical that New Zealand is able to:

- attract and retain skilled immigrants
- ensure that immigrants’ skills and talents are used effectively to contribute to economic growth and development
- facilitate immigrant integration and ensure that social cohesion is not threatened.

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<sup>9</sup> Note that the McLeod et al. (2010) reference does not provide the full reference for Nana and Sanderson (2009), so it is not provided here. If the reader requires further detail, it is suggested that the original authors may be contacted.

Consequently, it is important to consider both New Zealand's receptiveness towards new migrants and the challenges that new migrants encounter during settlement in this country.

#### **1.4 Report structure**

This report firstly presents the statistical facts relating to the migrant population of the Wellington region, based on New Zealand census data, and where appropriate it puts these findings into the context for the region and the country as a whole. It then considers potential future economic growth scenarios for the region and how the migrant population may relate to future employment requirements. After stating the current situation, aspirations and expectations for the region, there is then a comparison of key characteristics presented for the region versus the country in order to gauge the region's performance. The structure of this report is as follows.

Section 2 of this report presents the recent trends in the population of the Wellington region and the migrant component of that total, and projects the trends out to 2031. This sets the context for section 3 which provides a profile of key attributes of migrants in the region, based on census data from 2006 and 2013 and fitted with a linear trend line to extend across the period 2005 to 2014. In particular, section 3 presents the profile of migrants in the Wellington region in terms of region/country of origin; the migrant categories and origins of skilled migrants; length of stay in New Zealand; age; income; employment – specifically rates and types of employment, sectors and occupations; educational qualifications; English-speaking ability; and the numbers of dependent children. The numbers of international students are also presented since they are also a significant source of migrants and in particular of skilled migrants.

Section 4 presents the migrant data set broken down by region/country of origin, taking a closer look at patterns of income, employment, English-speaking ability and university qualifications. Finally it presents data relating to international students enrolling in New Zealand, with some data only being available at the national level but nevertheless relevant for the Wellington region.

Section 5 presents three scenarios for the Wellington regional economy forecast for 2031 based on work by BERL carried out for the GWRC. Employment requirements and GDP are forecast for each scenario and broken down by industry sector. The population trends in the Wellington region out to 2031 are compared with the employment forecasts to see where the potential gaps may be in the availability of suitable labour. If filled with migrants, this has an implication for the numbers of migrants the region would need to attract and retain in order to fill those gaps and thus reach the growth rates set out in each scenario.

Given the identification of employment gaps in section 5, section 6 outlines key aspects of the Wellington regional economy and compares its performance to the rest of the country, specifically relating to population, GDP, income, employment, and the attraction and retention of migrants, including international students. These comparisons are important in understanding the attractiveness of the region to migrants and how Wellington is already performing relative to the rest of the country.

Each of the sections 2 to 6 provide a section summary of key findings and observations. Finally, section 7 provides an overview of the main points identified in the report. The profiling of the migrant data set, the identification of employment gaps under the selected growth scenarios, and

the relative performance of the Wellington region provide key data to inform policy discussions around the policy steps that may be taken to address desired changes in migration attraction and retention, including international students. The data and analysis in this report provide a defensible and reliable basis upon which to base further policy debate and research.

## 2 Population of the Wellington region and the migrant component

### 2.1 Regional population trends 2005-2031

This section presents an overview of the Wellington regional population in total and the migrant share for the period 2005-2014, and projections out to 2031. This provides context for the subsequent discussion about the composition of the population and migrant-specific considerations affecting their contribution to the regional economy over the recent period since 2005 and going forward.

Figure 1 and Table 1 show the migrant population as a share of the Wellington regional population over the period 2005 to 2031.<sup>10</sup> In 2006 according to the New Zealand census, migrants accounted for 21.6% of the region's population, at 100,560 of the regional total of 466,300. By 2013 this share was 23.2%, with 113,031 of the regional total of 486,700. Immigration New Zealand (2015, p.4) states that Wellington's share of people born overseas in 2013 was higher than the average for New Zealand of around 18%, but much lower than that of Auckland at 39%.

Figure 1 illustrates the trend of an increasing regional population and a rising share of migrants in that total. The total percentage increase is shown for each series over the full period 2005-2031. For the region as a whole, the total increase is estimated at 15.9%. Within this, the overseas-born population rises 46.9% compared to 7.4% for the New Zealand-born population.

Three years of data are presented in Table 1, showing past trends and forecasts, where 2014 is considered as the base year. The figures for the period 2005 to 2014 show the change over that decade, and the forecast is provided out to 2031. The data in Table 1 show that, of growth of nearly 30,000 between 2005 and 2014, 53.8% of this growth was due to net addition of migrants to the region, equating to 16,034 people, with 13,766 being New Zealand-born additions.

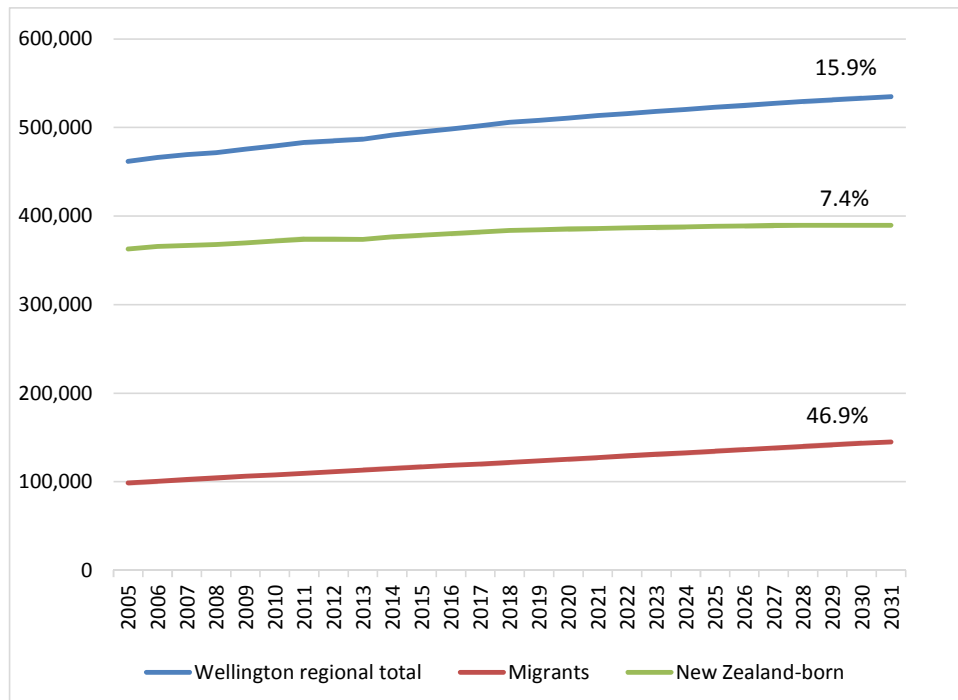
Based on past growth, the migrant share of the population is expected to increase to 27.1% by 2031, implying a fall in the New Zealand-born share to 72.9%. The absolute growth puts this into context – of the 43,500 additional population projected by 2031, 69.6% are expected to be due to net migration of overseas-born people (30,287 people) compared to just 30.4% from the New Zealand-born population (13,213 people). Therefore the migrant population is expected to increase by 26.4% between 2014 and 2031 while the New Zealand-born population is expected to increase by just 3.5% over the same period.

It should be noted that the author considers the migrant growth projections to be conservative and therefore the 26.4% projection could be an underestimate. Whatever the growth that eventuates, the data clearly show that migrants already represent a significant proportion of Wellington region's population and this proportion is expected to increase.

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<sup>10</sup> Total population data are sourced from Statistics New Zealand for the period 2005-2014, and the total population data going forwards are Statistics New Zealand predictions for 2018, 2023, 2028 and 2033 years, with linear trends for intermittent years applied by the author. Migrant data are sourced from the GWRC migrant tool, produced for the GWRC by BERL, which uses census data for 2006 and 2013. The data for the other historic years between 2005 and 2014 and out to 2031 are calculated according to that same linear trend. There are no official forecasts of migrant number arrivals and retention, so this is considered a reasonable estimate for the purposes of this report. The author considers that the estimates for migrant arrivals are conservative and likely to be higher than the figures suggested in this report.

**Figure 1: Wellington regional population – total, migrant and New Zealand-born, 2005-2031**



Sources: Statistics New Zealand; GWRC migrant tool; author's calculations

**Table 1: Migrant and New Zealand-born shares of the Wellington regional population, 2005, 2014 and 2031**

| Year                             | Population | Share of Wellington regional population | Net population change | Percentage change |
|----------------------------------|------------|---|-----------------------|-------------------|
| <b>Migrants</b>                  |            |   |                       |                   |
| 2005                             | 98,778     | 21.4%                                   |                       |                   |
| 2014                             | 114,813    | 23.4%                                   | 16,034                | 16.2%             |
| 2031                             | 145,099    | 27.1%                                   | 30,287                | 26.4%             |
| <b>New Zealand-born</b>          |            |   |                       |                   |
| 2005                             | 362,822    | 78.6%                                   |                       |                   |
| 2014                             | 376,587    | 76.6%                                   | 13,766                | 3.8%              |
| 2031                             | 389,801    | 72.9%                                   | 13,213                | 3.5%              |
| <b>Wellington regional total</b> |            |   |                       |                   |
| 2005                             | 461,600    | n.a.                                    |                       |                   |
| 2014                             | 491,400    | n.a.                                    | 29,800                | 6.5%              |
| 2031                             | 534,900    | n.a.                                    | 43,500                | 8.9%              |

Note: n.a. = not applicable

Sources: Statistics New Zealand; GWRC migrant tool; author's calculations

An interesting comparison is for New Zealand as a whole, which had 879,546 migrants in 2006 and 1,001,787 in 2013. Providing comparable data in Table 2 for New Zealand, the share of migrants in the New Zealand population was 20.9% in 2005, rising to 22.6% in 2014 and forecast to increase to 25.0% by 2031. Wellington therefore has a slightly higher proportion of migrants in its population than the country as a whole throughout the period 2005 to 2031.



**Table 2: Migrant and New Zealand-born shares of the New Zealand population, 2005, 2014 and 2031**

| Year                     | Population | Share of New Zealand population | Net population change | Percentage change |
|--------------------------|------------|---------------------------------|-----------------------|-------------------|
| <b>Migrants</b>          |            |                                 |                       |                   |
| 2005                     | 862,083    | 20.9%                           |                       |                   |
| 2014                     | 1,019,250  | 22.6%                           | 157,167               | 18.2%             |
| 2031                     | 1,316,121  | 25.0%                           | 296,871               | 29.1%             |
| <b>New Zealand-born</b>  |            |                                 |                       |                   |
| 2005                     | 3,271,817  | 79.1%                           |                       |                   |
| 2014                     | 3,490,450  | 77.4%                           | 218,633               | 6.7%              |
| 2031                     | 3,948,019  | 75.0%                           | 457,569               | 13.1%             |
| <b>New Zealand total</b> |            |                                 |                       |                   |
| 2005                     | 4,133,900  | n.a.                            |                       |                   |
| 2014                     | 4,509,700  | n.a.                            | 375,800               | 9.1%              |
| 2031                     | 5,264,140  | n.a.                            | 754,440               | 16.7%             |

Note: n.a. = not applicable

Sources: Statistics New Zealand; GWRC migrant tool; author's calculations

Understanding the likely picture for inflow and retention of migrants is important in the region's growth policy. As stated in section 1.3, part of the ability for the region to grow will depend on its ability to attract and retain more migrants, in particular skilled migrants. The types of migrants coming into the country and to the region in particular are addressed in the next section.

## 2.2 Section summary

Key statistics from this section are as follows:

- In 2013 there were a total of 113,031 migrants (23.2% of the regional population).
- The Wellington region has a higher share of migrants than the national average (18.0% in 2013).
- By 2031 the conservative projection of the migrant population is 145,099 (27.1% of the regional population).

This section has shown the share of migrants in the population of the country as a whole and of the Wellington region and how the shares are expected to grow. In the Wellington region with nearly a quarter of the population classified as migrants in 2014 and this share expected to rise to over 27% over the forecast period, this is a significant group of the population and a growing component. The following sections provide a profile of who these people are, showing the diversity with regard to their region of origin, how long they have been in New Zealand, and attributes including age, skill set, employment and income.

### 3 Profile of migrants in the Wellington region

As stated in section 1, migrants are defined as members of the population who were born overseas, i.e. not in New Zealand. The term 'migrant' therefore covers a wide range of diversity in many aspects of that population. In order to analyse the economic contributions of this portion of the population and how this can be optimised going forward, it is important to provide a profile of the migrant population. This section provides a basic profile of migrants in the Wellington region, presenting key characteristics.

Except where explicitly stated, the GWRC migrant tool<sup>11</sup> provides the data for section 3, based on census data from 2006 and 2013, and these data are extrapolated for the full 2005-2014 period. The actual figures for 2006 and 2013 are shown on the charts where appropriate, and the trend line fitted for the period 2005 to 2014.

It should be noted that the trends and analysis drawn from the data in the GWRC migrant tool are based on the numbers of people who responded to each relevant question in the census, and therefore the proportions and figures may not be exact representations of the whole migrant population. The analysis is therefore to be treated as indicative and informative only.

Key characteristics of the migrant population are analysed as follows:

- Region and/or country of origin
- Migrant category
- Number of years since arrival in New Zealand
- Age profile
- Income
- Employment – labour force status of migrants
- Industries of employment
- Occupations of migrants
- International students
- Educational qualifications
- English-speaking ability
- Numbers of dependent children

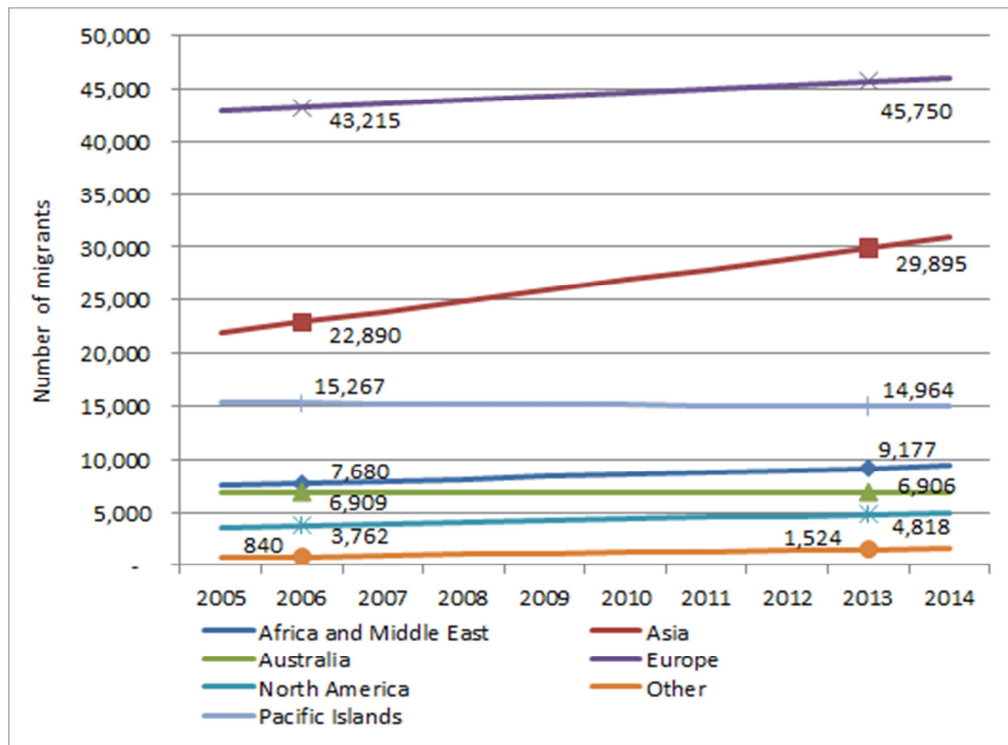
#### 3.1 Region and/or country of origin

Figure 2 shows the region (and in the case of Australia the country) of origin of migrants for the period 2005-2014, based on actual data for 2006 and 2013 and the trend line fitted for the 2005-2014 decade.

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<sup>11</sup> As noted in section 2, the GWRC migrant tool was developed by BERL and uses New Zealand census data for 2006 and 2013.

**Figure 2: Region/country of origin of migrants in the Wellington region, 2005-2014**



Sources: GWRC migrant tool; author's calculations

'Other' includes South America and a list of other countries with a small number of migrants, collated into the 'other' category.

Figure 2 shows that the largest group of migrants in the Wellington region is from Europe. The migrant tool does not offer a breakdown by country within Europe, it only provides the total for that region. As Immigration New Zealand (2015, p.4) states for the Wellington region in 2013, 'More than one third (32 percent) of the migrant population is from the United Kingdom and Ireland, which is similar to the rest of New Zealand (excluding Auckland) and a further quarter (26 percent) is from Asia.'

In 2013, the migrant tool shows that a total of 40.5% of migrants to the Wellington region were from Europe. While the numbers continued to climb through the period shown, the share fell, from 43.0% in 2006, as numbers of migrants from other regions of origin rose more quickly. In particular the share of Asians was 22.8% in 2006 and had risen to 26.4% by 2013. The share of migrants from Africa and the Middle East, and North America, has been rising although from a much lower base. The number of Pacific Islanders and Australians has been flat over the period and therefore the proportion has been falling.

Thus it can be seen that the composition of migrants in terms of the country or region of origin has been changing, with general trends towards a falling share of Europeans, Pacific Islanders and Australians and growing shares of people from Asia, Africa and the Middle Eastern, and North America.

### 3.2 Migrant category

People choose to leave their country of origin to live in New Zealand for a variety of reasons. According to Immigration New Zealand (2015), those people who wish to enter the country permanently must do so under one of the three following categories of the New Zealand Residence Programme (NZRP):

- Skilled Migrant Category and a range of business and investor migrant categories
- Family categories
- International (Pacific Access Category and the Samoan Quota) and Humanitarian (refugees)

In 2013/14, the largest share of NZRP applications was in the Skilled Migrant Category (SMC), at 46%. The family categories were second largest at 40%. Of those accepted under the SMC, 51% were principal applicants and 49% were secondary applicants.

A simple breakdown of the top 10 source countries of SMC principal applicants with a job offer in 2009/10 and 2013/14 in the Wellington region is shown in Table 3. The two years are shown to give an idea of trends from each source country. It should be noted that 78% of the SMC principal applicants approved for the Wellington region in 2013/14 were from these countries.

**Table 3: The top 10 source countries of SMC principal applicants in 2009/10 and 2013/14 with a job offer in the Wellington region**

| Source country | Number and share of total 2009/10 | Number and share of total 2013/14 |
|----------------|-----------------------------------|-----------------------------------|
| India          | 167 (14%)                         | 260 (27%)                         |
| UK             | 251 (21%)                         | 172 (18%)                         |
| Philippines    | 120 (10%)                         | 88 (9%)                           |
| China          | 102 (9%)                          | 71 (7%)                           |
| USA            | 51 (4%)                           | 45 (5%)                           |
| South Africa   | 129 (11%)                         | 38 (4%)                           |
| Ireland        | 30 (3%)                           | 33 (3%)                           |
| Fiji           | 54 (5%)                           | 22 (2%)                           |
| Malaysia       | 21 (2%)                           | 20 (2%)                           |
| Germany        | 40 (3%)                           | 13 (1%)                           |

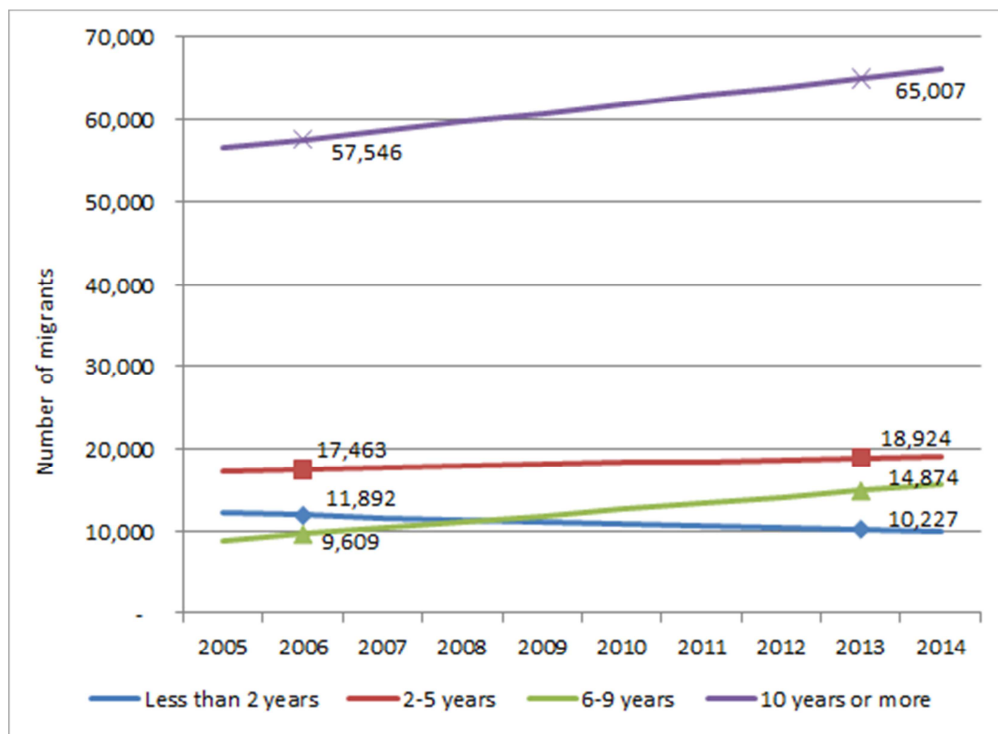
Source: Immigration New Zealand (2015), Table 5, p.14.

The most obvious changes over the period are that the UK has gone from being the largest source country to being second behind India, as a combined effect of India's numbers growing and those from the UK slowing. Numbers have also notably fallen from South Africa, with smaller falls from most other countries on the list.

### 3.3 Number of years since arrival in New Zealand

Figure 3 shows the numbers of years since arrival of migrants in New Zealand for the period 2005-2014 for the Wellington region, based on actual data for 2006 and 2013 and the trend line for 2005-2014.

**Figure 3: Numbers of years since the arrival of migrants into New Zealand, Wellington region migrants, 2005-2014**



Source: GWRC migrant tool; author's calculations

Figure 3 clearly shows that the majority of migrants in the region have been in the country for more than 10 years. In 2006, the share of migrants in the Wellington region who had been in the country for more than 10 years was 62.2% (of the migrants who answered this question in the censuses and excluding 'not elsewhere included' answers), and the share was marginally lower at 61.9% in 2013. Overall the trend appears to be towards longer-term migrants on average.

According to Immigration New Zealand (2015, p.4), 'Forty percent of Wellington's overseas-born population has been living here for 20 years or more.'

Over the period shown, there was a reduction in the number and share of migrants who had been in Wellington for less than two years. The share was 9.7% in 2013, down from 12.9% in 2006, and as Immigration New Zealand (2015, p.4) states, 'Wellington has a smaller number of most recent migrants (who have lived in Wellington for two years or less) than the rest of New Zealand (excluding Auckland).' The absolute number also fell, from 11,892 to 10,227.

The only group that saw an increase in both absolute and relative terms was of those who had been in New Zealand for 6-9 years. The share who had stayed for 2-5 years fell marginally from 18.9% to 18.0%, although in absolute terms there was an increase from 17,463 to 18,924.

The fall in the numbers of migrants in the 0-2 year category may seem counterintuitive given that the total number of migrants in 2013 was 12.4% higher in 2013 than in 2006 according to the migrant tool.

There are a few factors at play that may together explain this apparent contradiction in the figures showing falling recent arrivals, while the total trend is for rising numbers of migrants in the region. Firstly, Figure 3 has only 2006 and 2013 snapshots – it could be that immigration spiked in the interim years, for a range of reasons including changing immigration policy for students and impacts of the global financial crisis (GFC)<sup>12</sup> of 2007-2009, and by 2013 the people included in these spikes would have moved out of the 0-2 year category into the 2-5 and 6-9 year categories. These two possible factors are backed up in the MBIE (2015b) report entitled 'Labour market integration and retention of skilled migrants in New Zealand', November 2015, which refers to each of these points as follows:

The impact of awarding higher SMC bonus points for New Zealand post-graduate qualifications is clearly seen [...] 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. (*ibid.*, p.18)

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. (*ibid.*, p.iii)

Secondly, the data in Figure 3 exclude those in the census data who were 'not elsewhere included', i.e. there was no information about them. This figure was 4,053 in 2006 and 3,996 in 2013, thus accounting for over 4% of the total number of migrants in the Wellington region in those years. It is possible that a significant proportion of these people were in the 0-2 year category and that they were therefore not allocated to their appropriate category in the census.

Thirdly, it is possible that the total is buoyed by people staying longer in the region, i.e. higher retention rates contributing to the higher total migrant number.

It may be a concern for policy-makers that these figures suggest a retention issue for newer arrivals, even given the factors listed above that may explain the anomaly to some extent. Whatever the case, the 10,277 relatively new migrants in 2013 is a significant number of people arriving in the region.

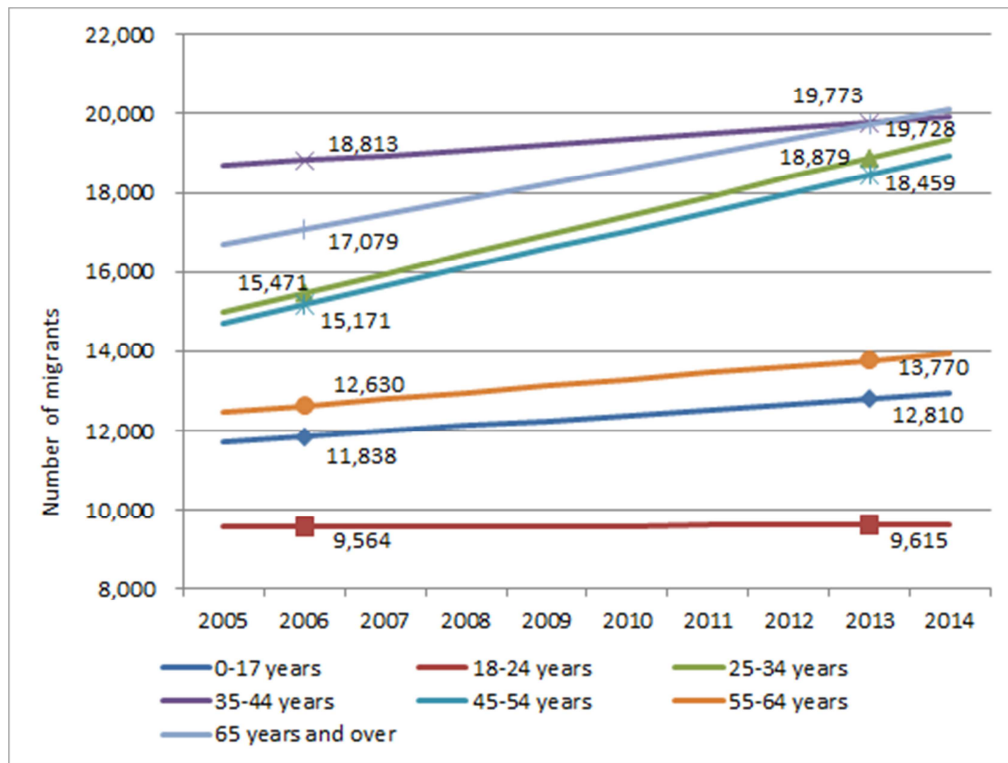
### 3.4 Age profile

Figure 4 shows the age profile of migrants for the period 2005-2014, based on actual data for 2006 and 2013 and the trend line for 2005-2014.

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<sup>12</sup> The global financial crisis (GFC) is also referred to as the 2007-08 financial crisis, and refers to the crisis believed to have begun in around July 2007 in the US, when a loss of confidence by US investors in the value of sub-prime mortgages caused a liquidity crisis. A credit crunch and loss of confidence ensued, and by September 2008, the crisis had worsened as stock markets around the globe saw sharp and sustained losses and became highly volatile. The economic downturn saw many countries go through several years of low or negative growth, i.e. recession. The end date of the GFC is not clear, and varies according to commentator and to country. In general it is referred to as a downturn for 2007-2009.

**Figure 4: Age profile of migrants in the Wellington region, 2005-2014**



Source: GWRC migrant tool; author's calculations

The working age migrants, assumed to be 18-64 years old, accounted for 71.2% of the total in 2006 and the same share in 2013, and in both years, the 35-44 year age group was the largest, followed by 25-34 and 45-54 years, respectively. In 2013, those aged 65 years and over accounted for 17.5% and those aged 17 years or younger were 11.3%.

It is clear from Figure 4 that all groups grew in size, with some groupings growing faster than others over the period shown. In the working age range, the numbers of migrants aged 25-34 and 45-54 grew more quickly than the groups in the 18-24, 35-44 and 55-64 year ranges. Outside the working age range, those aged 65 and over accounted for 17.5% in 2013 compared to 17.0% in 2006, a minor increase in share. Those aged 17 years and younger fell slightly from 11.8% in 2006 to 11.3% in 2013.

Figure 5 shows the age profile for the total Wellington regional population compared to migrants in the region for 2013. It shows that apart from the 18-24 year age group, the migrant population tends to have a higher percentage of people of working age. In 2013, 63.4% of the Wellington regional population were in the age range 18-64 compared to 71.2% for migrants.

**Figure 5: Age profile of the total Wellington regional population and migrants in the region, 2013**



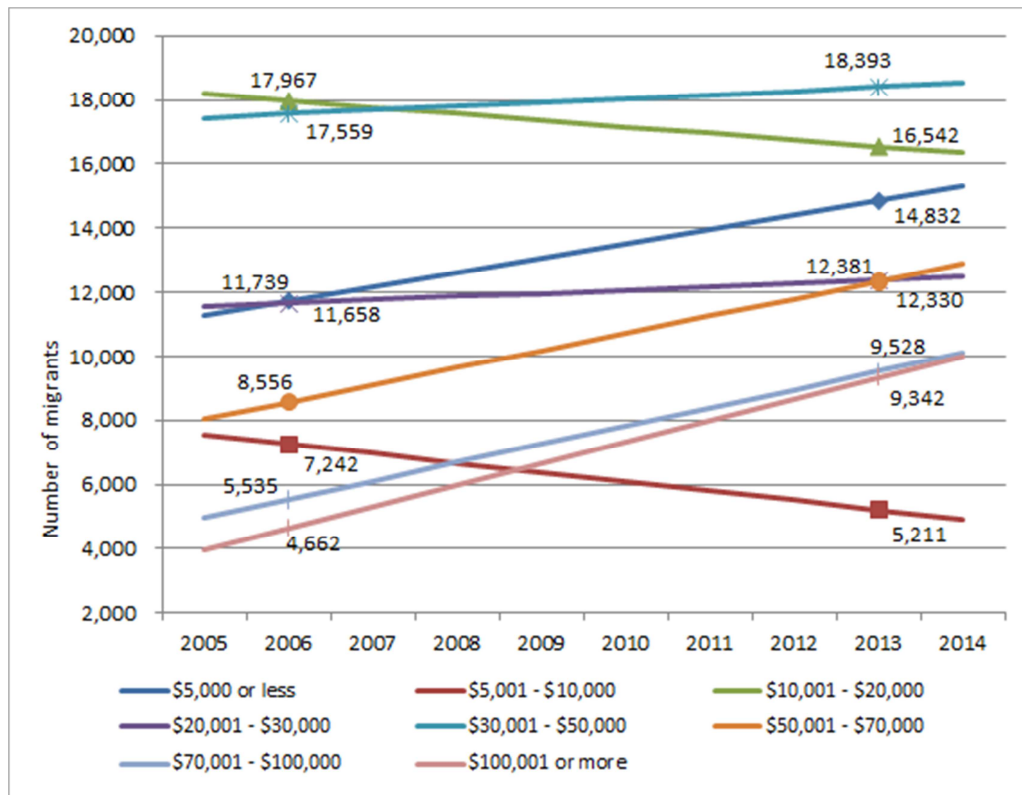
Source: GWRC migrant tool; author's calculations

### 3.5 Income

This section looks at the income levels of migrants. Figure 6 shows the income brackets of migrants for the period 2005-2014, based on actual data for 2006 and 2013 and the trend line for 2005-2014. All income data are in nominal terms and are for people in the age range 15 to 65.



**Figure 6: Income brackets of migrants in the Wellington region, 2005-2014**



Source: GWRC migrant tool; author’s calculations

Figure 6 shows that the largest proportion of migrants in 2013 earned in the \$30,001-\$50,000 bracket (17.8%). The second largest proportion earned \$10,001-\$20,000 (16.0%), and the next largest proportion earned \$5,000 or less (14.4%). In total 35.4% of migrants earned \$20,000 or less in 2013. Looking at the three highest earnings brackets of \$50,001 and above, this accounted for 30.2% of Wellington’s migrants.

Over the period shown there has been a strong upward trend in the numbers of migrants earning in the top brackets (above \$70,000), increasing from 10,197 in 2006 to 18,870 in 2013, up 85.1%.

Table 4 shows the estimated income totals for migrants in the Wellington region and for the total income for the region for the period 2005 to 2014. Data are from the GWRC migrant tool using Statistics New Zealand census data for 2006 and 2013, and a trend line applied. The census data provide numbers of people earning in each of the income brackets and the calculations have been made by assuming that the number of people in each bracket earn the average (mid-range) of that bracket. For those in the over \$100,000 bracket an income of \$150,000 is assumed. This gives an approximation which enables a broad picture to be formed as in Table 4.

The estimations in Table 4 show that migrants account for about one quarter of Wellington’s regional income, with the share increasing over the period, from 24.2% in 2005 to 28.1% in 2014.

**Table 4: Estimates of Wellington regional and migrant income, 2005-2014**

| Year | Migrant income (\$) | Wellington regional income (\$) | Migrant share of regional income |
|------|---------------------|---------------------------------|----------------------------------|
| 2005 | 2,845,768,929       | 11,760,105,000                  | 24.2%                            |
| 2006 | 3,030,112,500       | 12,235,500,000                  | 24.8%                            |
| 2007 | 3,214,456,071       | 12,710,895,000                  | 25.3%                            |
| 2008 | 3,398,799,643       | 13,186,290,000                  | 25.8%                            |
| 2009 | 3,583,143,214       | 13,661,685,000                  | 26.2%                            |
| 2010 | 3,767,486,786       | 14,137,080,000                  | 26.6%                            |
| 2011 | 3,951,830,357       | 14,612,475,000                  | 27.0%                            |
| 2012 | 4,136,173,929       | 15,087,870,000                  | 27.4%                            |
| 2013 | 4,320,517,500       | 15,563,265,000                  | 27.8%                            |
| 2014 | 4,504,861,071       | 16,038,660,000                  | 28.1%                            |

Source: Statistics New Zealand census data 2006 and 2013; author's calculations

Total income rose more quickly for the migrant group than for the total regional population between 2005 and 2014, at 58.3% and 36.4%, respectively. The pattern for average income is shown in Table 5. Average income in Table 5 is calculated as the average income across the population aged 15 and over. While migrants had a lower average income in 2005 than the average for the regional population, the growth rate between 2005 and 2014 was higher for migrants, and by 2014 the average migrant income is estimated to have almost reached that of the average person in the region. By 2014 the average migrant income was estimated to be \$45,001, compared to \$45,692 for the total regional population, and was therefore slightly below that average, with the total earnings divided by the total migrant population aged 15 and over.

**Table 5: Estimates of average Wellington regional and migrant income, 2005, 2013 and 2014**

|           | Average income (\$) |                           |
|-----------|---------------------|---------------------------|
|           | Migrants            | Total regional population |
| 2005      | 34,515              | 36,387                    |
| 2013      | 43,836              | 44,658                    |
| 2014      | 45,001              | 45,692                    |
|           | % change            |                           |
|           | Migrants            | Total regional population |
| 2005-2014 | 30.4%               | 25.6%                     |

Source: Statistics New Zealand census data 2006 and 2013; author's calculations

It should be noted that the average income data shown in Table 5 do not represent the average earnings of an employed migrant or employed person in the Wellington region, since census data are provided for income brackets, but these figures are not provided according to whether people are in paid work or otherwise.

The average income figure would be more reflective of the average income of working migrants if the employment rate was taken into account. There are accuracy issues with both approaches, due to limited data sources. The income brackets are selected by people who answered the census, and the data sets are not then linked across to show which of those people were working. Therefore there are two ways to show the calculations of average income presented here – firstly averaging

the total across all migrants aged 15 and over, and secondly by scaling according to the employment rate since most of the income will be to migrants who are working, and this is likely to give a better approximation to compare average income of working migrants with the general Wellington population. Neither average is exact, and further income data would be required to arrive at a more reliable approximation.

The 2013 figure for average income using the method in Table 5 gives \$43,836 for migrants and \$44,658 for the general population of the region. Scaling to the employment rate (presented in section 3.6 below) instead of population provides an indication that the average income for working migrants exceeded that of the general population in 2013, at \$47,730, which was 6.9% higher than the regional average.<sup>13</sup>

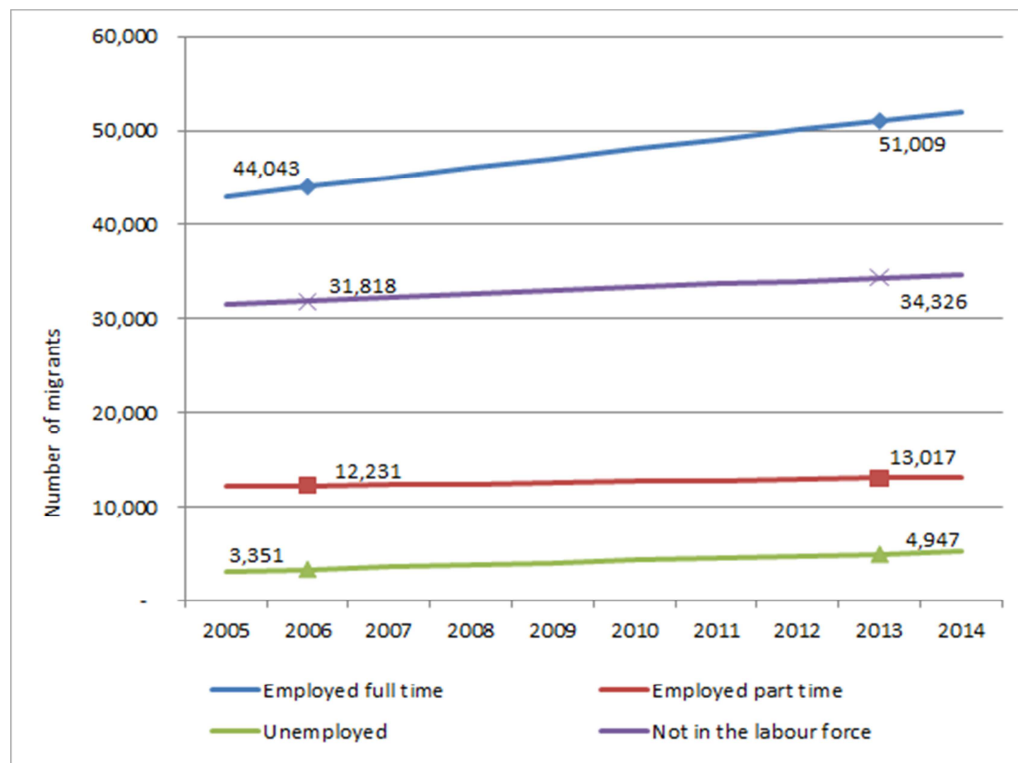
### **3.6 Employment – labour force status of migrants**

The migrant labour force accounted for 27.2% of the Wellington regional labour force in 2013 according to data sourced from the census and the GWRC migrant tool. Figure 7 shows the labour force status of migrants (aged 15 plus) for the period 2005-2014, based on actual data for 2006 and 2013 and the trend line for 2005-2014.

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<sup>13</sup> To calculate the average income scaled to the employment rate, total income is divided by the workforce scaled up to 67.5% rather than 62.0% to remove the point of difference that is reflected in the average income calculation and enable a more comparable average number to be calculated. The \$43,836 figure averages across all people aged 15 plus, but to show the average income of *working* migrants compared to the working general population, this scaling assists in making the average more reflective. By setting the participation rate at 67.5% for migrants to be consistent with the Wellington population, the author considers the \$47,730 figure a more accurate comparison for average working migrant income and presents both options for completeness.

**Figure 7: Labour force status of migrants in the Wellington region, 2005-2014**



Source: GWRC migrant tool; author's calculations

Over the period shown, the largest group were migrants who were employed full time, with 51,009 in 2013, or 49.4% of the total who answered this question in the census. This is the group showing the strongest growth over the period from 44,043 in 2006 or 48.2% of the total. Those employed part time accounted for a further 12.6% of the total in 2013, so a total of 62.0% were in employment in 2013, and 4,947 were unemployed. In 2013, those listed as not in the labour force<sup>14</sup> accounted for 33.2% of the total, so the unemployment rate (the number unemployed divided by the number in the labour force) was 7.2%.

Using the migrant tool, the unemployment rate in the migrant population in 2013 of 7.2% was the same as the Wellington regional unemployment rate, and marginally higher than the national rate of 7.1% according to census data.<sup>15</sup>

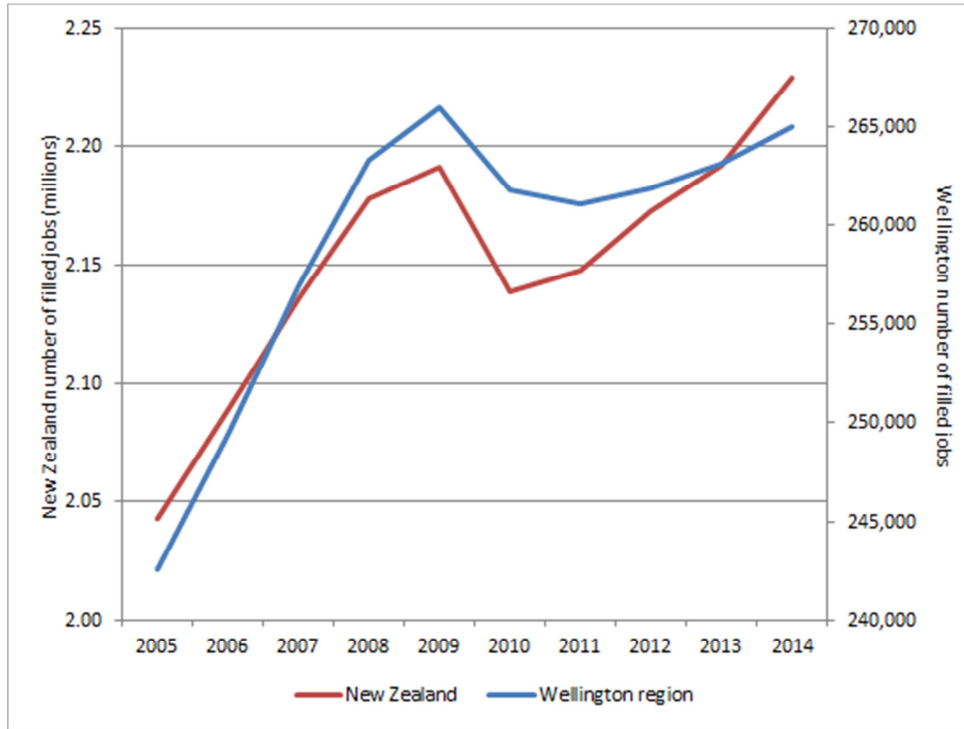
Employment trends for the Wellington region and New Zealand are shown for 2005 to 2014 in Figure 8, which shows data provided by Infometrics. The effects of the GFC of 2007-2009 are clear, with employment numbers dropping sharply between 2009 and 2010. Recovery has been evident for

<sup>14</sup> This includes (cited directly from the NZ.Stat page, Statistics New Zealand, accessed 18 September 2015): 'Any person in the working-age population who is neither employed nor unemployed. For example, this residual category includes: retired persons; persons with personal or family responsibilities such as unpaid housework and childcare; persons attending educational institutions; persons permanently unable to work due to physical or mental disabilities; persons who were temporarily unavailable for work in the survey reference week; persons who are not actively seeking work.'

<sup>15</sup> Note that the commonly used unemployment rates from the Household Labour Force Survey rates differ from Statistics New Zealand rates due to the use of different calculations, and are not presented in this report. The rates presented for the migrants, Wellington region and New Zealand in this report are from a consistent source and therefore directly comparable.

both the Wellington region and New Zealand since 2011 and both have returned to an increasing trend.

**Figure 8: Employment (numbers of filled jobs) in New Zealand and the Wellington region, 2005-2014**

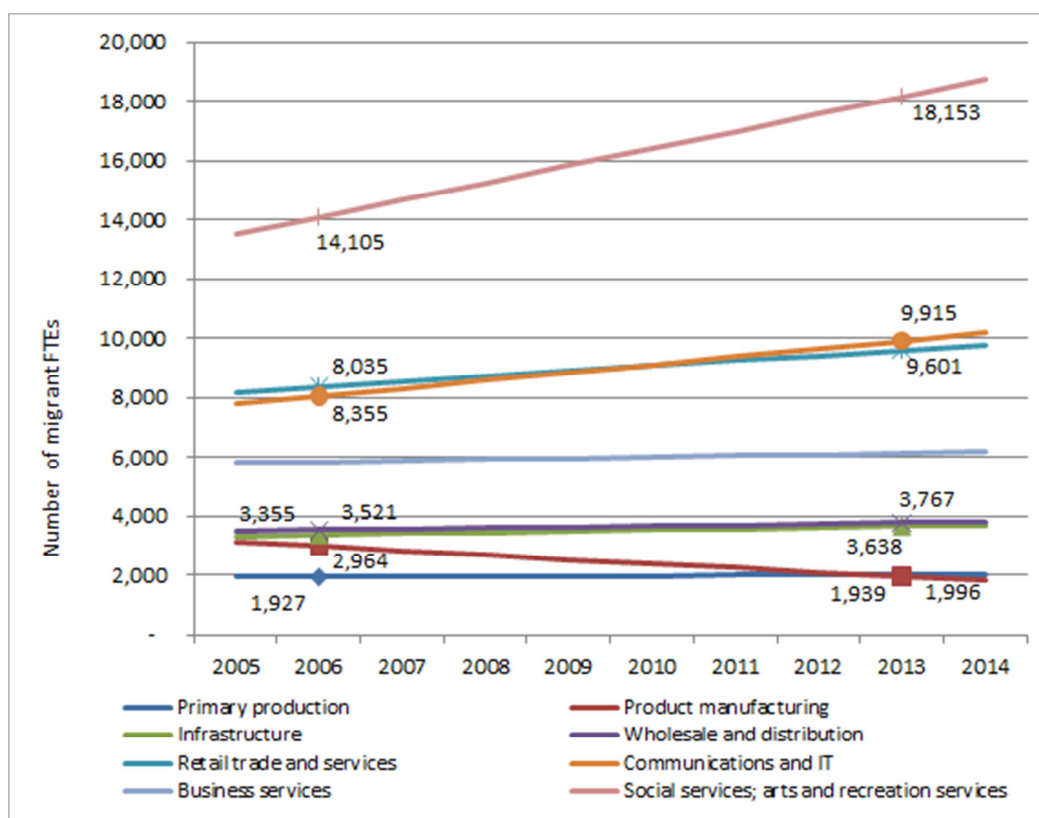


Source: Infometrics

### 3.7 Industries of employment

Figure 9 shows the employment by industry of migrants for the period 2005-2014, measured in terms of full-time equivalents (FTEs), based on actual data for 2006 and 2013 and the trend line for 2005-2014.

**Figure 9: Employment by industry of migrants in the Wellington region, 2005-2014**



Source: GWRC migrant tool; author's calculations

As shown in Figure 9, the largest employer of migrants is the social services, arts and recreation services sector, with 18,153 (32.9%) in 2013 of the total number of respondents who named an industry in the census. This was also the sector showing the strongest growth between 2006 and 2013. This category contains the government/public sector, which is particularly large in the Wellington region relative to the rest of the country because Wellington is the capital city and therefore home to the central government ministries. The health sector is also a large employer of migrants. The full breakdown of each of the eight sectors is shown in Appendix 1. The next largest sectors in terms of FTEs were communications and IT, and retail trade and services, with nearly 10,000 in each industry in 2013. Relatively few migrants (less than 2,000 in each) worked in product manufacturing or primary production.

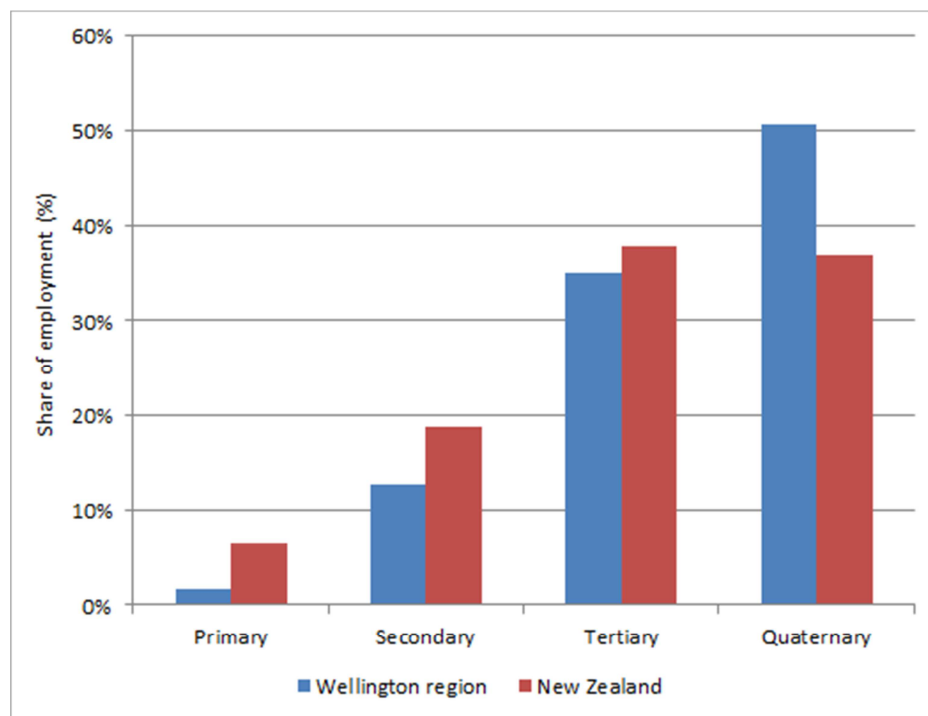
Putting this into context for the Wellington region and for New Zealand as a whole, Figure 10 shows the division of employment by industry classification for 2014 – primary, secondary, tertiary and quaternary. The definitions of each classification provided by Infometrics, the source of the data, are as follows:

- The primary sector extracts or harvests products from the earth and includes agriculture, forestry, fishing, and mining.
- The secondary sector produces manufactured and other processed goods and includes manufacturing, electricity, gas and water, and construction.
- The tertiary sector includes all service industries that are not knowledge intensive, such as retail trade, and food and accommodation services.

- The quaternary sector includes knowledge intensive service industries. Knowledge intensive service industries must fit the following: at least 25 per cent of the workforce must be qualified to degree level and at least 30 per cent of the workforce must be employed in professional, managerial, as well as scientific and technical occupations.’

It can be seen from Figure 10 that the Wellington region is dominated by the quaternary sector, accounting for just over half (50.7%) of the region’s employment in 2014, compared to a national average of 36.8%. Consequently, the Wellington region has less than the national average proportions of employment in the other three categories.

**Figure 10: Contribution to employment by industry classification, 2014**



Source: Infometrics

Looking more closely at the sectors within the Wellington region, in the Wellington Regional Strategy 2012 it was stated that: ‘Efforts should support areas where the Wellington region has an inherent advantage. Some of the key opportunities for the region are in the export of:

- Government and professional services
- Screen, digital and ICT
- Design and innovation-led manufacturing
- High-end food and wine’

The industry sectors identified in the migrant tool and based on census data that most closely represent those four sectors are the manufacturing; information media and telecommunications (IMT); and professional, scientific and technical services (PSTS) sectors. The public administration and safety sector includes government workers, and these data are included in the tables below, but separate analysis is not provided in this report. As will be seen in section 5, the government sector is

expected to grow by similar degrees according to all sets of growth assumptions. Definitions of what is included in each of the three named categories are as follows.

Manufacturing (ANZSIC level 1, category C) contains the following industries:

- C11 Food Product Manufacturing
- C12 Beverage and Tobacco Product Manufacturing
- C13 Textile, Leather, Clothing and Footwear Manufacturing
- C14 Wood Product Manufacturing
- C15 Pulp, Paper and Converted Paper Product Manufacturing
- C16 Printing
- C17 Petroleum and Coal Product Manufacturing
- C18 Basic Chemical and Chemical Product Manufacturing
- C19 Polymer Product and Rubber Product Manufacturing
- C20 Non-Metallic Mineral Product Manufacturing
- C21 Primary Metal and Metal Product Manufacturing
- C22 Fabricated Metal Product Manufacturing
- C23 Transport Equipment Manufacturing
- C24 Machinery and Equipment Manufacturing
- C25 Furniture and Other Manufacturing

Information media and telecommunications (IMT) (ANZSIC level 1, category J) contains the following industries:

- J54 Publishing (except Internet and Music Publishing)
- J55 Motion Picture and Sound Recording Activities
- J56 Broadcasting (except Internet)
- J57 Internet Publishing and Broadcasting
- J58 Telecommunications Services
- J59 Internet Service Providers, Web Search Portals and Data Processing Services
- J60 Library and Other Information Services

Professional, scientific and technical services (PSTS) (ANZSIC level 1, category M) contains the following industries:

- M69 Professional, Scientific and Technical Services (except Computer Systems Design and Related Services)
- M70 Computer Systems Design and Related Services

Table 6 shows the employment of migrants in the Wellington region in 2005 and 2014 by industry (extrapolated from census data from 2006 and 2013). The three industry sectors are highlighted by a double asterix and light shading.

Table 6 shows that PSTS was the largest employer of migrants in the region both in 2005 and 2014, increasing by 27.7% over the period. Manufacturing was a significant employer of 4,205 migrants in 2005, but this number had dropped by 2014 to just under 3,000, a fall of 29.3%. The IMT sector was a relatively minor employer of migrants in 2005 but showed the strongest relative growth of 52.5%



between 2005 and 2014. The numbers and shares of migrants in the workforce for each of these sectors is shown in Table 7. The migrants absolute numbers and share is seen to notably increase over the 2005-2014 period in IMT, increase in PSTS and slightly decrease in manufacturing. Overall, the absolute number of migrants in these sectors increased by 11.1% from 12,325 to 13,697. The migrant share of employment in these sectors rose from 21.7% to 23.3%. The figures in Tables 6 and 7 are put into a regional and national context in section 6.6.

**Table 6: Employment by industry (employee count), migrants in the Wellington region, 2005 and 2014**

| Industry  | 2005   | 2014   | % change |
|---|--------|--------|----------|
| Agriculture, forestry and fishing                 | 477    | 507    | 6.5%     |
| Mining  | 53     | 61     | 14.5%    |
| Manufacturing**                                   | 4,205  | 2,974  | -29.3%   |
| Electricity, gas, water and waste services        | 184    | 554    | 201.4%   |
| Construction                                      | 2,539  | 2,477  | -2.4%    |
| Wholesale trade                                   | 1,724  | 1,762  | 2.2%     |
| Retail trade                                      | 4,594  | 4,988  | 8.6%     |
| Accommodation and food services                   | 3,401  | 4,789  | 40.8%    |
| Transport, postal and warehousing                 | 1,790  | 2,095  | 17.0%    |
| Information media and telecommunications**        | 1,440  | 2,196  | 52.5%    |
| Financial and insurance services                  | 2,662  | 3,353  | 25.9%    |
| Rental, hiring and real estate services           | 1,160  | 817    | -29.6%   |
| Professional, scientific and technical services** | 6,680  | 8,527  | 27.7%    |
| Administrative and support services               | 2,173  | 2,246  | 3.4%     |
| Public administration and safety                  | 4,878  | 6,987  | 43.3%    |
| Education and training                            | 3,910  | 5,141  | 31.5%    |
| Health care and social assistance                 | 4,915  | 6,956  | 41.5%    |
| Arts and recreation services                      | 875    | 1,210  | 38.4%    |
| Other services                                    | 1,839  | 2,025  | 10.1%    |
| Total   | 52,544 | 61,600 | 17.2%    |

Source: GWRC migrant tool; author's calculations

Note: \*\* denotes the sectors most closely related to the WRS focus sectors.

**Table 7: Migrant share of Wellington regional employment in WRS focus sectors, 2005 and 2014**

| WRS focus sector                                | Number of migrants employed |        | Share of regional total |       |
|---|-----------------------------|--------|-------------------------|-------|
|   | 2005                        | 2014   | 2005                    | 2014  |
| Manufacturing                                   | 4,205                       | 2,974  | 22.9%                   | 22.0% |
| Information media and telecommunications        | 1,440                       | 2,196  | 16.7%                   | 25.4% |
| Professional, scientific and technical services | 6,680                       | 8,527  | 22.4%                   | 23.3% |
| Total   | 12,325                      | 13,697 | 21.7%                   | 23.3% |

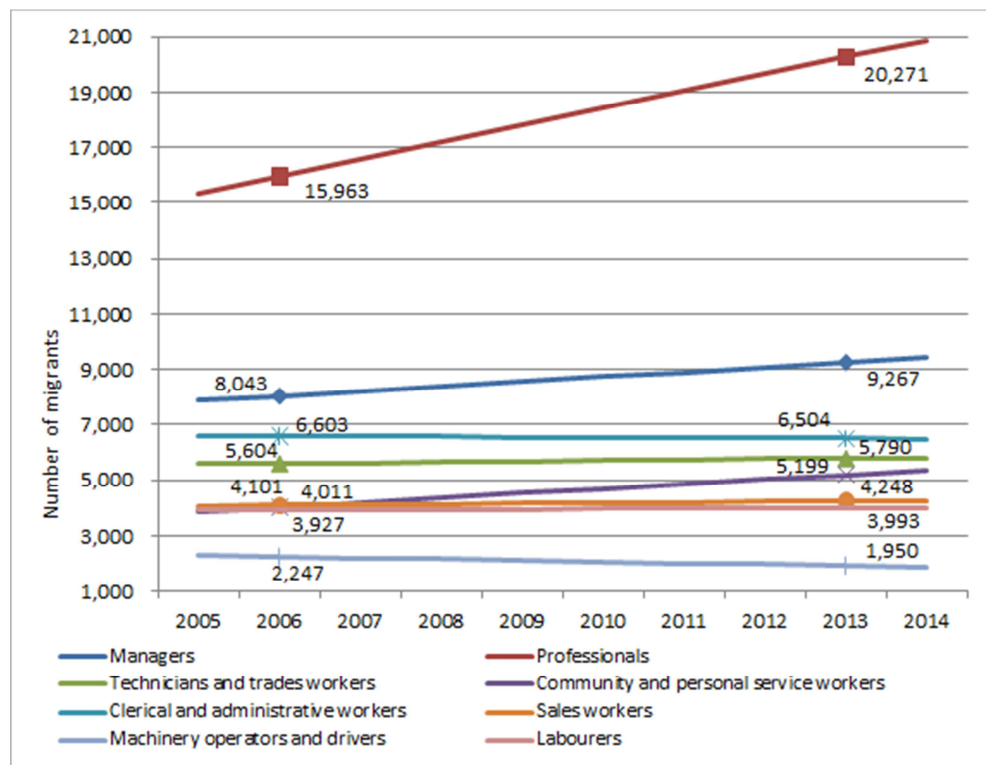
Source: GWRC migrant tool; author's calculations

### 3.8 Occupations of migrants

Figure 11 shows the general occupation classification of migrants (aged 15 plus) for the period 2005-2014, based on actual census data for 2006 and 2013 and the trend line for 2005-2014. The figure clearly illustrates the predominance of professionals and managers, together accounting for 29,538 (51.6%) of those who stated their occupation in the census in 2013. The trend in these groupings, particularly for professionals, was strongly positive between 2006 and 2013, with an increase of 27.0% for professionals and 15.2% for managers. The other grouping showing strong growth between 2006 and 2013 was community and personal service workers, up 29.6%.

The least likely occupations for migrants in 2013 were machinery operators and drivers (3.4%), followed by sales workers and labourers each at around 7%.

**Figure 11: Occupation classification of migrants (aged 15 and over) in the Wellington region, 2005-2014**



Source: GWRC migrant tool; author's calculations

### 3.9 International students

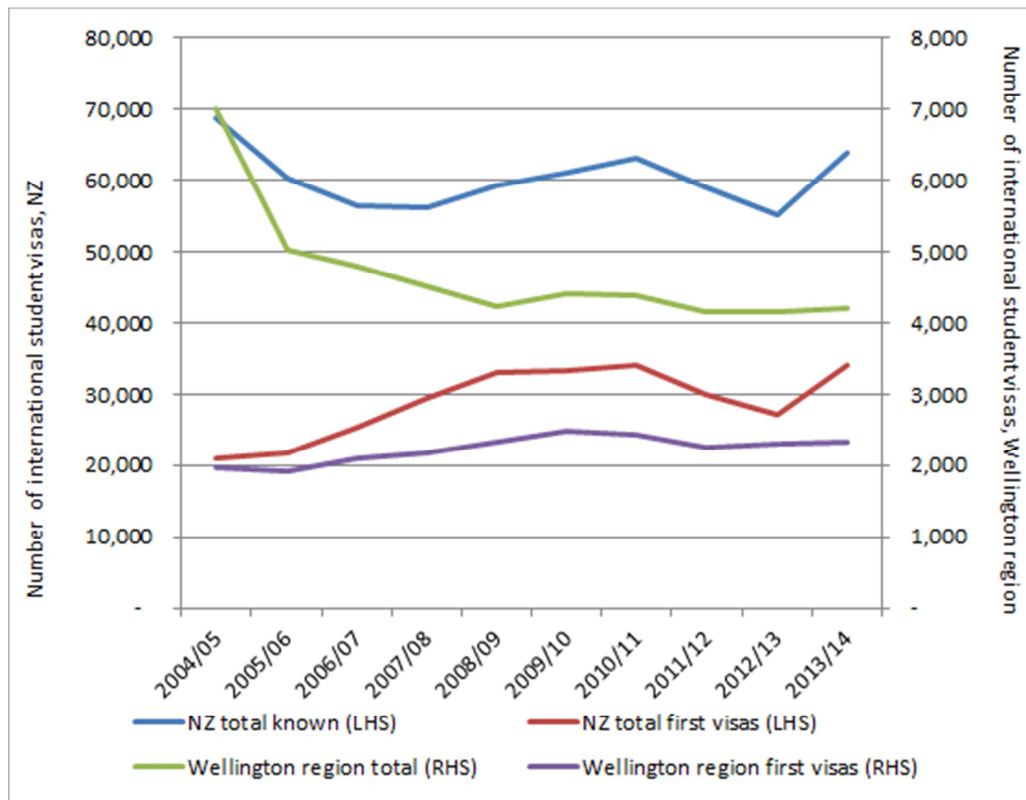
The source for the data in this section is the May 2015 paper entitled 'Migration and Labour Force Trends: Wellington Overview 2014', by Immigration New Zealand, hereafter referred to as Immigration New Zealand (2015).

In 2013/14, 73,510 international students were approved to study in New Zealand, and of these, the region of study was known for 63,785 of them. In the Wellington region, 4,206 visas were issued for students, which represents just 6.6% of the national known total. The majority went to Auckland (71.5%) and the next largest share went to Canterbury (8.8%), with Wellington in third place.

The Wellington region takes a relatively small share of the total New Zealand intake of international students, and the trend has been for the number to fall from exactly 7,000 in 2004/05 to 4,206 in 2013/14, as shown in Figure 12. The first intake of students was marginally rising over the period, although it stagnated from 2009/10 onwards and marginally fell, sitting at around 2,300 over that four-year period.

Note that a significant percentage of where international students end up is not known – 87% in 2013/14 both for New Zealand total and New Zealand total first visas. These charts show only the known data.

**Figure 12: International students with visas coming to New Zealand and to the Wellington region, 2005-2014**



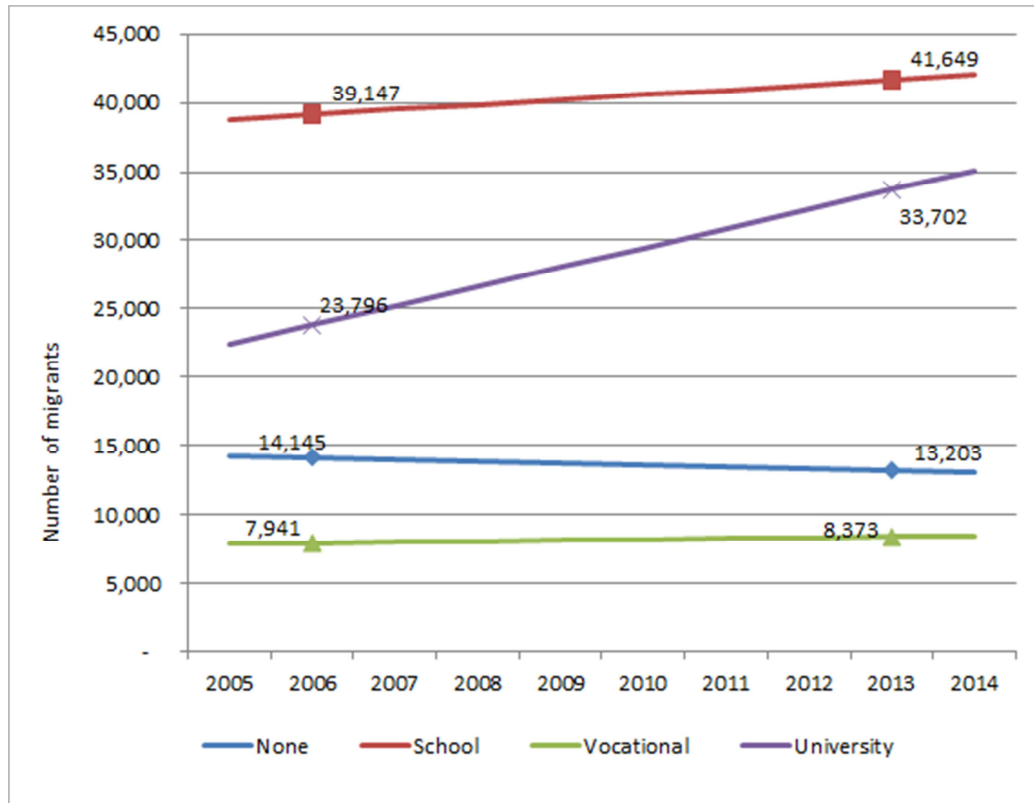
Source: Immigration New Zealand (2015) Tables 10 and 11.

### 3.10 Educational qualifications

Figure 13 shows the highest educational qualifications achieved by migrants (aged 15 plus) for the period 2005-2014, based on actual data for 2006 and 2013 and the trend line for 2005-2014. It can be seen that over 75,000 (77.7%) of the total of 96,927 migrants who answered this question in the census were educated to school or university level in 2013. The school share was 43.0% in 2013, which was down from 46.0% in 2006 so while the number was increasing, the share of the total migrant population was slightly declining. By contrast, both the absolute and relative number of migrants with university education rose strongly during the same period, from 28.0% (23,796) in 2006 to 34.8% (33,702) in 2013.

In 2013 13,203 (13.6%) of migrants answering this question said that they had no qualifications at all. This was down from 14,145 (16.6%) in 2006. Those with vocational qualifications increased slightly over the period from 7,941 to 8,373, but fell in relative terms from 9.3% to 8.6%.

**Figure 13: Highest educational qualifications of migrants in the Wellington region, 2005-2014**



Source: GWRC migrant tool; author's calculations

In Table 8, the pattern of qualifications among the migrant population of the Wellington region is compared to that for the total population of the region. It can be seen that in 2013 a significantly higher share of migrants had university qualifications, at 34.8% versus 28.1% for the region on average; and the shares of people with no qualifications and school qualifications only were lower for the migrant population. There was a similar share of people with vocational qualifications in each group. (It should be noted that this table shows the migrant population as a share of the total regional population, of which they are a subset. Therefore the differences between migrants and the New Zealand-born would be higher.)

**Table 8: Shares of the population by highest qualification for the Wellington regional total and migrant populations, 2013**

| Highest qualification acquired | Wellington regional total | Migrant total |
|--------------------------------|---------------------------|---------------|
| None                           | 16.0%                     | 13.6%         |
| School                         | 46.9%                     | 43.0%         |
| Vocational                     | 9.0%                      | 8.6%          |
| University                     | 28.1%                     | 34.8%         |

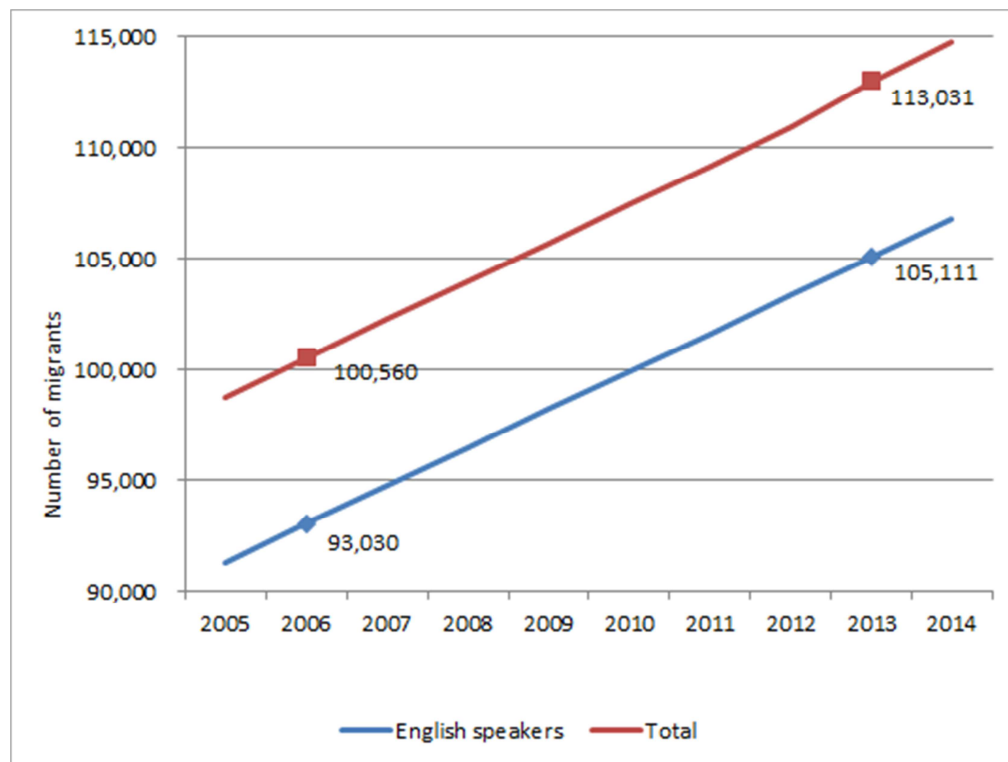
Source: GWRC migrant tool; author's calculations

### 3.11 English-speaking ability

Figure 14 shows the share of migrants who considered themselves to be proficient English speakers for the period 2005-2014, based on actual data for 2006 and 2013 and the trend line for 2005-2014. The actual question asked in the census in 2013 was: 'In which language(s) could you have a conversation about a lot of everyday things?'

As shown in Figure 14, in 2013 105,111 (93.0%) of the total included English in their answer. This share was slightly higher than in 2006 when it was 92.5%. While the share is relatively high, there remains a proportion of the migrant population who consider that they cannot speak English to a conversational standard.

**Figure 14: English-speaking migrants and total migrants in the Wellington region, 2005-2014**



Source: GWRC migrant tool; author's calculations

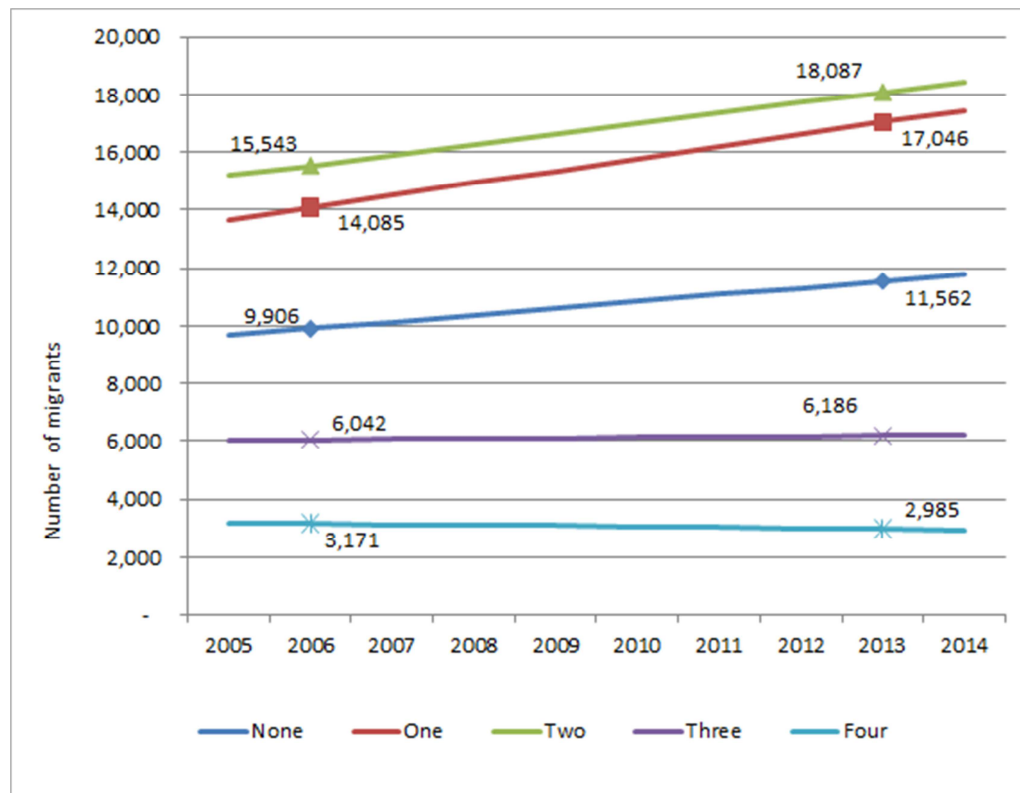
### 3.12 Numbers of dependent children

Figure 15 shows the numbers of dependent children of migrants for the period 2005-2014, based on actual data for 2006 and 2013 and the trend line for 2005-2014. It should be noted that a large proportion of migrants did not complete this question in the census so the data set is not complete. For example, of the 113,031 migrants in 2013, only 55,866 (49.4%) answered this question.

The figure shows that of those who answered, 79.3% had at least one dependent child. Almost half (48.8%) had two or more dependent children.

It is also interesting to note the proportion of migrants arriving in New Zealand with dependent children as this will impact upon their choices of where to live and on how well they settle after arrival. The migrant tool shows 10,227 migrants in 2013 who had been in the country for less than two years. There were 4,566 migrants who answered the question about whether they had dependent children, of whom 4,284 (93.8%) said they had at least one dependent child. This rate will be higher than the actual proportion of new (0-2 years) migrants with dependent children because (i) fewer than half of the migrants gave a response to this question; and (ii) some of the migrants were themselves children. There are therefore limitations on the interpretation of these percentages, but they do indicate that a significant proportion of migrants have dependent children and this is an important factor to note in any analysis.

**Figure 15: Numbers of dependent children of migrants in the Wellington region, 2005-2014**



Source: GWRC migrant tool; author's calculations

### 3.13 Section summary

Key factors noted in the migrant profile for the Wellington region in 2013 in this section may be summarised as follows. The first summary here gives an overview of 'who they are': where they have come from, how long they have been here, their age, English ability, migrants category and child dependency.

- 40.5% were from Europe; 26.4% from Asia; 13.2% from the Pacific Islands.
- 61.9% had been living in New Zealand for 10 years or more.
- 71.2% were in the 18-64 age group.
- 93.0% classed themselves as English speakers.
- 79.3% had at least one dependent child.
- 46% of successful applicants in 2013/14 were through the SMC.
- Migrants to the Wellington region in 2013/14 through the SMC with a job offer were predominantly from India and the UK.

Key data relating to the migrant contribution to the region presented in this section are summarised here in Tables 9 and 10, for 2013, and for the trend between 2005 and 2014, respectively. The key characteristics relate to their education, income and employment. These figures show that migrants are relatively highly educated, skilled, and earning relatively high incomes, with a relatively low employment rate.

In Table 9 it can be seen that migrants are significant contributors to the Wellington regional economy. They represented 23.2% of the population and 24.3% of people employed in 2013. While a relatively large share of the migrant population was of working age (91.4% compared to 79.4%), the employment rate was lower for migrants at 62.0% compared to the regional average of 67.5%.

Calculating average income using the employment rate indicates that the average income for working migrants exceeded that of the general population in 2013, at \$47,730, which was 6.9% higher. This intuitively provides a better fit for the average income when combined with data such as the share of total regional income (27.8%), relative rate of university qualifications (34.8% compared to 28.1%) and share of employed people in the skilled occupations (approximated here as managers and professionals), with 29.3% of the region's total.

**Table 9: Summary table of migrant contributions to the Wellington region, 2013**

|  | Migrant total | Share as defined and Wellington regional data where applicable                            |
|--|---------------|---|
| Population   | 113,031       | 23.2% (share of Wellington regional total)  |
| People of working age (aged 15 plus)   | 103,302       | 91.4% (share of total migrant population)<br>Wellington regional average 79.4%            |
| Employed (in full-time or part-time paid employment)   | 64,026        | 24.3% (share of Wellington regional total)  |
| Workforce employment rate  | 62.0%         | Wellington regional average rate 67.5%<br>Migrants formed 27.2% of the region's workforce |
| Employed in skilled occupations (professionals and managers)                                 | 29,538        | 29.3% (share of Wellington regional total)  |
| Employed in target industries  | 13,545        | 23.0% (share of Wellington regional total)  |
| Total income   | \$4.3bn       | 27.8% (share of Wellington regional total)  |
| Average income (total migrant earnings divided by the total migrant population aged 15 plus) | \$43,836      | 1.8% below the Wellington regional average  |
| Average income scaled to employment rate   | \$47,730      | 6.9% above the Wellington regional average  |
| University qualified   | 33,702        | 34.8% (share of total migrant population)<br>Wellington regional average 28.1%            |

Note: All data relate to the population aged 15 and over with the exception of the total population.

Table 10 shows the trend for the period 2005-2014 for the key factors shown in Table 9. There is shown to be relative growth in the migrant population, people of working age, people employed (share and absolute), people employed in target industries, level of education and incomes.

**Table 10: Summary table of trends in migrant contributions to the Wellington region, 2005-2014**

|  | 2005     | 2014     | Change              |
|--|----------|----------|---------------------|
| Population   | 98,778   | 114,813  | 16,034 (up 16.2%)   |
| Population – share of Wellington region  | 21.4%    | 23.4%    | Up 2.0%             |
| People of working age (aged 15 plus)   | 89,745   | 104,997  | 15,251 (up 17.0%)   |
| Employed (in full-time or part-time paid employment)   | 55,167   | 65,133   | 9,966 (up 18.1%)    |
| Employed – share of Wellington region  | 22.7%    | 24.6%    | Up 1.9%             |
| Employed in skilled occupations (professionals and managers)                                 | 23,216   | 30,328   | 7,112 (up 30.6%)    |
| Employed in target industries  | 12,325   | 13,697   | 1,372 (up 11.1%)    |
| Employed in target industries – share of Wellington region                                   | 21.7%    | 23.3%    | Up 1.6%             |
| Total income   | \$2.8bn  | \$4.5bn  | \$1.7bn (up 58.3%)  |
| Total income – share of Wellington region  | 24.2%    | 28.1%    | Up 3.9%             |
| Average income (total migrant earnings divided by the total migrant population aged 15 plus) | \$34,515 | \$45,001 | \$10,485 (up 30.4%) |
| University qualified   | 22,381   | 35,117   | 12,736 (up 56.9%)   |
| University qualified – share of total migrant population                                     | 26.9%    | 35.6%    | Up 8.7%             |

Note: All data relate to the population aged 15 and over with the exception of the total population.



## **4 Analysis of migrant data by region of origin**

This section further examines the migrant data presented in section 3, with a closer look at the patterns by region/country of origin of migrants' income, employment, university qualifications, English-speaking abilities, and also the attraction and retention of international students. The findings are summarised in section 4.6. Where the migrant tool is the data source, the region/countries of origin shown are the six categories named in the migrant tool, i.e. Europe, Asia, Pacific Islands, Africa and the Middle East, North America and Australia. The 'other' category tends to be very small and has not been shown in the data in this section.

As stated at the beginning of section 3, it is important to appreciate that where the trends and analysis are drawn from the data in the GWRC migrant tool, they are based on the numbers of respondents to each relevant question in the census, and therefore the proportions and figures may not be exact representations of the whole migrant population. The analysis is therefore to be treated as indicative and informative only.

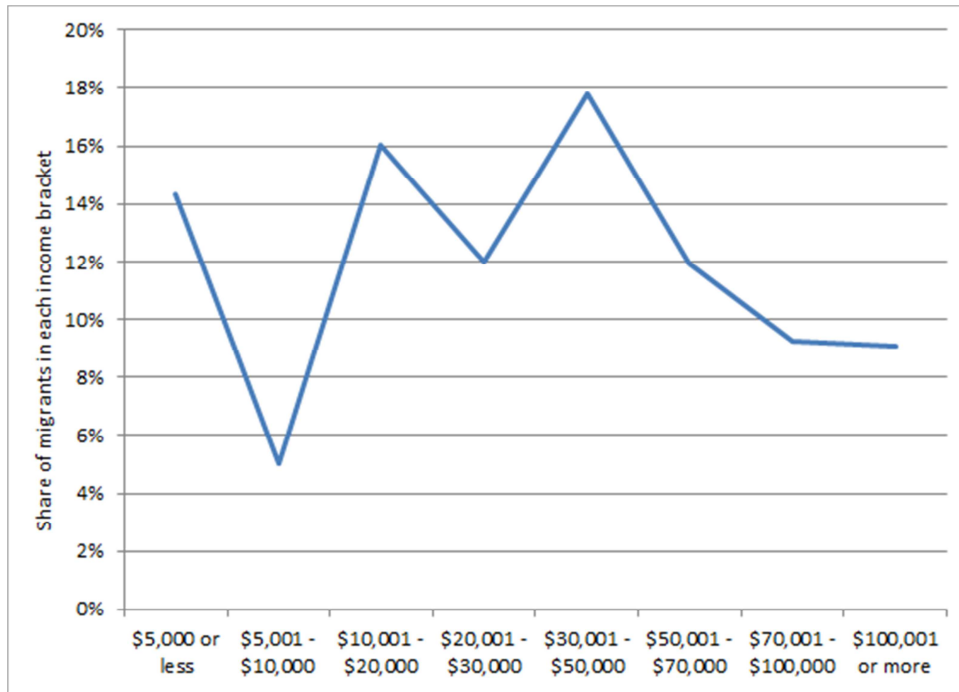
### **4.1 Income**

This section looks at the following aspects relating to the income of migrants in the Wellington region: income brackets of migrants in total and by region/country of origin in 2013; migrants' share of the Wellington income 2005-2014; the distribution across the region/country of origin for the highest and lowest income brackets, 2005-2014; the pattern for each region/country of origin in 2013; and the implied averages. All income data presented here are nominal and relate only to people aged 15 and over.

Figure 16 shows the income brackets of migrants living in the Wellington region in 2013, using the GWRC migrant tool which is derived from census data. It shows that at the upper end of the income brackets, 18.2% of migrants earned \$70,000 or above (9.2% earning \$70,001 to \$100,000 plus 9.0% earning \$100,001 or more). A further 11.9% earned \$50,001 to \$70,000. At the lower end, 47.4% of migrants earned \$30,000 or less.

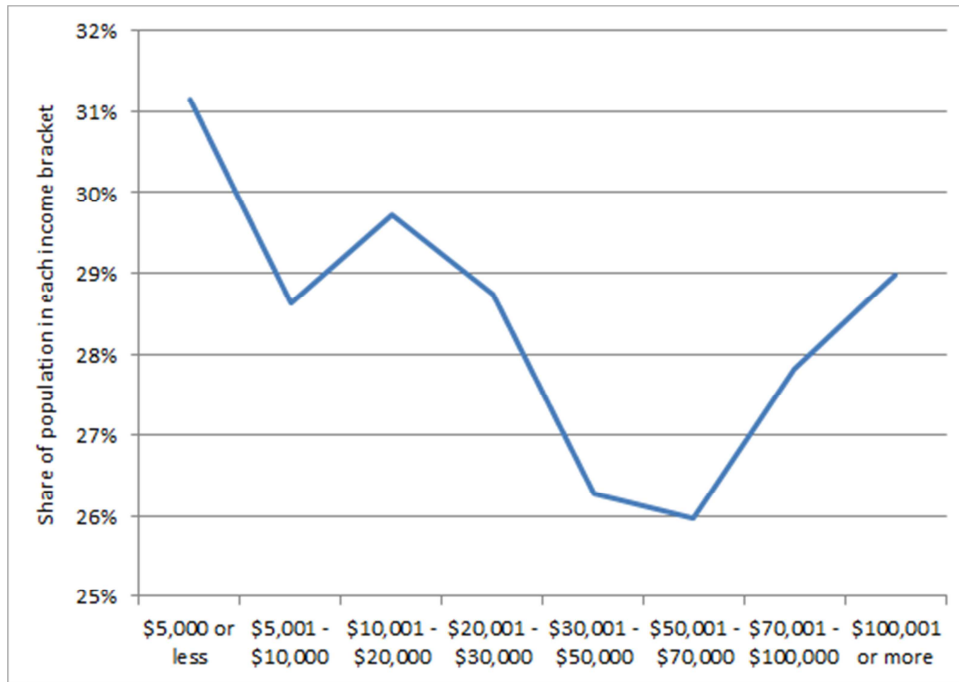
Figure 17 shows the migrant share of income brackets in 2013, which is calculated as the number of migrants earning in each bracket as a proportion of all Wellington regional workers earning in those brackets. With migrants representing 27.2% of the region's total workforce in 2013, as stated in section 3.6, they are more than proportionally represented in the lowest and highest income brackets, and less than proportionally represented in the \$30,001-\$70,000 income brackets.

**Figure 16: Distribution of income brackets of migrants in the Wellington region, 2013**



Source: GWRC migrant tool; author's calculations

**Figure 17: Migrant share (of the Wellington regional population) of income brackets, 2013**



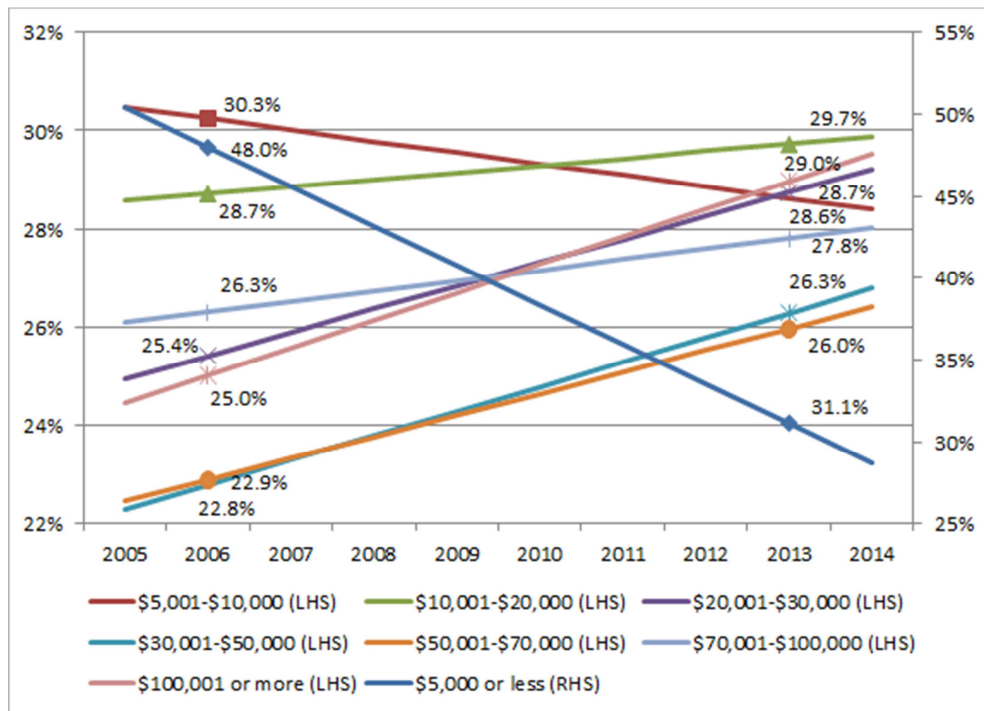
Source: GWRC migrant tool; author's calculations

Figure 18 shows the trend for migrant incomes over the 2005-2014 period, again based on census data in the migrant tool for 2006 and 2013 and a trend line applied for the period 2005 to 2014.

The share of migrants earning less than \$5,000 in the Wellington region is presented on the right-hand-side axis as the shares were so much higher in 2006 than for the other income brackets. This share was 48.0% in 2006, falling sharply to 31.1% in 2013.

The other income brackets in Figure 18 are shown against the left-hand-side axis. Migrants increased their share over the period in each bracket with the exception of the lowest brackets of \$10,000 or less.

**Figure 18: Migrant share (of the Wellington regional population) of income brackets, 2005-2014**



Source: GWRC migrant tool; author's calculations

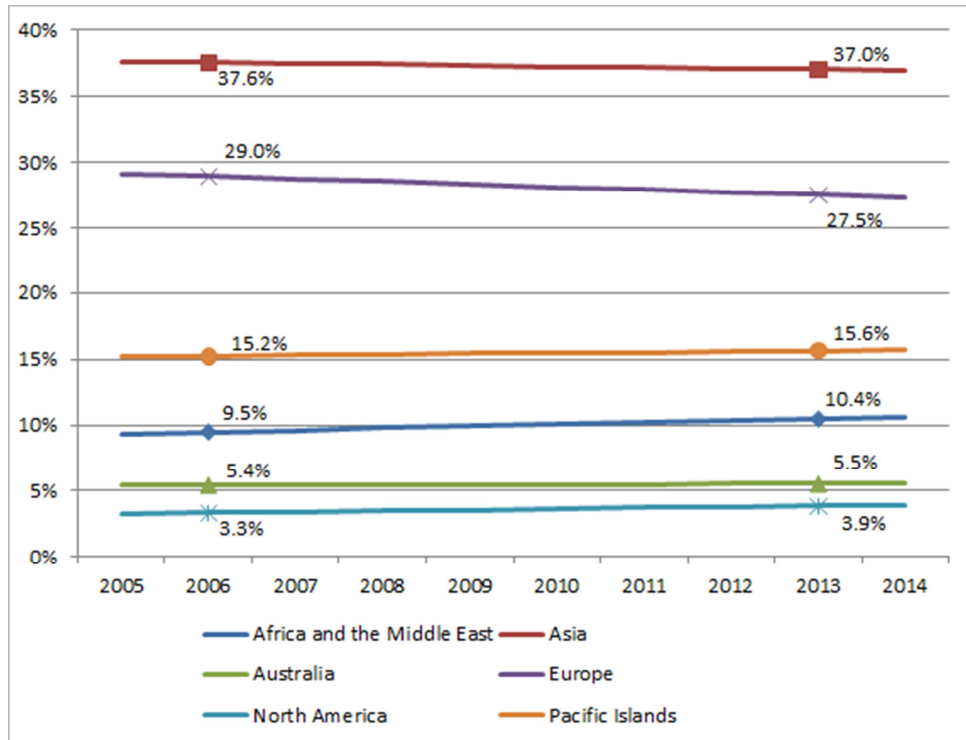
Figure 19 shows the proportion of migrants in the Wellington region earning \$10,000 or less by region/country of origin for the period 2005-2014. Asians and Europeans together accounted for two-thirds of the total number of migrants in this income bracket throughout the period. This will in part reflect that fact that these are the biggest groups of migrants in the region, as shown in section 3.1, which showed that in 2013, Europeans accounted for 40.5% of migrants in the Wellington region, and Asians were 26.4%. Europeans were therefore proportionally under-represented in the lower income group shown in Figure 19, at 27.5% in 2013. By contrast, Asians were over-represented according to their proportion of the population in 2013, at 37.0%.

Looking at the higher income groupings in 2013, presented in Figures 20 and 21, Europeans are proportionally over-represented. Europeans accounted for 51.4% of migrants in the Wellington region earning \$70,001 to \$100,000 in 2013, and 58.4% of those earning over \$100,000. By contrast, Asians were under-represented, at 22.7% and 15.3%, respectively.

Migrants from Africa and the Middle East, and from Australia, tended to be roughly consistently represented in the shares at each earning level in proportion to their share of the migrant

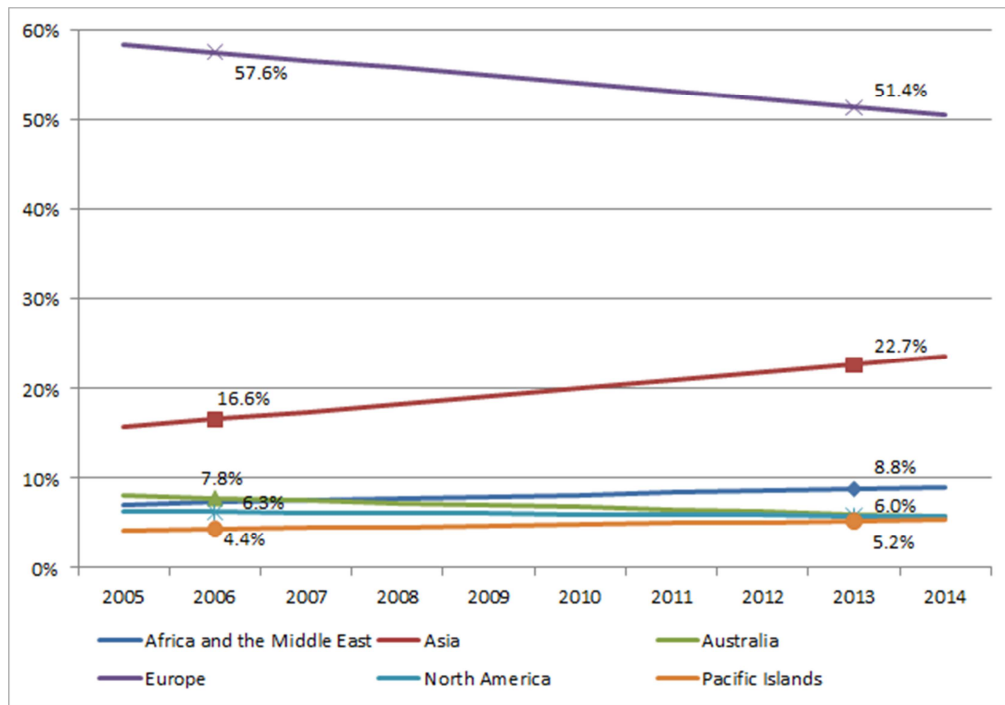
population. North Americans tended to be over-represented at the higher income levels and under-represented at the lower income level. Pacific Islanders were on average under-represented at the higher income levels and over-represented at the lower income level.

**Figure 19: Share of migrants earning \$10,000 or less by region/country of origin, 2005-2014**



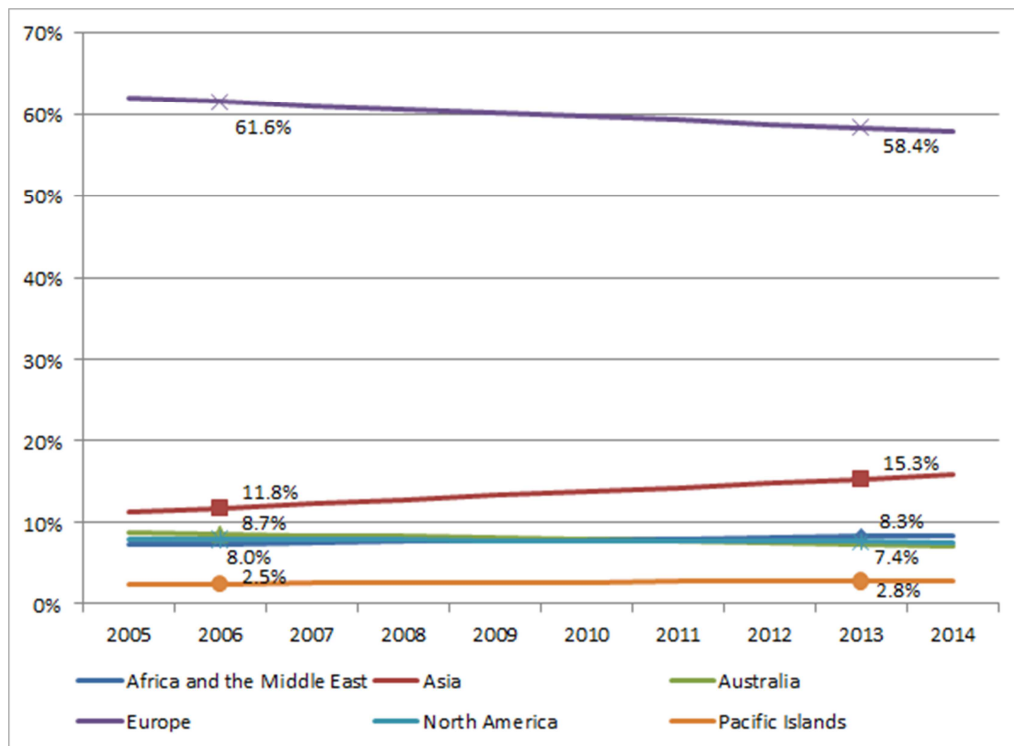
Source: GWRC migrant tool; author's calculations

**Figure 20: Share of migrants earning \$70,001-\$100,000 by region/country of origin, 2005-2014**



Source: GWRC migrant tool; author's calculations

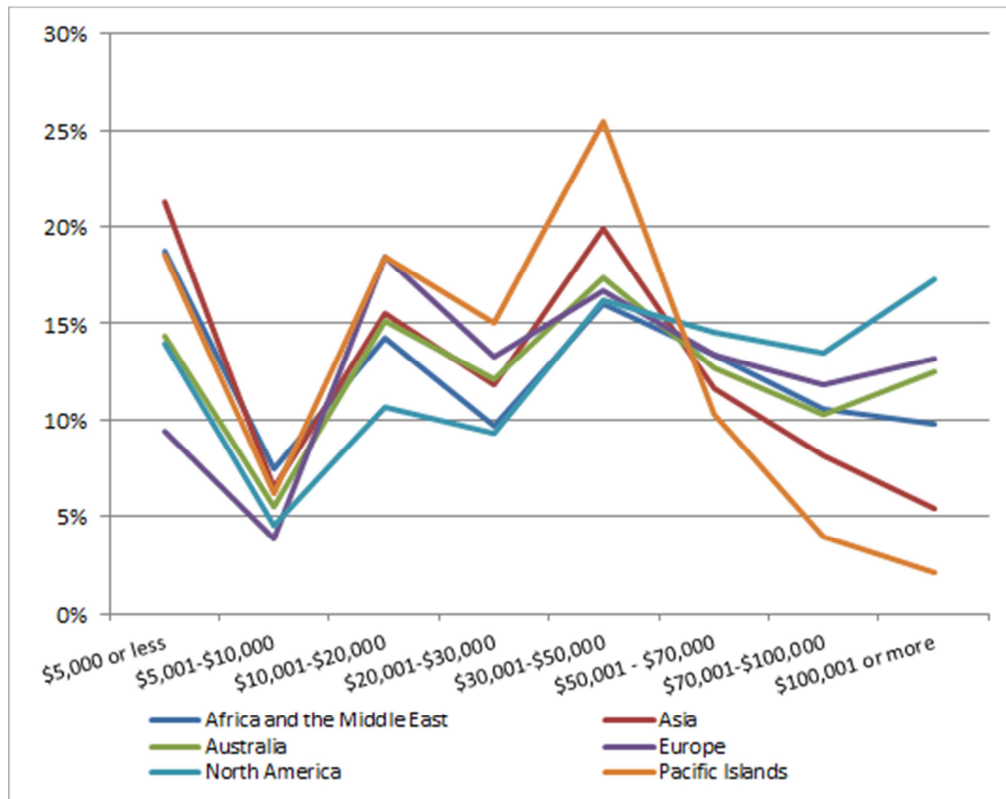
**Figure 21: Share of migrants earning over \$100,000 by region/country of origin, 2005-2014**



Source: GWRC migrant tool; author's calculations

Figure 22 shows the share of migrants by region/country of origin, and for each origin the distribution across the income brackets, in 2013. It illustrates how North Americans and Europeans tend to earn in the higher income brackets, with fewer in the lower brackets. Asians and Pacific Islanders tend to earn in the middle brackets, with a relatively high number also in the lower brackets and the lowest shares in the top brackets.

**Figure 22: Share of migrants in each income bracket by region/country of origin, 2013**



Source: GWRC migrant tool; author’s calculations

Table 11 shows the average income for migrants in the Wellington region by region/country of origin in 2013. As shown in Table 8 the average in 2013 was \$43,836 using the population calculation.<sup>16</sup> Table 11 shows that North Americans were earning significantly more than the average, at over \$57,000, while Europeans earned on average over \$51,000, followed by Australians on \$48,000. Pacific Islanders earned the lowest average incomes at around \$30,000, with Asians on \$36,000 and migrants from Africa and the Middle East earning near the total migrant average.

The share of migrant income going to each migrant group is shown in the second line of data in Table 11. Europeans earned the largest share, at 48.5%, since they are the largest group as shown in section 3.1, and they also earned relatively high average incomes.

<sup>16</sup> While the employment rate calculation may be preferred for some reasons, the choice here is not important since the reason for the presentation of the data in Table 11 is for comparison across regions, so as long as the calculation is consistent across the regions, that is all that is required for this discussion.

**Table 11: Average income and share of the total migrant income by region/country of origin, 2013**

|                               | Africa and the Middle East | Asia     | Australia | Europe   | North America | Pacific Islands |
|-------------------------------|----------------------------|----------|-----------|----------|---------------|-----------------|
| Average income                | \$43,746                   | \$36,187 | \$48,163  | \$51,090 | \$57,226      | \$30,272        |
| Share of total migrant income | 7.9%                       | 22.0%    | 6.1%      | 48.5%    | 5.4%          | 8.7%            |

Source: GWRC migrant tool; author's calculations

## 4.2 Employment

This section presents data relating to the employment of migrants in the Wellington region by the migrants' region/country of origin as follows: total employment; the share of the workforce in full-time employment; employment type; unemployment rates by region/country of origin and by time in New Zealand; and employment in the three WRS focus sectors identified in section 3.7.

### 4.2.1 Employment by region/country of origin

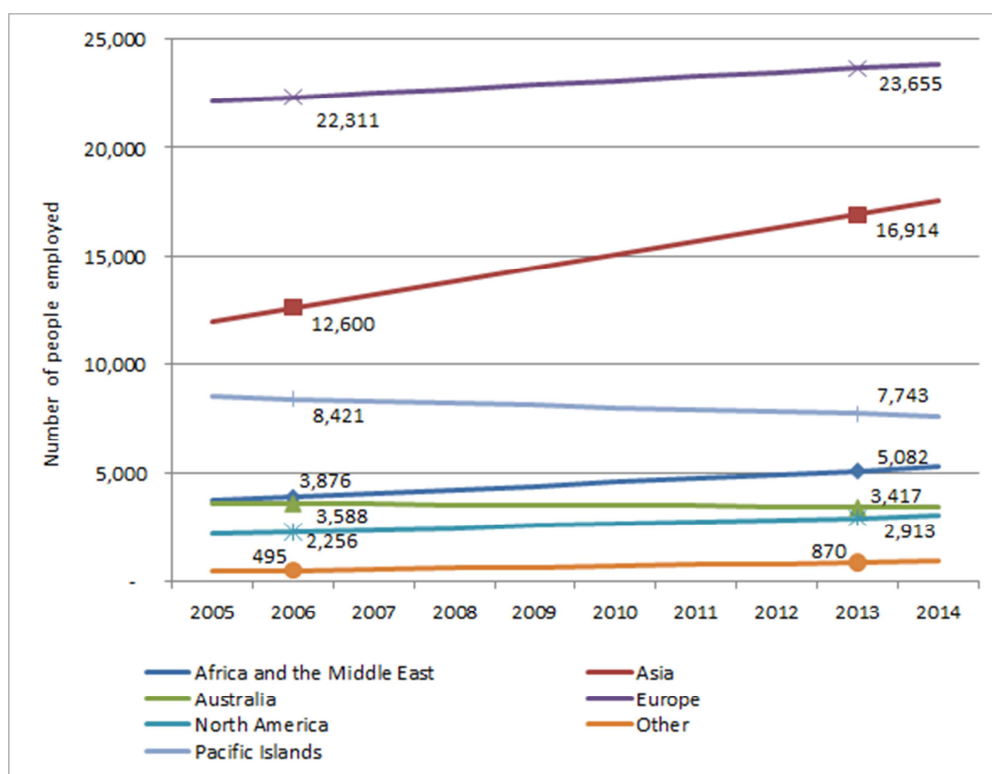
Figure 23 shows the employment numbers (headcount not FTEs) for those migrants in the Wellington region aged 15-65 over the period 2005 to 2014, based on a trend line fitted to 2006 and 2013 census data.

The dominance of employed migrants from Europe and Asia, respectively, is clear. In 2013 Europeans accounted for 39.0% of the total, down from 41.7% in 2006. Asians accounted for 27.9% of the total in 2013, up from 23.5% in 2006. The third largest group in 2013 were Pacific Islanders at 12.8%, down from 15.7% in 2006.

It is clear from Figure 23 and from the growth rates shown in Table 12 below that the strongest growth in numbers of employed migrants between 2005 and 2014 was from Asia, at 46.3%. In absolute terms Asian migrants accounted for more than 60% of the total increase in numbers of employed migrants in the Wellington region between 2005 and 2014.

The second highest rate of growth was for migrants from Africa and the Middle East (41.9%), and third highest was from North America (39.1%). Smaller rates of growth were seen for migrants from Europe (7.8%). There were declines in numbers of employed migrants from the Pacific Islands and Australia.

**Figure 23: Migrant employment by region/country of origin, ages 15-65, 2005-2014**



Source: GWRC migrant tool; author's calculations

**Table 12: Employment growth by region/country of origin, 2005 to 2014**

| Region/country of origin   | Growth | Share of total migrant growth | Change in numbers employed |
|----------------------------|--------|-------------------------------|----------------------------|
| Africa and the Middle East | 41.9%  | 17.1%                         | 1,551                      |
| Asia                       | 46.3%  | 61.2%                         | 5,547                      |
| Australia                  | -6.1%  | -2.4%                         | -220                       |
| Europe                     | 7.8%   | 19.1%                         | 1,728                      |
| North America              | 39.1%  | 9.3%                          | 845                        |
| Pacific Islands            | -10.2% | -9.6%                         | -872                       |

Source: GWRC migrant tool; author's calculations

Figure 24 shows the full-time employment rates for the migrant workforce in the Wellington region in 2013, by region/country of origin, and by the number of years the migrants have been in New Zealand. This is calculated as the share of the migrant workforce working ('working' is defined as those people working at least one hour per week) who are working 30 hours or more per week.

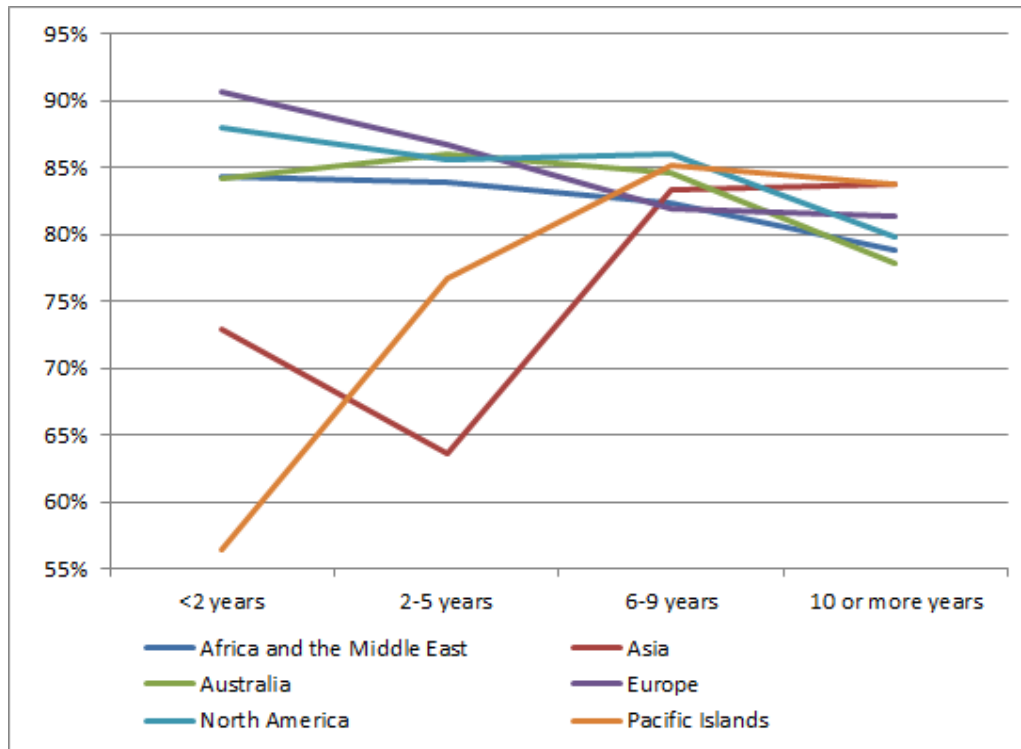
The full-time employment rate is shown to be highest for Europeans followed by North Americans in the first two years. For Asians and Pacific Islanders, the full-time employment rate for the first five years in the country tends to be notably lower than for other migrants. However, from six years onwards, the transitional issues appear to have been overcome to some extent, as the full-time employment rates become comparable across all migrants, with all rates being above 75% and most



being above 80%. It is interesting to note the general downturn in full-time employment beyond 10 years in the country. This may reflect an older generation choosing not to work full-time hours.

The share of the workforce working part-time hours (between 1 and 29 hours per week) may be calculated as 100% less the percentages shown in Figure 24.

**Figure 24: Share of migrant workforce in full-time employment in the Wellington region, by region/country of origin and years in New Zealand, 2013**



Source: GWRC migrant tool; author's calculations

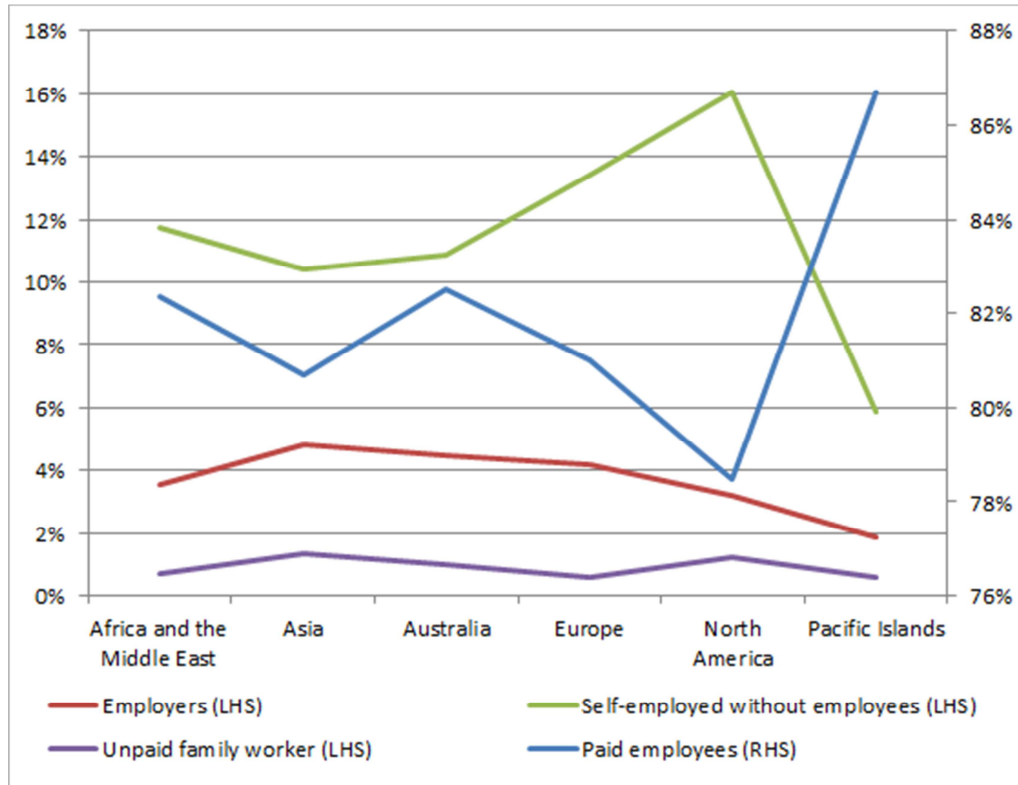
Figure 25 shows the share of the Wellington region's migrant workforce in 2013 who were employers, paid employees, self-employed without employees or unpaid family workers. The majority of the workforce were paid employees, as shown by the blue line plotted against the right-hand-side axis. Between 78.5% and 86.7% of the workforce for each region of origin were paid employees. The lowest proportion was among North Americans and the highest was among those from the Pacific Islands. The other regions all had shares of between 81.0% and 82.5%.

The proportion of self-employed workers without employees shows the opposite pattern, with North Americans showing the highest proportion of all regions of origin, and Pacific Islanders showing the lowest, at 16.1% and 5.9%, respectively. The other regions varied between 10.4% and 13.4%.

Asians showed the highest propensity to become employers, at 4.8%, although there was not great variability across the regions of origin, being closely followed by Australians (4.5%) and Europeans (4.2%). The rates were lowest for Pacific Islanders at 1.9%.

The lowest proportion of workforce types was of unpaid family workers. This was between 0.6% and 1.3% across all migrants.

**Figure 25: Share of workforce by employment type and by region/country of origin, 2013**



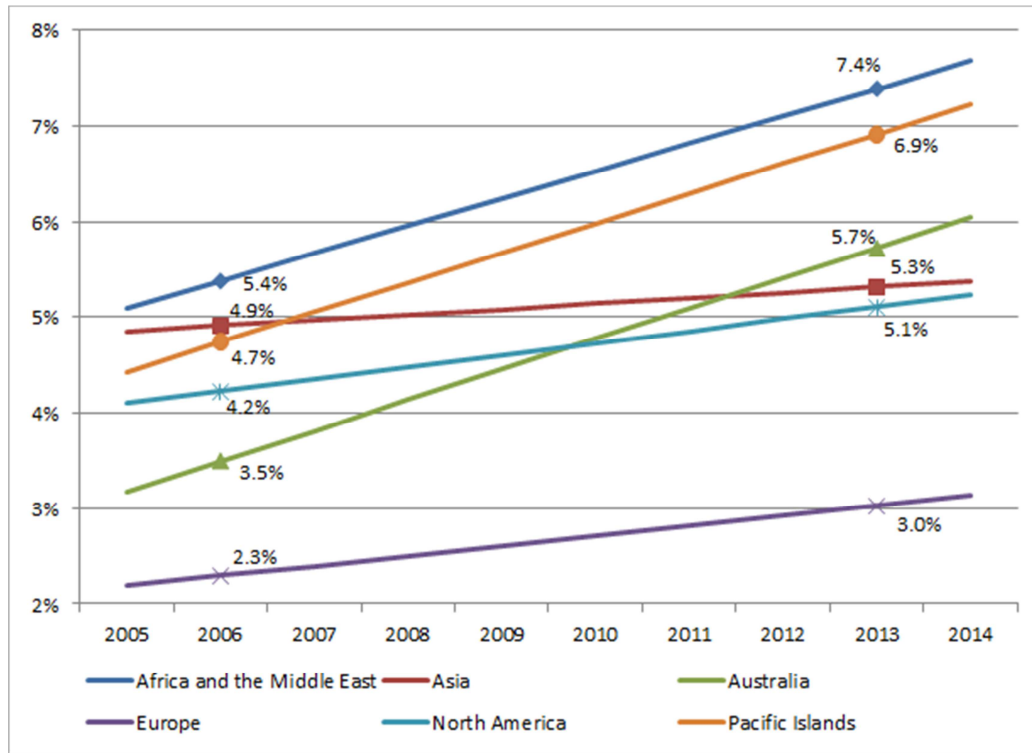
Source: GWRC migrant tool; author's calculations

#### **4.2.2 Unemployment by region/country of origin**

Figure 26 shows the unemployment rate by region/country of origin for the 2005-2014 period, using census data for 2006 and 2013 and applying a linear trend line, again using the migrant tool data.

It can be seen that the migrants with the highest unemployment rate in 2013 were those from Africa and the Middle East, closely followed by Pacific Islanders, with 7.4% and 6.9%, respectively. For both origins, these rates had risen significantly since 2006. The rates for all regions increased between 2006 and 2013, though the increase was much less for people from Asia. The people with the lowest unemployment rates both in 2006 and 2013 were Europeans, at 2.3% and 3.0%, respectively.

**Figure 26: Unemployment rate of migrants in the Wellington region by region/country of origin, 2005-2014**



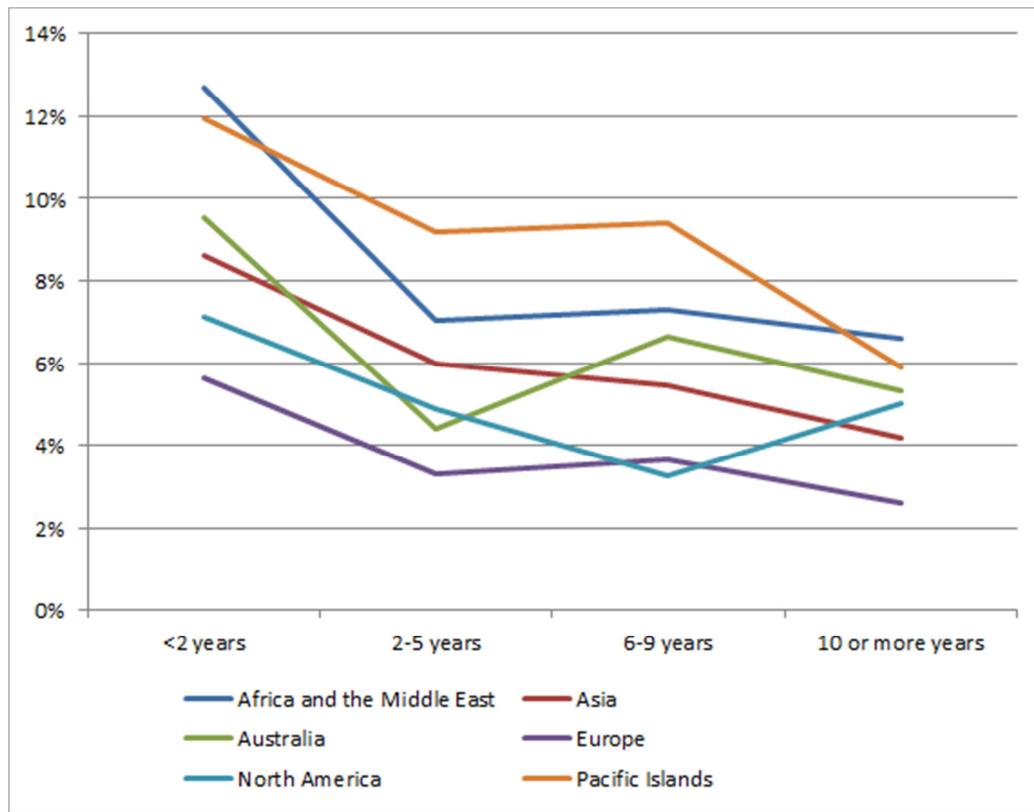
Source: GWRC migrant tool; author's calculations

Figure 27 shows the unemployment rates for migrants in the Wellington region in 2013, by region/country of origin and time in New Zealand. It is clear that Pacific Islanders and those from Africa and the Middle East were consistently the migrants with the highest unemployment rates throughout their time in New Zealand. During the first two years, migrants from Africa and the Middle East had an average unemployment rate of 12.7%, and Pacific Islanders of 11.9%. These rates were lower for migrants who had been in the country for longer, with rates of 6.6% and 5.9% respectively after 10 years or more.

By contrast, Europeans in the Wellington region who had been in New Zealand less than two years had an average unemployment rate of 5.6% in 2013, falling to 2.6% for those who had been in the country for 10 years or more. North Americans had the second lowest unemployment rates during the initial two years at 7.1%, falling for those who had been in the country for between two and nine years but rising to 5% for those in New Zealand for 10 years or more. Asians and Australians were between the extremes, with early unemployment rates of less than 10%, falling as migrants were in the country longer, to between 4% and 5.5%.

The data therefore suggest that Europeans and North Americans find work more quickly when arriving in New Zealand, than those from other regions, particularly those from the Pacific Islands and from Africa and the Middle East.

**Figure 27: Unemployment rate by region/country of origin and time in New Zealand, 2013**



Source: GWRC migrant tool; author's calculations

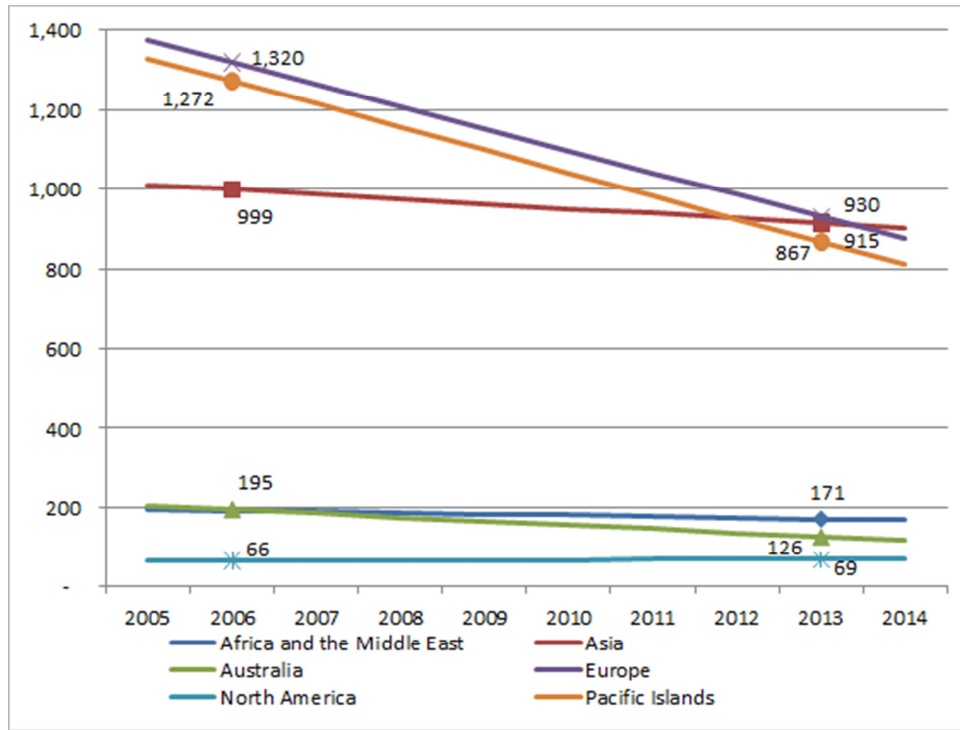
#### **4.2.3 Employment in WRS focus sectors by region/country of origin**

This section presents the employment trends of migrants, by region/country of origin, in the Wellington region for the three WRS focus sectors identified in section 3.7 – manufacturing, IMT and PSTS. It should be noted, as stated at the start of section 3, that the trends and analysis drawn from the data in the GWRC migrant tool are based on the numbers of people who responded to each relevant question in the census, and therefore the proportions and figures may not be exact representations of the whole migrant population. With regard to the employment in the WRS focus sectors presented in this section, roughly half of the migrant population answered the question about employment. The analysis is therefore to be treated as indicative and informative only.

Figure 28 shows the employment of migrants in manufacturing for the period 2005-2014, based on census data for 2006 and 2013 and a trend line applied. There is a clear dichotomy between the sources of migrants for this sector. The three regions of origin dominating the manufacturing employment picture are Europe, Pacific Islands and Asia. The trend has been flat for Asians, and falling for the other two regions of origin.

The other three regions shown have a low number of workers in the manufacturing sector, the lowest being North Americans. The overall trend is of falling numbers of migrants employed in the manufacturing sector, consistent with the picture presented above in Table 6.

**Figure 28: Number of migrants employed in manufacturing by region/country of origin, 2005-2014**

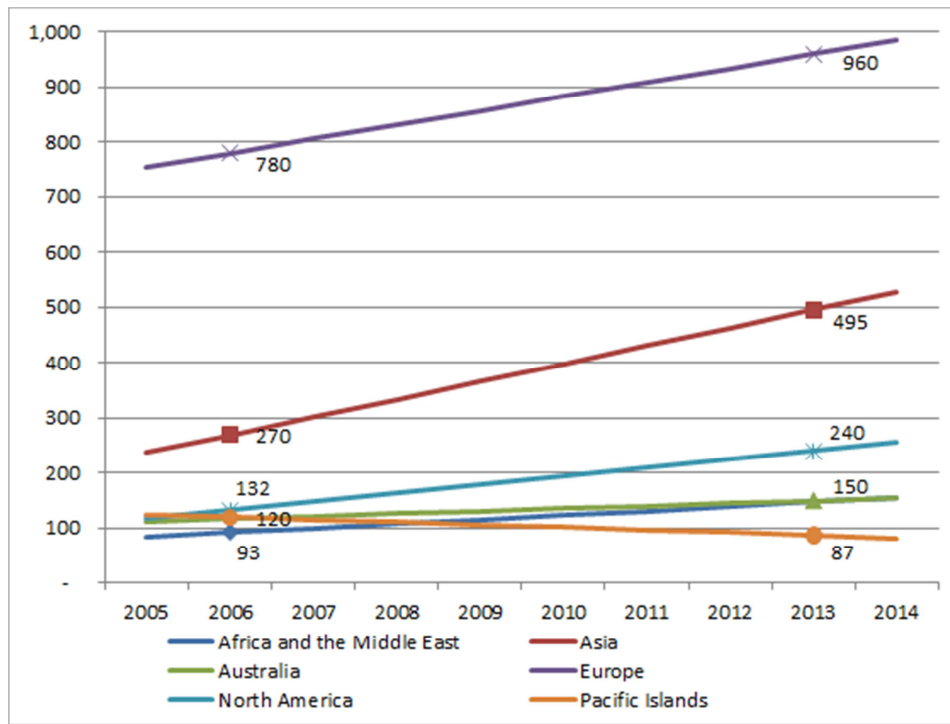


Source: GWRC migrant tool; author's calculations

Figure 29 shows the employment of migrants in the IMT sector for the period 2005-2014, based on census data for 2006 and 2013 and a trend line applied. European migrants are by far the dominant group employed in this sector over the period shown, accounting for nearly half of the total migrants in the sector in 2013. Asians were the second largest group, though less than half the number of Europeans. Both groups showed strong growth between 2006 and 2013. The third largest group was of North Americans, which also grew over the period shown.

The other regions of origin all had much lower numbers of migrants working in this sector, with Pacific Islanders being the lowest, and declining over the period.

**Figure 29: Number of migrants employed in IMT by region/country of origin, 2005-2014**

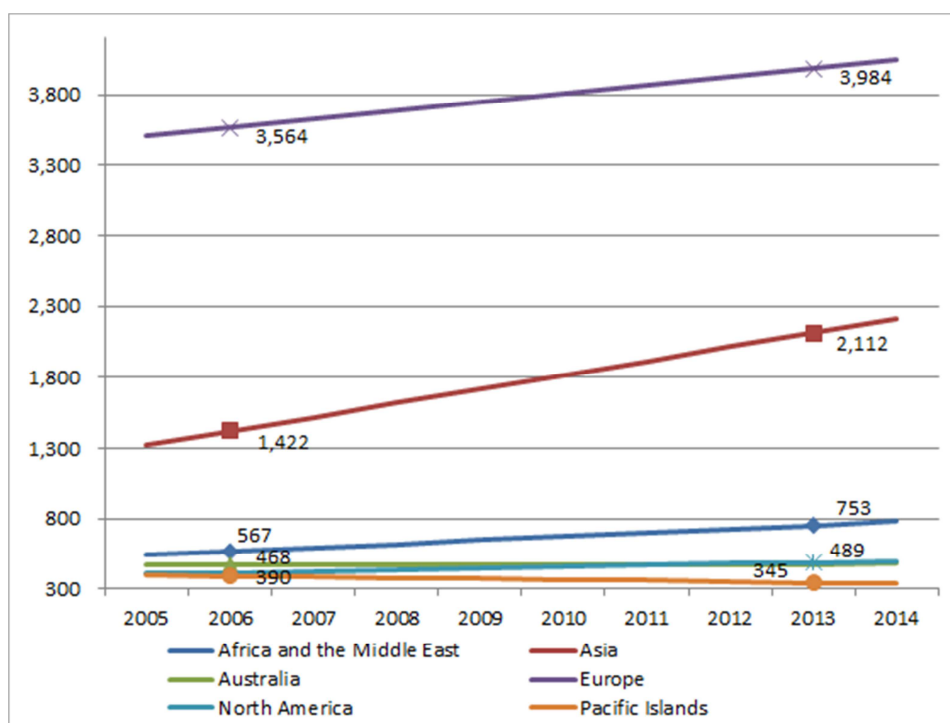


Source: GWRC migrant tool; author's calculations

Figure 30 shows the employment of migrants in the PSTS sector for 2005-2014, based on census data for 2006 and 2013 and a trend line applied. The pattern is similar to that for the IMT sector, with European migrants dominating the migrant employment numbers, again accounting for nearly half of the total, and increasing between 2006 and 2013. Asians were again the second largest group and showed an increasing trend. The third largest group was of migrants from Africa and the Middle East, showing moderate growth over the period.

The other regions of origin all had relatively low numbers of migrants working in the PSTS sector, with no discernible growth over the period.

**Figure 30: Number of migrants employed in PSTS by region/country of origin, 2005-2014**



Source: GWRC migrant tool; author's calculations

### 4.3 University qualifications

The share of migrants in the Wellington region with university qualifications in 2013 are shown in Figure 31, by region/country of origin and by time in New Zealand.

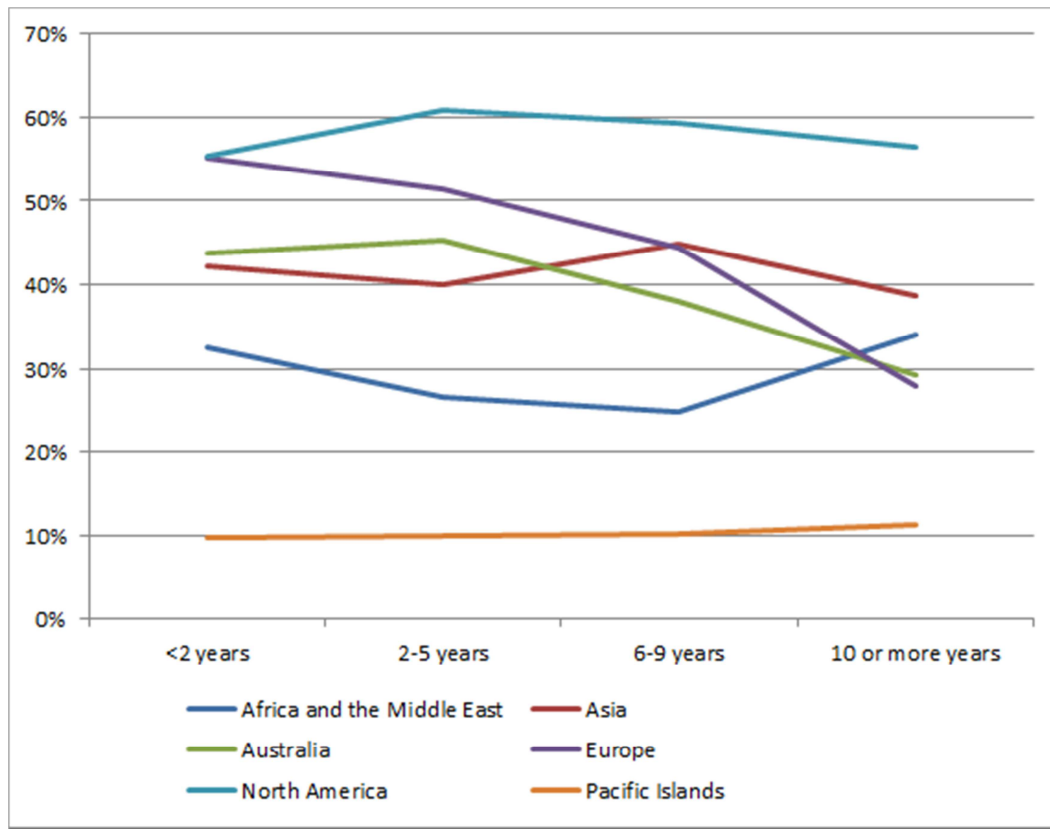
It can be seen from the figure that Europeans and North Americans tend to arrive in New Zealand with the highest proportion of university qualifications of slightly over 55% in both cases. North Americans are shown to consistently have the highest prevalence of university qualifications irrespective of the amount of time they have been in New Zealand, at over 55% for all categories. Europeans who have been in New Zealand longer than two years, on average have a lower prevalence of university qualifications, falling to a rate of less than 30% for those having been in New Zealand for 10 years or more.

On average in 2013, 42% to 44% of migrants originating from Australia and Asia had university qualifications, with a moderate drop-off in this rate for Australian migrants after five years in New Zealand, while Asians tended to maintain a similar rate across all categories.

One third of migrants from Africa and the Middle East had university qualifications in the less than two year category. This rate was lower for those in the country between two and nine years, but was higher for those in the country for 10 years or more.

The lowest share of migrants with university qualifications was consistently among the Pacific Islanders at around 10% across all categories.

**Figure 31: University qualified migrants by region/country of origin and time in New Zealand, 2013**



Source: GWRC migrant tool; author's calculations

#### 4.4 English-speaking ability

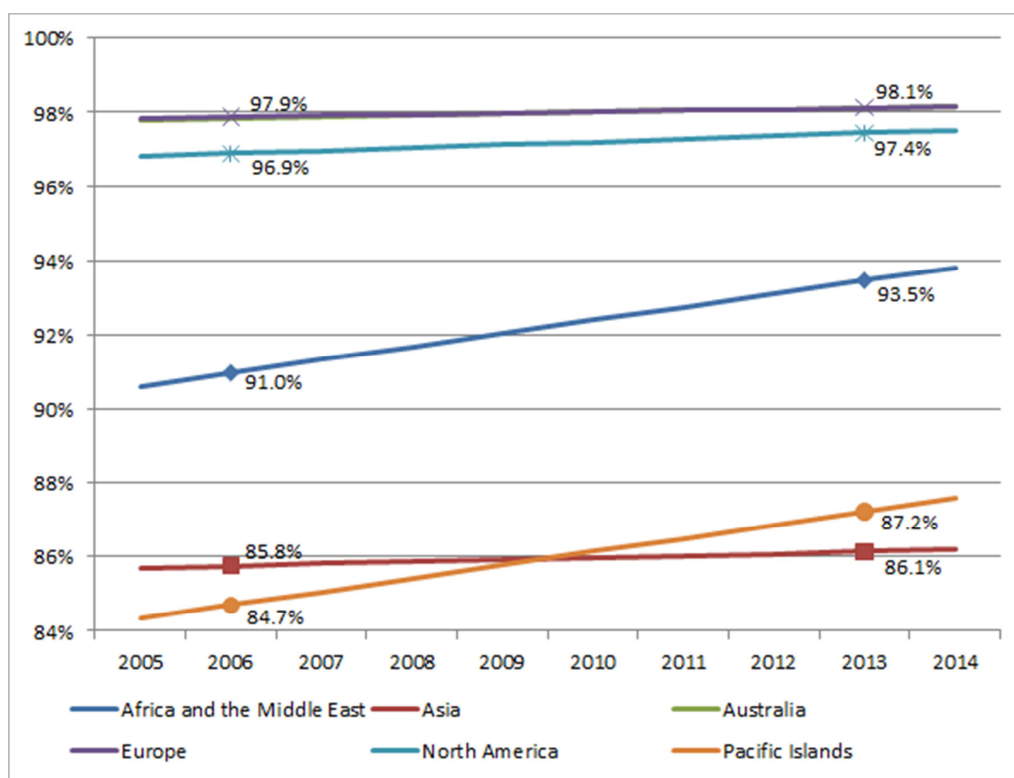
English speakers are shown by region/country of origin for the period 2005-2014 in Figure 32 based on census data for 2006 and 2013, and a trend line applied. The data represent those who answered 'English' in the census to the question: 'In which language(s) could you have a conversation about a lot of everyday things?' Respondents may also answer with other languages. This statistic is presented purely to assess the share of migrants with self-assessed English-speaking ability.

As shown in Figure 14 above, 92.5% of migrants in the Wellington region in 2006 said they identified as English speakers, rising slightly to 93.0% in 2013. In Figure 32 it can be seen that 98.1% of European migrants in the region were English speakers, and the Australian series has exactly the same value (hence not being clearly visible in the chart). The North American rate was marginally lower at 97.4%. From Africa and the Middle East, the rate in 2013 was 93.5%, up from 91.0% in 2006.

The lowest rates were among Asians and Pacific Islanders. In 2006, the rate for Pacific Islanders was 84.7%, and for Asians it was 85.8%. By 2013 the rate had increased among Pacific Islanders to 87.2%, while it had increased only marginally among Asians, to 86.1%.



**Figure 32: Migrants who identified as English speakers by region/country of origin, 2005-2014**



Source: GWRC migrant tool; author's calculations

#### 4.5 International students

Attracting international students to study in New Zealand is one way of attracting skilled migrants, since a proportion of those students will choose to stay in the country after completion of their studies. According to Statistics New Zealand data, the transition rate for students from overseas who studied in New Zealand at bachelor level or above who then became New Zealand residents from the 2010 cohort was 23%. This demonstrates that international students are a significant source of migrants, and in particular of relatively skilled migrants. The share for Wellington is not known, but may be assumed to be similar.

According to the Education New Zealand (ENZ) website, in 2014 110,198 international students were enrolled with a New Zealand education provider – this includes offshore students enrolled in a formal qualification at universities, institutes of technology and polytechnics (ITPs), wānanga (a wānanga is a publicly owned tertiary institution that provides education in a Māori cultural context), and government-funded private training establishments (PTE), and also includes students enrolled in a non-formal qualification at a non-government funded PTE.<sup>17</sup> The numbers enrolled in each are shown in Table 13. Of these 62% went to Auckland, 8% to Canterbury, 6% to Wellington, 5% to Otago and 5% to Waikato.

<sup>17</sup> PTEs offer vocational courses at certificate and diploma level in the New Zealand Qualifications Framework. According to Infometrics, in the article entitled 'Can a simple name change result in increased economic growth?', 27 October 2015, there were over 500 PTEs in New Zealand. The article also states that in 2014 PTEs accounted for 49% of New Zealand's total number of international students.

As shown in Table 13, the highest percentage of international students in 2014 enrolled in PTEs, at 30.0%, with 22.6% enrolling at universities, 12.8% at ITPs and 18.6% at English language schools (ELS). (Adding the PTE and ELS numbers gives the total of 49% quoted by Infometrics in the paper referenced in footnote 8.) A total of 15.9% were enrolled at primary or secondary schools.

**Table 13: Enrolments by international students with New Zealand education providers, 2014**

| Sector                                   | Number of enrolments | Proportions in each sector |
|--|----------------------|----------------------------|
| Primary schools (including intermediate) | 2,410                | 2.2%                       |
| Secondary                                | 15,097               | 13.7%                      |
| ITP                                      | 14,151               | 12.8%                      |
| University                               | 24,956               | 22.6%                      |
| PTE (excluding ELS)                      | 33,112               | 30.0%                      |
| English language schools (ELS)           | 20,548               | 18.6%                      |
| Total                                    | 110,274              |                            |

Notes: Total enrolments also includes one wānanga enrolment. The total number of enrolments is higher than the headcount of 110,198.

Source: ENZ website, 'New Zealand International Education Snapshot: 2014 full year report', page 25.

Looking at the key source countries for international students, ENZ states on its website (accessed 29 October 2015) that 'China is New Zealand's largest source country for international students and has shown steady growth in student numbers from 2010-2014' and 'India is New Zealand's second-largest and fastest-growing source country for international students'. In 2014 the five highest source countries were all Asian countries as follows: China 30,179; India 20,227; Japan 9,743; Korea 7,910; and Thailand 3,692.

Looking specifically at New Zealand's tertiary education organisations, i.e. universities, polytechnics and PTEs that receive government funding, according to the Ministry of Education 'Education Counts' website,<sup>18</sup> in 2013 a total of 47,951 international students were enrolled with New Zealand tertiary education organisations. Of these 47,951, the top five source countries were China (33.2%), India (16.1%), US (4.9%), South Korea (4.3%) and Malaysia (3.9%).

The flow of students from overseas is likely to continue to be dominated by the Asian countries, particularly China and India with preferences for each type/supplier of education reflected in the numbers presented here.

It is also interesting to note, as stated in the Education Counts reference, that, 'International students enrolled in New Zealand's eight universities have had a consistently higher rate of completion of bachelors degree courses. During 2013 the completion rate for international students was 94%, while the same ratio for domestic students was 87%.'

A study of international students was carried out called the Graduate Longitudinal Study New Zealand (GLSNZ) by the University of Otago's National Centre for Lifecourse Research (NCLR) and

<sup>18</sup> Source: [https://www.educationcounts.govt.nz/\\_data/assets/pdf\\_file/0019/163036/Factsheet-Outcomes-for-International-Students.pdf](https://www.educationcounts.govt.nz/_data/assets/pdf_file/0019/163036/Factsheet-Outcomes-for-International-Students.pdf) Ministry of Education website, 'Education Counts' accessed 19 November 2015.

published in 2012 looking at findings for doctoral (PhD) students.<sup>19</sup> Of the sample, 41.5% were from Asia of the international students, 18.9% from Europe and 17.0% from 'the Americas', i.e. North, Central and South America combined.

With regard to retention, for the near future (the subsequent two years), the NCLR (2012) study found:

...approximately 80% of domestic PhD students indicated that they planned to work in New Zealand in the next two years, compared to approximately 50% of international PhD students. Similar percentages (approximately 44%) of international and domestic PhD students planned to work overseas. With respect to non-PhD students, just over 85% of domestic students indicated that they would work in New Zealand in the next two years, compared to approximately 63% of international students. (p.4)

The employment status was significantly different for each group, with domestic students faring better for every comparison. Looking at their 2011 employment status, 38.2% of international PhD students were not employed at the time of the survey compared to 27.8% of domestic PhD students. Of those who were employed, slightly higher proportions of domestic PhD students than international PhD students reported that 'their work was related to their field of study, and that the skills they had gained from their studies could be applied to their job' (*ibid.*, p.5).

The earning levels of international PhD students was substantially lower than that of domestic PhD students – the median income for international PhD students was in the range NZ\$20,001 to NZ\$25,000 compared to NZ\$40,001 to NZ\$50,000 for domestic PhD students.

#### **4.6 Section summary**

Key findings from section 4 are as follows, with relation in turn to income, employment, qualifications, and English-speaking ability, the key findings may be summarised as follows:

- In 2013 18.2% of migrants earned \$70,000 or above; 47.4% earned \$30,000 or less. Migrants were more than proportionally represented in the lowest and highest income brackets.
- North Americans earned significantly more than the average income for migrants in 2013, followed by Europeans. Pacific Islanders earned the lowest average followed by Asians.
- In 2013 Europeans accounted for 39.0% of total migrant employment (headcount), Asians 27.9%, Pacific Islanders 12.8%.
- The strongest growth in numbers of employed migrants between 2005 and 2014 was from Asia, accounting for more than 60% of the total increase in employed migrants in the region.
- For Asians and Pacific Islanders, the full-time employment rate for the first five years in New Zealand was relatively low (thereafter the difference greatly reduces).
- The majority of the region's migrant workforce in 2013 were paid employees. North Americans had the lowest proportion and Pacific Islanders had the highest. North Americans had the highest proportion of self-employed workers without employees.
- The migrants most likely to be employers were Asians, Australians and Europeans.

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<sup>19</sup> The number of respondents in the sample was 1,004 international students, of whom 212 were PhD students, and the study also covered 223 domestic doctoral students. Sampling was done across the eight New Zealand universities between July and December 2011.

- The highest unemployment rate in 2013 was for migrants from Africa and the Middle East, and Pacific Islanders. Europeans had the lowest unemployment rate.
- Migrants employed in manufacturing were predominantly from Europe, Pacific Islands and Asia, respectively, with a declining trend in the migrants employed in this sector.
- In the IMT sector, European migrants accounted for nearly half of the total migrants in 2013, followed by Asians and North Americans, and all grew over the 2005-2014 period.
- The PSTS sector also grew, with European migrants dominating, followed by Asians and migrants from Africa and the Middle East.
- Europeans and North Americans tend to arrive in New Zealand with the highest proportion of university qualifications of around 55% in both cases.
- The lowest share of migrants with university qualifications was among the Pacific Islanders.
- In 2013 93.0% of migrants in the region identified as English speakers – the highest rates for Europeans, Australians and North Americans and the lowest for Asians and Pacific Islanders.

With regard to international students in New Zealand, the key findings may be summarised as follows:

- 23% of international students in New Zealand became New Zealand residents from a sample cohort from 2010.
- Of the 110,198 international students enrolled in New Zealand in 2014, 62% went to Auckland, 8% to Canterbury and 6% to Wellington.
- In 2014 30.0% of international students enrolled at PTEs and 22.6% at universities.
- The five highest source countries for international students in 2014 were all Asian, led by China and India.
- The completion rate of bachelors degree courses in 2013 was higher for international students than for domestic students.
- A 2012 study showed that international PhD students tended to earn less, were less likely to be employed, and were less likely to get jobs related to their area of study than domestic PhD students.

## 5 Growth scenarios and identifying employment gaps

As discussed in section 1, the stated aspirations for the Wellington region are for economic growth and to build a resilient and diverse economy. BERL produced a set of growth scenarios for the GWRC in 2014 based on assumptions around the growth of key sectors which relate to the focus sectors named in the WRS. These scenarios are described in section 5.1 and form the basis of projections of potential gaps in employment out to 2031, identified in section 5.2.

### 5.1 Summary of the BERL growth scenarios

BERL produced a report for the GWRC entitled 'Growth scenarios for the Wellington region: Towards 2041' in August 2014, hereafter referred to as BERL (2014). The report presented the situation for the region, broken down by territorial authorities (TAs), in 2013 for employment and GDP and then assumed four scenarios subject to specific assumptions about the nature of growth in the region. These scenarios were produced according to a business as usual case; one each according to the WRS focus areas of commercialisation of innovation, and building world-class infrastructure; and the fourth assuming that all of these aspirations of the two focus areas are met.

Projections were then provided for employment and GDP out to 2021, 2031 and 2041 associated with each growth scenario. For this report, the 2031 forecasts are used. The base year in the BERL report is 2013.

The four scenarios are as follows:

- Business as usual
- Business and IT connections
- Infrastructure connections
- Aspirational

Assumptions central to each scenario are given below and the associated forecasts of employment measured in FTEs and GDP for the region for 2013 and 2031. The key data of relevance to this report from the growth scenarios are summarised in Table 14.

The **business as usual** (BAU) scenario is the base case against which the other scenarios are compared. It assumes a continuation of observed trends in employment patterns and GDP, and assumes that the relative regional and national patterns are unchanged. As shown in Table 14, this results in regional growth in FTEs between 2013 and 2031 of 35,900 or 15.8%, and in GDP of \$11.4bn or 49.5%.

The **business and IT connections** scenario is based on the WRS focus area of commercialisation of innovation. It assumes that 'science and technology-based innovation is supported, particularly in the IT industry' and that this is the key driver of improvements in economic performance in the region. Table 14 shows that this results in FTEs growing by 56,900 (25.1%) and GDP by \$15.2bn (66.0%).

The **infrastructure connections** scenario is based on the WRS focus area of building world-class infrastructure. It assumes increased investment in infrastructure in the region, resulting particularly in 'increased activity in the transportation, wholesale trade and product manufacturing industries'. Table 14 shows that this results in FTEs growing by 48,200 (21.3%) and GDP by \$13.2bn (57.1%).

The **aspirational** scenario assumes that ‘the combined impacts of the business and IT connections scenario and the infrastructure connections scenario are realised’. This scenario therefore has the largest expected increase in FTEs at 76,700 (33.8%) and GDP at \$17.4bn (75.8%).

**Table 14: BERL growth scenarios and associated growth in FTEs and GDP, 2013 to 2031**

| BERL scenarios              | FTEs    |         |        |          | GDP (\$m) |        |        |          |
|-----------------------------|---------|---------|--------|----------|-----------|--------|--------|----------|
|                             | 2013    | 2031    | Change | % change | 2013      | 2031   | Change | % change |
| BAU                         | 226,800 | 262,700 | 35,900 | 15.8%    | 23,020    | 34,420 | 11,400 | 49.5%    |
| Business and IT connections | 226,800 | 283,700 | 56,900 | 25.1%    | 23,020    | 38,220 | 15,200 | 66.0%    |
| Infrastructure connections  | 226,800 | 275,000 | 48,200 | 21.3%    | 23,020    | 36,170 | 13,150 | 57.1%    |
| Aspirational                | 226,800 | 303,500 | 76,700 | 33.8%    | 23,020    | 40,460 | 17,440 | 75.8%    |

Source: BERL (2014)

For the purposes of this report, three of these scenarios are used in the analysis, with the BAU scenario being used as the base case, the aspirational scenario representing a relatively ‘high’ growth scenario, and the business and IT connections scenario enabling the focus to be on the impacts from an expansion in that particular area of the economy, and effectively acting as a ‘middle’ case scenario, with growth in GDP and FTEs predicted to fall between the levels of the aspirational and BAU forecasts, as shown in Table 13.

The eight industry classification used by BERL and shown in Tables 15 and 16 is a summary of the higher level of classification applied by BERL, as shown in Table A1 in the appendix.

The breakdown of FTEs growth by scenario and by industry are provided in Table 15. It can be seen that the total increase in FTEs under the BAU scenario between 2013 and 2031 is 35,900, and under the aspirational scenario is more than double this, at 76,700. The business and IT connections scenario has FTEs increasing by approximately the mid-point of these two extremes, at 56,900.

FTE increases by industry vary according to each scenario. For example, in Table 15, product manufacturing; wholesale and distribution; and business services all show a decline or at most unchanged out to 2031 under the BAU and business and IT connections scenarios, and increase only under the aspirational scenario. Under the BAU scenario, the largest increases are expected in the social services; arts and recreation services sector; followed by retail trade and services, and then by communications and IT. As expected, the largest increase in FTEs under the business and IT connections scenario is in the communications and IT sector. The aspirational scenario shows the highest increases for each sector.

It should be noted that the sector called ‘social services; arts and recreation services’ includes the public sector – people working for local and central government, as shown in Table A1. This sector is relatively large in the Wellington region as it is home to the seat of government. It may be expected to increase in FTEs as the population grows, as social service provision is linked to the number of people in the population, such as services relating to government, health and education.

**Table 15: FTEs by industry (2013) and additional FTE requirements for three BERL growth scenarios out to 2031 by industry**

| Industry                                      | Base year<br>2013 | BAU            |                           | Business and IT connections |                           | Aspirational   |                           |
|---|-------------------|----------------|---------------------------|-----------------------------|---------------------------|----------------|---------------------------|
|   |                   | 2031           | Difference (%)            | 2031                        | Difference (%)            | 2031           | Difference (%)            |
| Primary production                            | 8,900             | 9,800          | 900<br>(10.1%)            | 9,800                       | 900<br>(10.1%)            | 10,500         | 1,600<br>(18.0%)          |
| Product manufacturing                         | 8,200             | 8,100          |                           | 8,100                       |                           | 9,300          | 1,100<br>(13.4%)          |
| Infrastructure                                | 18,800            | 22,800         | 4,000<br>(21.3%)          | 22,800                      | 4,000<br>(21.3%)          | 27,800         | 9,000<br>(47.9%)          |
| Wholesale and distribution                    | 16,400            | 15,800         |                           | 15,800                      |                           | 18,900         | 2,500<br>(15.2%)          |
| Communications and IT                         | 32,300            | 39,100         | 6,800<br>(21.1%)          | 55,600                      | 23,300<br>(72.1%)         | 55,600         | 23,300<br>(72.1%)         |
| Retail trade and services                     | 39,200            | 48,700         | 9,500<br>(24.2%)          | 48,700                      | 9,500<br>(24.2%)          | 56,100         | 16,900<br>(43.1%)         |
| Business services                             | 24,400            | 22,000         |                           | 24,400                      |                           | 25,900         | 1,500<br>(6.1%)           |
| Social services; arts and recreation services | 78,700            | 96,400         | 17,700<br>(22.5%)         | 98,500                      | 19,800<br>(25.2%)         | 99,300         | 20,600<br>(26.2%)         |
| <b>Total</b>                                  | <b>226,800</b>    | <b>262,700</b> | <b>35,900<br/>(15.8%)</b> | <b>283,700</b>              | <b>56,900<br/>(25.1%)</b> | <b>303,500</b> | <b>76,700<br/>(33.8%)</b> |

Source: BERL (2014); author's calculations.

The net increases in FTE requirements across the industries are also shown in Table 15. The figures for those sectors expected to reduce requirements are not shown, since this analysis is focusing on the gaps that are likely to need to be filled to reach any growth aspirations.

The figures in the table show that the sectors expected to grow most strongly and therefore require the largest increase in employment out to 2031 under the BAU scenario are social services, arts and recreation services; retail trade and services; communications and IT; and infrastructure, all increasing by over 21%, with the largest absolute increase being in social services, arts and recreation services, at 17,700. A smaller increase of 10% is expected for primary production. Under the business and IT connections scenario, the picture is similar, with a much higher increase in the required FTEs in communications and IT of 23,300 (72.1%) and slightly higher in the social services, arts and recreation services sector of 19,800 (25.2%). The aspirational scenario sees an increase in the requirements of every one of the eight sectors, most notably in communications and IT (23,300 or 72.1%); social services, arts and recreation services (20,600 or 26.2%); retail trade and services (16,900 or 43.1%); and infrastructure (9,000 or 47.9%).

It is not possible with the available data sets to forecast which industries will face the most issues in filling employment gaps. However, this section has shown in which industries there is expected to be growth and therefore these are the sectors which will need to attract more FTEs in order to achieve forecast growth levels.

Putting the employment requirements into context, GDP under the three BERL growth scenarios is shown in Table 16 by industry. Under the BAU scenario, GDP in the Wellington region increases by 49.5% between 2013 and 2031, rising in every industry sector. The business and IT connections scenario shows similar increases with the exception of notably larger increases in communications and IT, and in business services. The aspirational scenario sees GDP rise across all sectors, with the highest increases in total and across each sector, a minor exception being in the social services, arts and recreation services sector, where the increase is expected to be marginally below that of the business and IT connections scenario. Patterns of increase reflect the patterns described above for FTEs.

**Table 16: GDP for three BERL growth scenarios by industry, 2013 and 2031, \$m**

| By industry                                   | Base year<br>2013 | BAU    | Business and IT<br>connections<br>2031 | Aspirational |
|---|-------------------|--------|--|--------------|
| Primary production                            | 1,490             | 2,410  | 2,410                                  | 2,570        |
| Product manufacturing                         | 1,180             | 1,460  | 1,460                                  | 1,670        |
| Infrastructure                                | 1,750             | 3,210  | 3,210                                  | 3,890        |
| Wholesale and distribution                    | 2,160             | 3,090  | 3,090                                  | 3,680        |
| Communications and IT                         | 5,800             | 7,360  | 10,450                                 | 10,450       |
| Retail trade and services                     | 2,130             | 3,710  | 3,710                                  | 4,270        |
| Business services                             | 2,800             | 3,540  | 4,110                                  | 4,200        |
| Social services; arts and recreation services | 5,730             | 9,640  | 9,780                                  | 9,730        |
| Total   | 23,020            | 34,420 | 38,220                                 | 40,460       |

Source: BERL (2014)

## 5.2 Identifying the employment gaps – will the forecast population meet requirements?

The BERL scenarios forecast the FTE requirements for three growth scenarios. With any of the three sets of growth scenarios the region will need to employ more people, with the right skills, and aim to retain them. Additional FTEs required under each scenario are shown in section 5.1. This section looks at the base case forecasts for population and implied FTE availability for the Wellington region out to 2031 and then identifies the apparent gap if nothing changes from the base case assumptions. This will indicate whether there is expected to be an issue with labour supply for the region in aggregate terms.

Section 2 shows the Wellington regional population forecasts out to 2031 based on five-yearly forecasts from Statistics New Zealand. As shown in Table 17 below, the population is expected to rise between 2013 and 2031 from 486,700 to 534,900, an increase of 48,200 or 9.9%. It should be noted that in Table 17, the migrant numbers and percentages are a subset of the total Wellington regional numbers and percentages, as migrants are included in the totals, due to the nature of the available data sets.

For the migrant population forecasts, section 2 assumes that the migrant population increases at the same rate as between 2006 and 2013 (using census data). Therefore of the total increase in population in the region of 48,200, of this 32,068 (66.5%) are forecast to be migrants and the remainder from the New Zealand-born population. The same share of people of working age in 2013



is assumed out to 2031 and this is shown in Table 17 to be 79.4% among the total Wellington regional population, and 91.4% for the migrant population of the region.

The share of the population employed in 2013 is shown in the right-hand-side column of Table 17. The share of the working age migrant population who were employed in 2013 was 62.0% compared to 67.5% for the total regional population. These shares are assumed to continue out to 2031. It should be noted at this point that migrants appear to be facing some kind of employment issue relative to the Wellington population overall, as reflected in the lower employment rate of working age people. As shown in Table 17, the share of people in the working age category – ages 18-64 – is significantly larger for migrants than for the general population at 91.4% versus 79.4% in 2013, so it might be expected that the workforce employment rate would be higher. However, it is significantly lower.

**Table 17: Employment rates and numbers employed, 2013 and 2031, Wellington regional population and migrant component**

| Population group            | Population | Population of working age | Share of population of working age | Population employed | Employment rate (people of working age) |
|-----------------------------|------------|---------------------------|------------------------------------|---------------------|---|
| Wellington total 2013       | 486,700    | 386,300                   | 79.4%                              | 260,700             | 67.5%                                   |
| Wellington total 2031       | 534,900    | 424,557                   | 79.4%                              | 286,518             | 67.5%                                   |
| Change 2013 to 2031         | 48,200     | 38,257                    |                                    | 25,818              |   |
| Migrants in Wellington 2013 | 113,031    | 103,302                   | 91.4%                              | 64,026              | 62.0%                                   |
| Migrants in Wellington 2031 | 145,099    | 132,610                   | 91.4%                              | 82,191              | 62.0%                                   |
| Change 2013 to 2031         | 32,068     | 29,308                    |                                    | 18,165              |   |

Source: Statistics New Zealand; author's calculations

Table 17 shows the base case forecasts for the additional number of migrants employed and the additional number of total people employed in the Wellington region in 2013 and 2031, assuming the same shares of people in the population being of working age and the share of those people being employed, in 2031 as in 2013. It can be seen that in 2031, the forecasts are for 25,818 more people employed in the region in total out of a total additional population of working age of 38,527, and of the 25,818, 18,165 (70.4%) would be migrants.

It should be noted at this point that the trend is for an ageing population and therefore the total of 38,527 may be on the high side. It is possible that the 79.4% share of people being of working age may fall for this reason. However, it is also possible that this percentage will rise if older people leave the region, and since there are no reliable forecasts for these impacts, this number is sufficient for the base analysis of this report.

Looking next at the BERL growth scenarios, as summarised in Table 18, the requirements of FTEs for each scenario are shown in the first column, ranging from 35,900 to 76,700. Therefore, even under the BAU case, there is expected to be a shortfall in the labour market, even if all 25,818 extra available workers are employed, and assuming a ratio of one employed person to one FTE and each available person matching the roles needing to be filled, all of which conditions are unlikely to be met completely. This is therefore an underestimate of how many people will be required as not all people work full time, and some people will not have the skills required for positions available.

Therefore any shortfall will be larger than the estimates using this assumption. The estimates instead will provide a floor value and a valuable indication of any expected shortfalls.

**Table 18: Identification of employment shortfalls**

| BERL scenario               | Required FTEs | Wellington employed forecast | Shortfall | Implied additional immigration requirement |
|-----------------------------|---------------|------------------------------|-----------|--|
| BAU                         | 35,900        | 25,818                       | 10,082    | <b>17,798</b>                              |
| Business and IT connections | 56,900        | 25,818                       | 31,082    | <b>54,871</b>                              |
| Aspirational                | 76,700        | 25,818                       | 50,882    | <b>89,826</b>                              |

Source: Statistics New Zealand; author's calculations

Table 18 shows a simple calculation whereby the number of FTEs required under each BERL scenario is compared to the expected availability of additional employed people in 2031 (25,818) and the difference is noted in the 'Shortfall' column. The right-hand-side column shows the implied additional immigration requirement if the shortfall is to be met entirely from immigration, and assuming the same ratio of employed people of working age within the Wellington migrant population as in 2013.

The shortfall under the BAU scenario implies an additional immigration requirement of 17,798.<sup>20</sup> The business and IT connections scenario implies an additional immigration requirement of 54,871, and the aspirational scenario requirement is an extra 89,826 immigrants.

These numbers are on the low side for the reasons mentioned above (the ageing population, the appropriateness of the skill sets of available people to fill the available positions, and the ratio of employed people to FTEs) and also because of the fact that not all people migrating to New Zealand and settling in the Wellington region will stay, so there will be more people needed to be attracted to the region than these numbers suggest. Retention is an issue that must also be considered in meeting FTE requirements of growth scenarios. The more people who decide to leave, the larger the immigration numbers need to be to get the net migration levels to those required under these scenarios.

It is not possible to exactly forecast the net and cumulative impacts of the factors listed here but all will have an inflationary impact on the implied additional immigration requirements shown in Table 18. As shown in Table 19, a conservative cumulative effect of 20% would take the BAU requirement up from 17,798 to around 21,500, the business and IT connections scenario requirement to 66,000 and the aspirational scenario requirement to around 108,000.

<sup>20</sup> In 2013 there were 113,031 migrants and 64,026 were employed. Assuming the same proportion of employment of new migrants, of 56.6% (equivalent to 91.4% of people being of working age and 62.0% of those being employed), a shortfall of 10,082 gives a requirement of 17,798 for the BAU scenario.

**Table 19: Identification of total migration requirements 2013-2031**

| BERL scenario               | Forecast base case immigration | Additional immigration requirement | Total immigration |
|-----------------------------|--------------------------------|------------------------------------|-------------------|
| Business as usual           | 29,308                         | 21,358                             | 50,666            |
| Business and IT connections | 29,308                         | 65,846                             | 95,154            |
| Aspirational                | 29,308                         | 107,792                            | 137,099           |

Source: Author's calculations

This simplified analysis would suggest therefore that for the Wellington region to achieve aspirational growth, at least 108,000 more migrants would be required to boost the region's employment levels to meet that growth by 2031. With so many unknowns, a more accurate number is not possible to confidently predict using the available data sets. However, what this analysis does show is that whatever the assumptions, there is a shortfall, and that is something that policy can address.

Table 19 shows the forecast base case migration numbers of 29,308 net additional migrants between 2013 and 2031 plus the implied additional immigration requirements inflated by 20% to give the total immigration over the period as described above. This gives an indication of the numbers of people required to settle in the Wellington region over that period. Totals range from around 50,666 to 137,099. Therefore the range 50,000 to 150,000 may be used a rough indication of requirements. Increasing the top end estimate from 137,000 to 150,000 has no downsides as the aim is to increase attractiveness of the region to migrants and to retain them. If more migrants arrive, this increases the economic potential for the region and the likelihood that enough of the migrants would stay and be employed in desired occupations and sectors to meet growth aspirations.

### 5.3 Section summary

Key findings from this section are as follows:

- The three growth scenarios out to 2031 for the Wellington region result in between 35,900 and 76,700 additional FTEs being required and an increase in GDP of between \$11.4bn and \$17.4bn.
- Under the business and IT connections and aspirational scenarios, the highest growth in FTEs is expected to be in the communications and IT sector.
- The highest growth in FTEs in the BAU scenario and second highest across all three growth scenarios is expected to be in the social services; arts and recreation services sector, which includes the public sector.
- There is expected to be a shortfall of FTEs under all three scenarios, and if this is to be met by migrants, this implies a total immigration requirement within the approximate range of 50,000 to 150,000 by 2031.

## **6 Wellington regional performance relative to New Zealand**

Section 6 looks at the Wellington region's performance in key areas compared to the rest of New Zealand to gain insight into where the region may be able to focus in order to work towards the growth aspirations. This section outlines key comparisons relating to population, GDP, income, employment, and attraction of migrants, including international students. Findings are then discussed in the summary section.

This section summarises the key areas/factors of the Wellington regional demographics and economy to see the recent trends compares this performance to the rest of New Zealand to see where there are concerns about performance. If the region is to strive and to achieve the BAU or the aspirational scenario or something in between, then it is necessary to consider these factors and assess any issues and opportunities to achieve the desired growth.

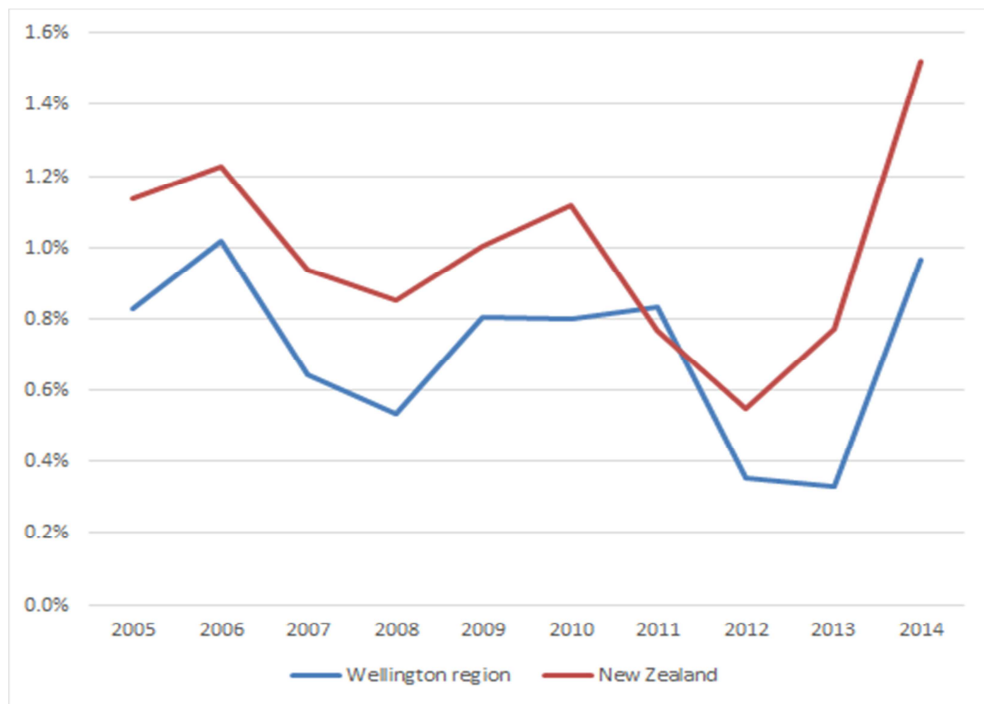
The factors/trends are as follows:

- Population
- GDP per person
- GDP by WRS focus sector
- Income – earnings per person
- Employment
- Employment by industry
- Skill levels and occupations
- Unemployment
- Attraction of international students
- Attraction of migrants

### **6.1 Population**

As shown in Figure 33, the Wellington regional population grew by between 0.3% and 1.0% per annum between 2005 and 2014 from 461,600 to 491,400, a total increase of 6.5%, and an average of 0.7% per annum. For New Zealand as a whole, the population grew by between 0.5% and 1.5% per annum, an average of 1.0% per annum, and a total of 9.1%, from 4.13 million to 4.51 million.

**Figure 33: Population growth in the Wellington region and New Zealand total, 2005 to 2014**

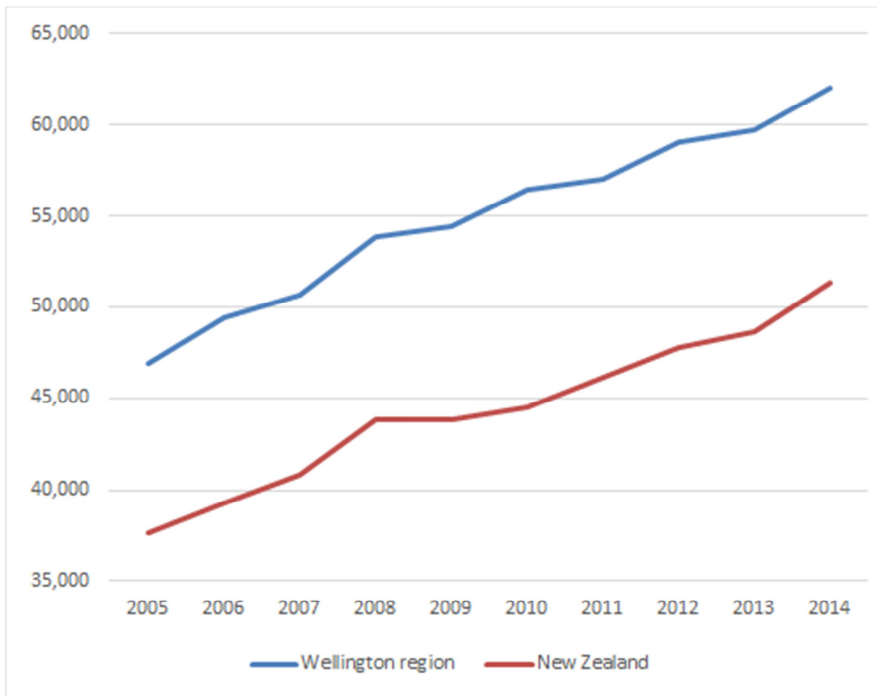


Source: Statistics New Zealand; author's calculations

## 6.2 GDP per person

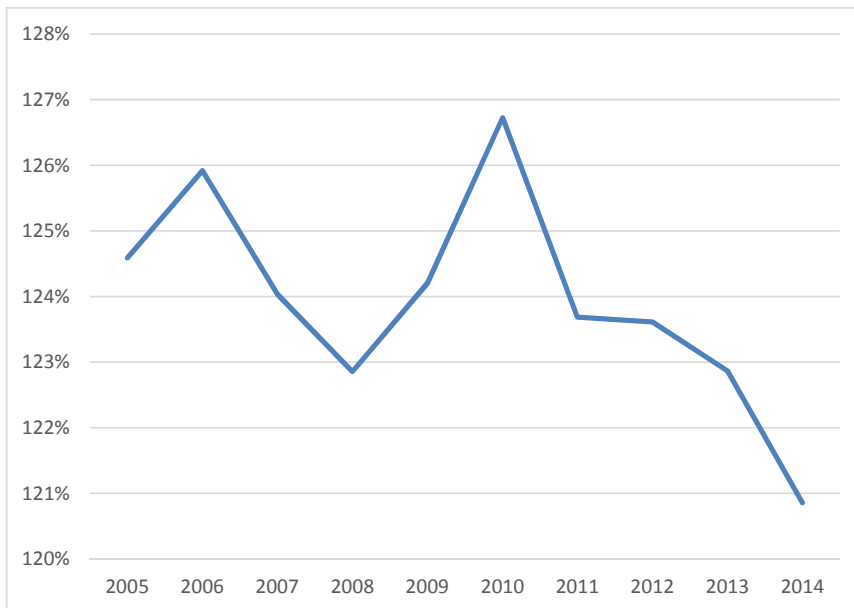
One measure of productivity is the GDP per person. Figure 34 shows the GDP per person for the period 2005-2014 for the year ended March for the Wellington region and for New Zealand as a whole. The Wellington region is shown to have a consistently higher GDP per person throughout the period, with the gap at \$10,700 in 2014 (20.9%). However, the gap which was 24.6% in 2005, peaked at 26.7% in 2010, and has since been narrowing, down to 20.9% in 2014. This trend in the gap is clearly illustrated in Figure 35.

**Figure 34: GDP per person in the Wellington region and New Zealand total, 2005 to 2014, NZ\$**



Source: Statistics New Zealand

**Figure 35: Ratio of GDP per person in the Wellington region to the New Zealand total, 2005 to 2014**



Source: Statistics New Zealand; author's calculations

### 6.3 GDP by WRS focus sector

Table 20 shows the GDP for the Wellington region and for New Zealand in 2005 and 2014 by industry (sourced from Infometrics). It can be seen that the manufacturing sector declined nationally by 10.8% and in the Wellington region by a significantly larger degree, of 27.3%. The IMT sector grew in the Wellington region by 21.8%, significantly less than the national growth rate of 35.7%. The PSTS sector grew in the Wellington region by 23.7%, behind the national average of 26.5%.

Therefore it can be seen that the Wellington region in terms of GDP performed relatively less well than the average for the country between 2005 and 2014. Employment by industry sector is shown in section 6.6.

**Table 20: GDP of three WRS focus sectors, Wellington region and New Zealand, 2005 and 2014 (\$m)**

|          | Wellington region |       |        |
|----------|-------------------|-------|--------|
|          | Manufacturing     | IMT   | PSTS   |
| 2005     | 2,924             | 1,388 | 2,440  |
| 2014     | 2,127             | 1,691 | 3,019  |
| % change | -27.3%            | 21.8% | 23.7%  |
|          | New Zealand       |       |        |
|          | Manufacturing     | IMT   | PSTS   |
| 2005     | 26,221            | 4,933 | 12,037 |
| 2014     | 23,389            | 6,695 | 15,227 |
| % change | -10.8%            | 35.7% | 26.5%  |

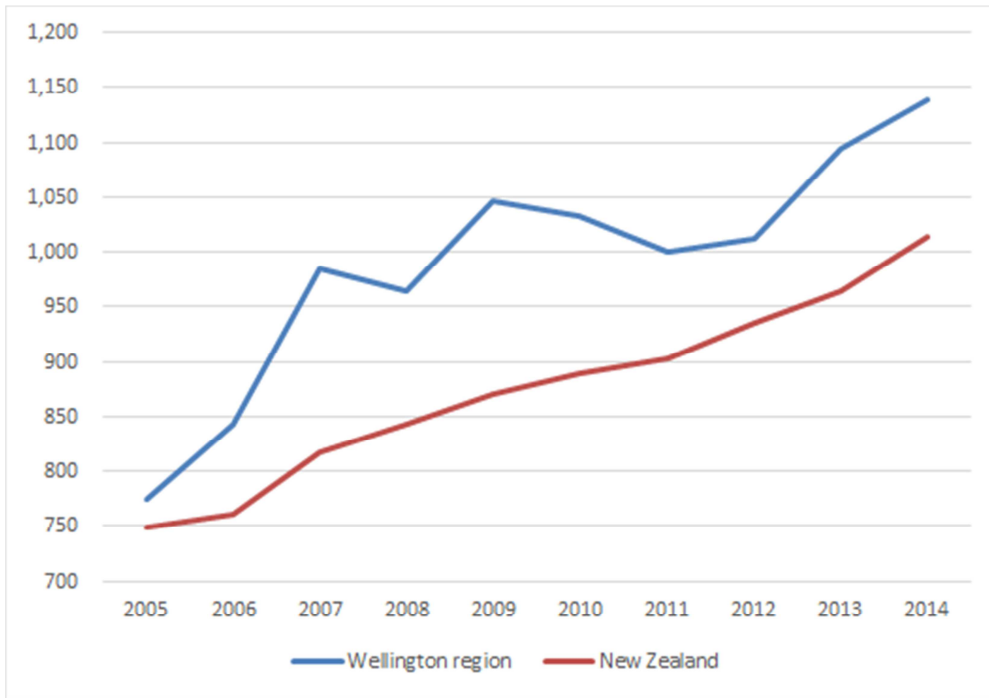
Source: Infometrics; author's calculations

### 6.4 Income – earnings per person

In the Wellington region, average earnings for employed people are the highest of any region in New Zealand. Figure 36 shows the average weekly earnings for people in paid employment between 2005 and 2014. It can be seen that the Wellington regional average has consistently been significantly higher than for the country as a whole, and in 2014 the regional average was \$1,139 compared to \$1,104 for New Zealand. This equates to a 12.3% premium for earners in Wellington. Therefore migrants in the Wellington region could reasonably be expected to be earning such a premium on average.

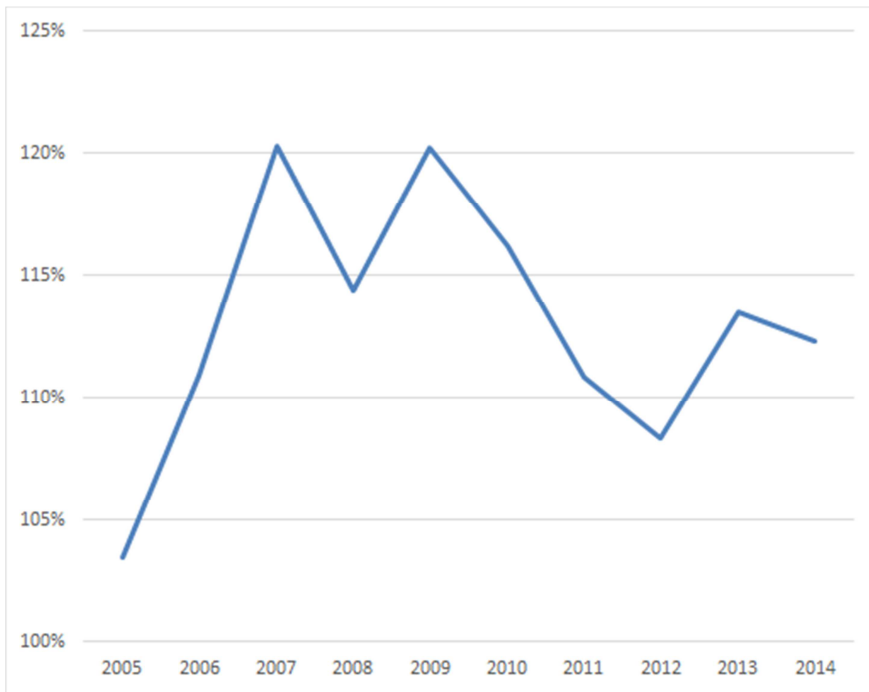
Figure 37 shows the trend in the ratio of average weekly earnings over the period. After an increase between 2005 and 2007 to peak at 120.3% of the New Zealand average, the ratio showed a downward trend to 112.3% in 2014. The total growth for New Zealand over the period was 47.2%, compared to 35.6% for the Wellington region, with the gap having notably fallen since 2009.

**Figure 36: Average weekly earnings per person in the Wellington region and New Zealand total, 2005 to 2014, NZ\$**



Source: Statistics New Zealand

**Figure 37: Ratio of average weekly earnings per person in the Wellington region to the New Zealand total, 2005 to 2014**



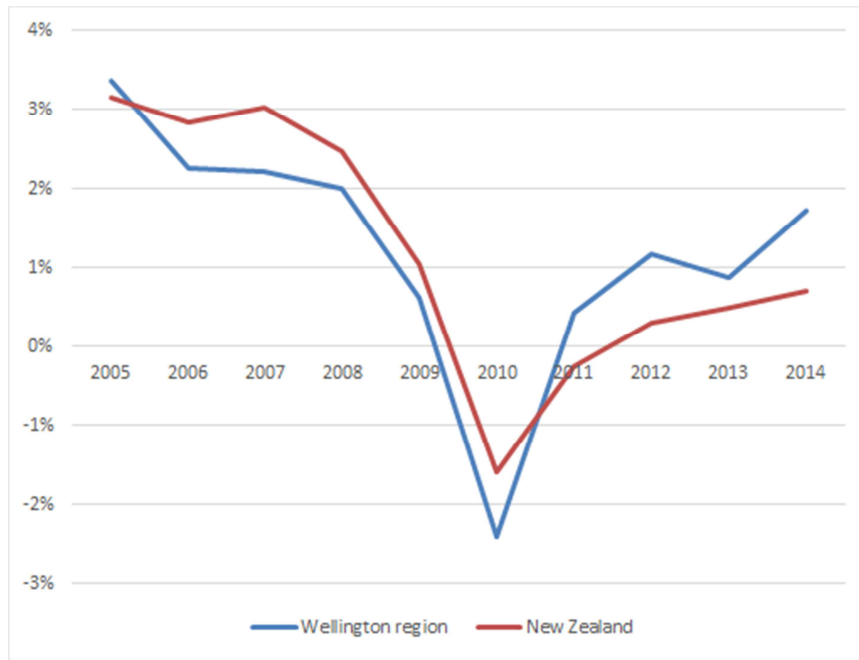
Source: Statistics New Zealand; author's calculations



## 6.5 Employment

As shown in Figure 38, between 2005 and 2010, the Wellington region was increasing the number of filled jobs at a slower rate than New Zealand as a whole. Since 2010, the situation has reversed, with the Wellington region consistently increasing the number of filled jobs at a faster rate than New Zealand. This is clearly illustrated in Figure 38.

**Figure 38: Annual change in the number of filled jobs in the Wellington region and New Zealand total, 2005 to 2014**



Source: Infometrics; author's calculations

## 6.6 Employment by industry

The employment figures by industry for 2005 and 2014 are compared for the Wellington region and for New Zealand in Table 21 with data sourced from Infometrics. The Wellington region's share of employment in each industry sector is shown in Table 22. Section 6.3 has set the context for the analysis of employment performance in each of the three industries showing GDP over time in Table 20 for the Wellington region and New Zealand in 2005 and 2014 by industry.

It can be seen that the patterns of employment differ between the Wellington region and for New Zealand as a whole. In the Wellington region, as shown in Table 21, the largest employer both in 2005 and 2014 was the PSTS sector, with 36,541 employees in 2014, representing 13.8% of the region's employment as shown in Table 22. The public administration and safety sector was second largest employer in 2014 with 11.1%, and the third largest was health care and social assistance with 9.5%. In New Zealand as a whole, the largest employer in 2014 was the health care and social assistance sector, closely followed by manufacturing. The PSTS and retail trade sectors were of a similar size to each other and the next largest after manufacturing.

In terms of growth, in the Wellington region between 2005 and 2014 the highest absolute growth (8,293) was in the public administration and safety sector. The second highest absolute growth (6,770) was in the PSTS sector. Strong gains were also made in health care and social assistance. The IMT sector was static showing virtually no change.

At a national level, between 2005 and 2014, the strongest absolute growth was in the health care and social assistance and PSTS sectors, respectively. There was also strong growth in construction and in public administration and safety.

The largest fall in employment, both in absolute and relative terms, was in the manufacturing sector, losing 4,834 employees, equivalent to a substantial fall of 26.3%. As shown in Table 6, this is similar to the proportional fall in the migrant employment in this industry. In a national context, the fall was significantly smaller, at 13.9%. Therefore it seems that the Wellington migrant pattern of employment in the manufacturing sector described in section 3.7 reflects the Wellington regional pattern, but not the national pattern. As shown in section 6.3, GDP declined in the manufacturing sector by a larger degree in the Wellington region than nationally, reflecting the employment situation stated in this section.

In the IMT sector, there was virtually no growth in employment between 2005 and 2014 in Wellington, and only 2.3% nationally. However, as shown by the migrant data in Table 6, their numbers in the IMT sector in Wellington increased by 52.5% over the same period. Table 20 shows that GDP grew strongly both at a national and regional level.

In the PSTS sector, the region showed strong growth as stated above, of 22.7%, slightly behind the national growth rate of 25.3%. Migrant employment growth in this sector in the region over the same period was 27.7% (Table 6).

**Table 21: Employment by industry (employee count), Wellington region and New Zealand, 2005 and 2014**

| Industry  | Wellington region |         |          |                 | New Zealand |           |          |                 |
|---|-------------------|---------|----------|-----------------|-------------|-----------|----------|-----------------|
|   | 2005              | 2014    | % change | Absolute change | 2005        | 2014      | % change | Absolute change |
| Agriculture, forestry and fishing                 | 4,768             | 4,305   | -9.7%    | -463            | 143,819     | 139,516   | -3.0%    | -4,303          |
| Mining  | 158               | 315     | 99.4%    | 157             | 4,051       | 6,351     | 56.8%    | 2,300           |
| Manufacturing**                                   | 18,378            | 13,544  | -26.3%   | -4,834          | 257,237     | 221,600   | -13.9%   | -35,637         |
| Electricity, gas, water and waste services        | 895               | 1,613   | 80.2%    | 718             | 9,742       | 14,243    | 46.2%    | 4,501           |
| Construction                                      | 16,180            | 18,257  | 12.8%    | 2,077           | 155,728     | 184,401   | 18.4%    | 28,673          |
| Wholesale trade                                   | 9,908             | 9,243   | -6.7%    | -665            | 112,904     | 114,756   | 1.6%     | 1,852           |
| Retail trade                                      | 22,644            | 22,185  | -2.0%    | -459            | 203,007     | 207,889   | 2.4%     | 4,882           |
| Accommodation and food services                   | 14,743            | 16,653  | 13.0%    | 1,910           | 124,767     | 138,995   | 11.4%    | 14,228          |
| Transport, postal and warehousing                 | 9,485             | 9,349   | -1.4%    | -136            | 90,914      | 95,252    | 4.8%     | 4,338           |
| Information media and telecommunications**        | 8,641             | 8,650   | 0.1%     | 9               | 42,730      | 43,730    | 2.3%     | 1,000           |
| Financial and insurance services                  | 9,861             | 11,804  | 19.7%    | 1,943           | 50,640      | 62,567    | 23.6%    | 11,927          |
| Rental, hiring and real estate services           | 5,371             | 4,855   | -9.6%    | -516            | 52,565      | 51,861    | -1.3%    | -704            |
| Professional, scientific and technical services** | 29,771            | 36,541  | 22.7%    | 6,770           | 165,607     | 207,516   | 25.3%    | 41,909          |
| Administrative and support services               | 15,227            | 13,350  | -12.3%   | -1,877          | 101,807     | 108,074   | 6.2%     | 6,267           |
| Public administration and safety                  | 21,246            | 29,539  | 39.0%    | 8,293           | 80,661      | 107,237   | 32.9%    | 26,576          |
| Education and training                            | 19,546            | 22,483  | 15.0%    | 2,937           | 157,598     | 178,003   | 12.9%    | 20,405          |
| Health care and social assistance                 | 20,767            | 25,235  | 21.5%    | 4,468           | 178,330     | 222,038   | 24.5%    | 43,708          |
| Arts and recreation services                      | 4,657             | 6,450   | 38.5%    | 1,793           | 34,481      | 41,129    | 19.3%    | 6,648           |
| Other services                                    | 10,266            | 10,654  | 3.8%     | 388             | 76,397      | 84,524    | 10.6%    | 8,127           |
| Total   | 242,510           | 265,022 | 9.3%     | 22,512          | 2,042,983   | 2,229,679 | 9.1%     | 186,696         |

Source: Infometrics; author's calculations

Note: \*\* denotes the sectors most closely related to the WRS focus sectors.

**Table 22: Wellington regional share of national total employment (employee count) by industry, 2005 and 2014**

| Industry  | Industry share of Wellington regional total |        | Wellington's share of New Zealand total |       |
|---|---|--------|---|-------|
|   | 2005  | 2014   | 2005                                    | 2014  |
| Agriculture, forestry and fishing                 | 2.0%  | 1.6%   | 3.3%                                    | 3.1%  |
| Mining  | 0.1%  | 0.1%   | 3.9%                                    | 5.0%  |
| Manufacturing**                                   | 7.6%  | 5.1%   | 7.1%                                    | 6.1%  |
| Electricity, gas, water and waste services        | 0.4%  | 0.6%   | 9.2%                                    | 11.3% |
| Construction                                      | 6.7%  | 6.9%   | 10.4%                                   | 9.9%  |
| Wholesale trade                                   | 4.1%  | 3.5%   | 8.8%                                    | 8.1%  |
| Retail trade                                      | 9.3%  | 8.4%   | 11.2%                                   | 10.7% |
| Accommodation and food services                   | 6.1%  | 6.3%   | 11.8%                                   | 12.0% |
| Transport, postal and warehousing                 | 3.9%  | 3.5%   | 10.4%                                   | 9.8%  |
| Information media and telecommunications**        | 3.6%  | 3.3%   | 20.2%                                   | 19.8% |
| Financial and insurance services                  | 4.1%  | 4.5%   | 19.5%                                   | 18.9% |
| Rental, hiring and real estate services           | 2.2%  | 1.8%   | 10.2%                                   | 9.4%  |
| Professional, scientific and technical services** | 12.3%                                       | 13.8%  | 18.0%                                   | 17.6% |
| Administrative and support services               | 6.3%  | 5.0%   | 15.0%                                   | 12.4% |
| Public administration and safety                  | 8.8%  | 11.1%  | 26.3%                                   | 27.5% |
| Education and training                            | 8.1%  | 8.5%   | 12.4%                                   | 12.6% |
| Health care and social assistance                 | 8.6%  | 9.5%   | 11.6%                                   | 11.4% |
| Arts and recreation services                      | 1.9%  | 2.4%   | 13.5%                                   | 15.7% |
| Other services                                    | 4.2%  | 4.0%   | 13.4%                                   | 12.6% |
| Total   | 100.0%                                      | 100.0% | 11.9%                                   | 11.9% |

Source: Infometrics; author's calculations

Note: \*\* denotes the sectors most closely related to the WRS focus sectors.

Table 22 shows the Wellington region's share of employment by industry in 2005 and 2014. The three WRS focus sectors are shown by the shaded rows with a double asterix. The first two columns of data show the employment in each industry as a share of the Wellington employment total, i.e. the importance in employment terms of each sector in the region. The other two columns of data show the regional employment in each sector as a share of the national employment total, i.e. the importance in employment terms of the Wellington region in each sector. So for example, in 2014, 3.3% of people employed in the Wellington region were employed in the IMT sector, and this accounted for 19.8% of the national total number of people employed in that sector. This stark difference in shares in this example shows the rationale for presenting both sets of ratios, so that the Wellington region's employment reflects the regional and national context. In this example it shows the relative importance of the IMT sector in Wellington on a national level, despite the share of employment in the Wellington region being relatively low. It is interesting to note that the Wellington region has a higher national than regional share of people working in each of the focus sectors in 2014.

The highest share of employment in both years in the Wellington region was in the public administration and safety sector, which reflects the fact that Wellington region is home to the central government, with 27.5% of the country's total employment in 2014. The next three largest shares, within the range of 17.6% to 19.8% in 2014, were in IMT, financial and insurance services, and PSTS, highest to lowest respectively. All of these shares fell slightly between 2005 and 2014.

### 6.7 Skill levels and occupations

The Wellington region has been shown to have a higher average level of skills, compared to New Zealand as a whole, when counted as the number of people in each occupation associated with specific skills levels. BERL produced a report for GWRC in 2013 entitled 'Immigration Policy Review' which looked at 'national average occupations at each skill level' where the levels are categorised as highly skilled, skilled, semi-skilled and elementary skilled. These categories are defined by MBIE in its short-term forecasts publications, for example, 'Short-term employment forecasts 2015-2018' (MBIE, 2015c). Highly skilled refers to managers and professionals; skilled refers mainly to trades people; semi-skilled refers to 'mainly clerical workers and some workers in service-related and primary production industries'. Elementary skilled refers to positions with the lowest levels of skills.

The BERL (2013) report found that in 2013 (based on Statistics New Zealand data), the Wellington labour market had above average numbers of highly skilled and semi-skilled people and below average numbers in the skilled and elementary skilled categories. In Table 23, a figure of 1.0 represents the national average, below 1.0 represents below the national average, and above 1.0 represents above the national average.

**Table 23: Ratio of employed people in occupations by skill level per region, 2013**

| Region      | Highly skilled | Skilled   | Semi-skilled | Elementary skilled |
|-------------|----------------|-----------|--------------|--------------------|
| Wellington  | 1.17           | 0.87      | 1.07         | 0.67               |
| Auckland    | 1.06           | 0.98      | 1.06         | 0.78               |
| Canterbury  | 0.93           | 1.05      | 1.01         | 1.10               |
| All regions | 0.84-1.17      | 0.87-1.08 | 0.84-1.07    | 0.67-1.55          |

Source: BERL (2013), author's calculations.

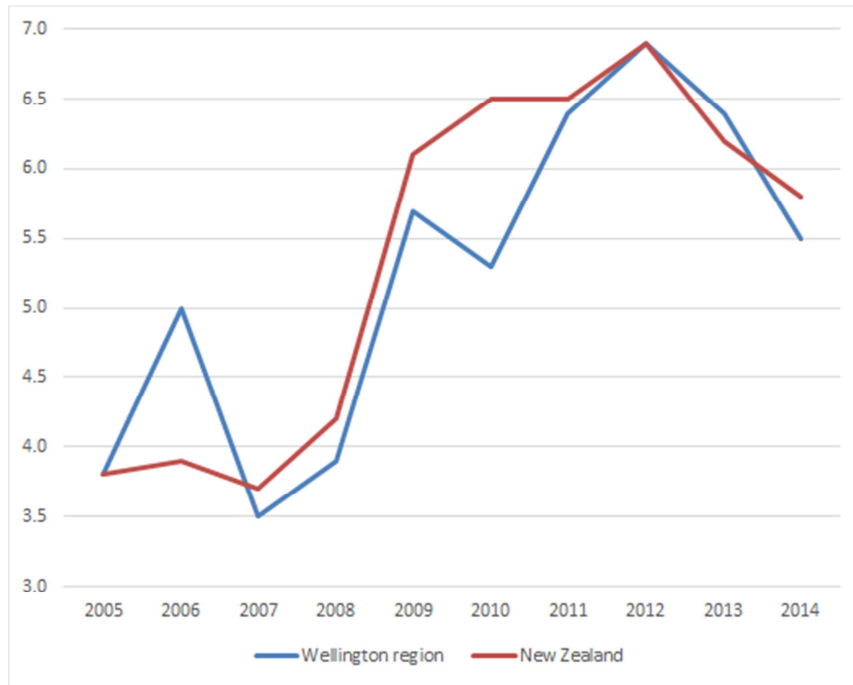
Wellington had the highest ratio across all regions for both the highly skilled and semi-skilled categories. However, in the skilled category, Wellington had the lowest ratio across the regions. It also had the lowest ratio for the elementary skilled category. The analysis is at an aggregated level so the reasons for this apparent paradox are not obvious from the report.

### 6.8 Unemployment

Using census data, the unemployment rate in 2013 in the Wellington region was 7.2%, slightly above the New Zealand average of 7.1%. In 2006, the regional rate was 5.2% and the national rate was 5.1%, so changes in the region have mirrored the national trend, according to census data.

Using annual data from Statistics New Zealand, as shown in Figure 39, the patterns of unemployment between 2005 and 2014 in the Wellington region and New Zealand were similar, with the rate lower in Wellington for most of the period with the exception of 2006 and 2013.<sup>21</sup>

**Figure 39: Unemployment rate in the Wellington region and New Zealand total, 2005 to 2014, %**



Source: Statistics New Zealand

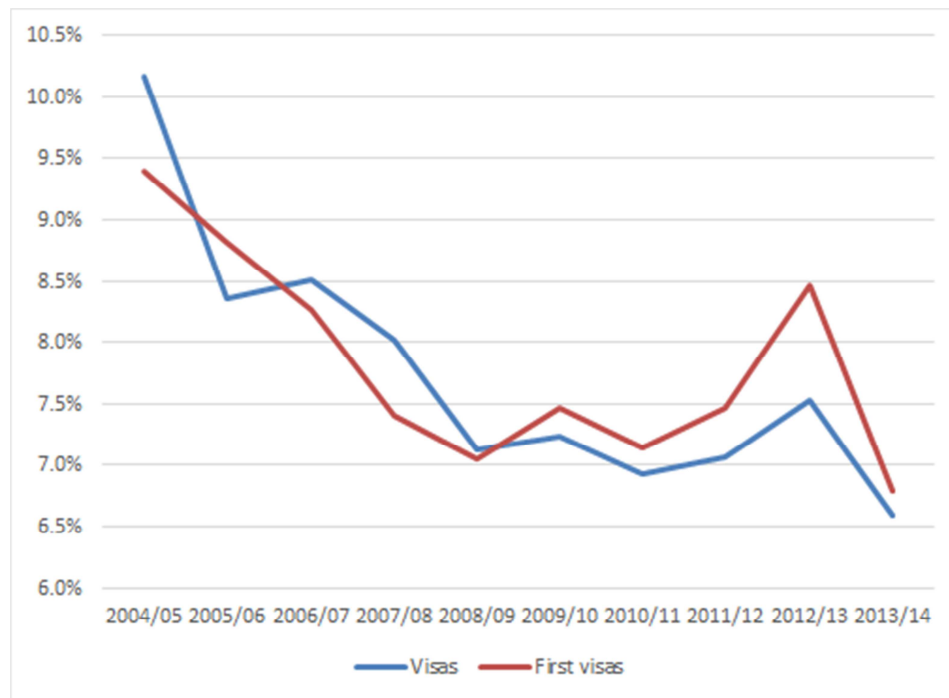
The data for the region and the country may be compared to the migrant data presented in section 3.6, which gives unemployment rates for migrants in the Wellington region of 5.6% in 2006 and 7.2% in 2013. This shows that migrants had a higher rate of unemployment than the regional population in 2006 but had the same rate in 2013.

<sup>21</sup> The figures for unemployment in these data series differ from the census data as they are sourced differently and therefore represent different estimates of unemployment.

### 6.9 Attraction of international students

As shown in Figure 40, of the total intake of international students to New Zealand over the period 2004/05 to 2013/14, 10.2% went to the Wellington region in 2004/05, and 9.4% of those getting their first visas, with these shares falling to 6.6% of the total in 2013/14 and 6.8% of those getting first visas.

**Figure 40: The Wellington region's share of the national total of visas and first visas, 2004/05 to 2013/14**



Source: Immigration New Zealand (2015); author's calculations

### 6.10 Attraction of migrants

Between 2005 and 2014, New Zealand attracted a growing number of migrants. Based on 2006 and 2013 data from Statistics New Zealand extrapolated back to 2005 and forward to 2014, in 2005 20.9% of the New Zealand population were migrants, and by 2014 this share had reached 22.6%. Wellington's share of the country's migrants was relatively constant at 11.3-11.4% over this period.

In terms of the more recent arrivals of migrants into the country, Figure 3 in section 3.3 illustrates that there has been a falling share and falling absolute number of migrants coming to the Wellington region, as shown by the series for migrants in the Wellington region having been in the country for less than two years. With 12,130 in 2005 falling to 9,989 in 2014, this suggests that the attraction has been declining for migrants to settle in Wellington.

It is relevant at this point to note that it has been acknowledged in the literature that the global demand for skilled labour has led to shortages in some countries, and this will affect New Zealand's ability to attract and retain certain groups of migrants. For example, the International Organization

for Migration published a paper entitled 'Global migration trends: An overview' in December 2014, in which it states the following (based on data provided by the McKinsey Global Institute):

By 2020, there will be a 38-40 million potential shortage of workers with tertiary education (13% of demand), 45 million too few workers with secondary education in developing countries, and 90-95 million more low-skill workers than employers will need (11% oversupply).

The gap between demand and supply of high-skill workers is estimated to be equivalent to 16-18 million workers in advanced economies, 23 million in China. The total shortage for medium-skilled workers for the next 20 years is estimated at 45 million workers – 10 million in India, and 31 million in Young Developing economies.<sup>22</sup>

There will be estimated surpluses of low-skill workers, 32-35 million in advanced economies, and 58 million in India and Young Developing economies. (p.10)

### 6.11 Net migration

A consideration in the attraction of migrants to the Wellington region is the retention, since any aspired attraction numbers will be inflated by the numbers lost if they choose to leave.

As shown in Table 24, using Statistics New Zealand data for permanent and long-stay arrivals (migrants and New Zealand citizens) and departures for the Wellington region between 2005 and 2014, it can be seen that Wellington lost more people than it gained over the period. The magnitude of the net flows varied between a loss of 1,815 in 2012 and a net gain of 1,357 in 2014. The total net change across the whole period was a loss of 630 people, or an average of 63 per annum.

**Table 24: Permanent and long-term arrivals and departures for the Wellington region, 2005-2014**

| Year    | Arrivals | Departures | Net    |
|---------|----------|------------|--------|
| 2005    | 7,443    | 7,480      | -37    |
| 2006    | 8,169    | 7,134      | 1,035  |
| 2007    | 7,801    | 8,309      | -508   |
| 2008    | 8,460    | 8,657      | -197   |
| 2009    | 7,749    | 6,900      | 849    |
| 2010    | 7,373    | 7,562      | -189   |
| 2011    | 7,336    | 8,539      | -1,203 |
| 2012    | 6,913    | 8,728      | -1,815 |
| 2013    | 7,639    | 7,561      | 78     |
| 2014    | 7,818    | 6,461      | 1,357  |
| Total   | 76,701   | 77,331     | -630   |
| Average | 7,670    | 7,733      | -63    |

Source: Statistics New Zealand, author's calculations.

<sup>22</sup> The paper defines Young Developing economies as follows: 'This group is composed of 11 countries out of the 70 considered by the McKinsey Global Institute report, from South Asia and Sub-Saharan Africa, with GDP at less than 3,000 US dollars in 2010. For more information, see [http://www.mckinsey.com/insights/employment\\_and\\_growth/the\\_world\\_at\\_work](http://www.mckinsey.com/insights/employment_and_growth/the_world_at_work) (last accessed: 25 November 2014)' page 10.



There are reasons why the numbers may not be an accurate reflection of the numbers of international migrants coming to the Wellington region, such as some arriving in other parts of the country, particularly Auckland, and finding work in the Wellington region and ultimately moving there. This movement is not captured by the numbers in that report.

Nevertheless the numbers do suggest that in order for the employment gaps to be met by migration, with those gaps identified in section 5 of this report, there would need to be some significant changes in policy to enable a significantly larger inflow and retention (i.e. reduced outflow) of migrants. A net annual outflow of 63 would need to be reversed to be a net inflow and of a much higher magnitude.

### **6.12 Section summary**

The summary of information from sections 6.1 to 6.11 is as follows:

- Population grew at a slower rate in the Wellington region compared to New Zealand between 2005 and 2014.
- GDP per person has been higher than the New Zealand average but the gap has fallen since 2010.
- The three WRS focus sectors lagged behind the rest of New Zealand in terms of GDP growth between 2005 and 2014.
- Average weekly earnings were higher than the New Zealand average but the gap has fallen since 2007.
- Employment (numbers of filled jobs) has been rising in the Wellington region at a slightly higher rate than for New Zealand since 2010.
- Unemployment rates and patterns were comparable in the Wellington region and New Zealand.
- The Wellington region attracted a falling share of international students to New Zealand between 2004/05 and 2013/14.
- The Wellington region attracted a falling share of migrants to New Zealand between 2005 and 2014.
- There is expected to be a growing shortage in the global supply of skilled migrants and competition from other countries to attract these migrants.
- The Wellington region had a negative net migration rate (permanent and long-stay arrivals and departures) between 2005 and 2014 with an average net outflow of 63 people per annum.

Of these comparisons of the region's performance with the national average, the key areas for concern or room for improvement in terms of the region's growth rates are with respect to population, regional GDP, GDP of WRS focus sectors, earnings per person, attracting international students, and attracting and retaining migrants.

## 7 Summary of findings

Each of the sections 2 to 6 end with a section summary giving key findings and observations for that section. This section draws the main thrust of the report together in five key points, each point presented in a box and followed by a short explanation, the detail of which has been presented in the main body of the report.

### **1. The profile of migrants in the Wellington region shows a diverse population in terms of all characteristics including region of origin, education, skills, language and demographics.**

- This report presents an overview of the profile of the migrants living in the Wellington region in terms of their key characteristics and contributions to the regional economy. The GWRC migrant tool is a key source of the data, which itself is based on data from the New Zealand censuses of 2006 and 2013. The report presents the patterns of migrants' source regions, ages, time in New Zealand, educational qualifications, migrant category, English-speaking ability, numbers of dependent children, income and employment. It demonstrates that migrants are an extremely diverse group, and recognition of this factor is an important consideration of any policy aimed at attracting and/or retaining migrants.

### **2. The economic growth scenarios for the Wellington region will require more labour than is expected to be available, even under the BAU scenario.**

- Wellington tends to attract a share of the national arrival of migrants roughly in proportion to its share of the national population which was 11.0% in 2013, with the region attracting 11.3% of all migrants coming to New Zealand in that year. In 2013, migrants accounted for 23.2% of the total population in the Wellington region, which equated to 113,031 people.

This report assesses a range of economic growth scenarios for the Wellington region, based on a BAU scenario and on scenarios that see investment in WRS focus sectors. It has been demonstrated that in order to reach the employment levels required for each scenario to be achieved, after accounting for natural population growth and ongoing migration patterns, more people will be needed to be employed than are expected to be available in the region.

### **3. The employment gap suggests total net migration required out to 2031 for the Wellington region of 50,000 to 150,000.**

- If the difference in projected employment levels and those required to achieve the economic growth levels in the scenarios is to be met, it is suggested in this report that the gap would need to be met from additional migration. The report assesses how many more migrants would be needed to fill the employment gaps to achieve the economic growth levels in the scenarios. The exact numbers of migrants required cannot be confidently estimated because of too many unknowns, but it is reasonable to suggest that even under the BAU scenario at least 21,500 new migrants will be required in addition to those already forecast to arrive, bringing the total to over 50,000, and under the aspirational scenario the total new arrivals over the period could exceed 137,000. Therefore a reasonable working range for policy-related discussions is to assume a requirement out to 2031 for the region of 50,000 to 150,000 total net migration.

**4. Policy changes would be required to achieve net migration in the stated range as those numbers are significantly higher than historic numbers.**

- To attract this number of migrants requires policy action as the range is substantially higher than the historic levels of attraction, while net migration was negative on average between 2005 and 2014.

**5. Retention of migrants is equally as important as attraction.**

- The range of numbers of migrants that the region may wish to target to attract is a net range. There is significant movement of migrants and therefore the lower the rate of retention, the higher those numbers would need to be to meet those net levels. The profile of the migrants feeds into any consideration of attraction and retention of migrants.

In order to address the gap, it is also important to understand the performance of the Wellington region in key areas such as population, employment, income, and attraction of migrants and international students, in its own right and also in comparison to the rest of New Zealand, as this information will be central to assessing the attractiveness of the region to migrants relative to the rest of the country.

The findings summarised in points 1 to 5 above relating to the regional migrant profile, aspirations for the Wellington region, employment requirements and associated considerations relating to attraction and retention of migrants, will together feed into policy discussions and further research.

## Appendix

**Table A1: BERL eight industry classification with associated ANZSIC level 2 code and description**

| Industry grouping          | ANZSIC 2006 level 2 code and description |   |
|----------------------------|--|---|
| Primary production         | A01                                      | Agriculture   |
|                            | A02                                      | Aquaculture   |
|                            | A03                                      | Forestry and Logging                                  |
|                            | A04                                      | Fishing, Hunting and Trapping                         |
|                            | A05                                      | Agriculture, Forestry and Fishing Support Services    |
|                            | B06                                      | Coal Mining   |
|                            | B07                                      | Oil and Gas Extraction                                |
|                            | B08                                      | Metal Ore Mining                                      |
|                            | B09                                      | Non-Metallic Mineral Mining and Quarrying             |
|                            | B10                                      | Exploration and Other Mining Support Services         |
|                            | C11                                      | Food Product Manufacturing                            |
|                            | C12                                      | Beverage and Tobacco Product Manufacturing            |
|                            | C14                                      | Wood Product Manufacturing                            |
|                            | C15                                      | Pulp, Paper and Converted Paper Product Manufacturing |
|                            | Product manufacturing                    | C13   |
| C16                        |  | Printing  |
| C17                        |  | Petroleum and Coal Product Manufacturing              |
| C18                        |  | Basic Chemical and Chemical Product Manufacturing     |
| C19                        |  | Polymer Product and Rubber Product Manufacturing      |
| C20                        |  | Non-Metallic Mineral Product Manufacturing            |
| C21                        |  | Primary Metal and Metal Product Manufacturing         |
| C22                        |  | Fabricated Metal Product Manufacturing                |
| C23                        |  | Transport Equipment Manufacturing                     |
| C24                        |  | Machinery and Equipment Manufacturing                 |
| C25                        |  | Furniture and Other Manufacturing                     |
| Infrastructure             | E30                                      | Building Construction                                 |
|                            | E31                                      | Heavy and Civil Engineering Construction              |
|                            | E32                                      | Construction Services                                 |
|                            | D26                                      | Electricity Supply                                    |
|                            | D27                                      | Gas Supply  |
|                            | D28                                      | Water Supply Sewerage and Drainage Services           |
|                            | D29                                      | Waste Collection Treatment and Disposal Services      |
| Wholesale and distribution | F33                                      | Basic Material Wholesaling                            |
|                            | F34                                      | Machinery and Equipment Wholesaling                   |
|                            | F35                                      | Motor Vehicle and Motor Vehicle Parts Wholesaling     |
|                            | F36                                      | Grocery Liquor and Tobacco Product Wholesaling        |
|                            | F37                                      | Other Goods Wholesaling                               |
|                            | F38                                      | Commission-Based Wholesaling                          |
|                            | I46                                      | Road Transport  |
|                            | I47                                      | Rail Transport  |
|                            | I48                                      | Water Transport                                       |
|                            | I49                                      | Air and Space Transport                               |
|                            | I50                                      | Other Transport                                       |
|                            | I51                                      | Postal and Courier Pick-up and Delivery Services      |
|                            | I52                                      | Transport Support Services                            |
|                            | I53                                      | Warehousing and Storage Services                      |

**Table A1 continued: BERL eight industry classification with associated ANZSIC level 2 code and description**

| Industry grouping                             | ANZSIC 2006 level 2 code and description |   |
|---|--|---|
| Communications and IT                         | J54                                      | Publishing (except Internet and Music Publishing)   |
|   | J55                                      | Motion Picture and Sound Recording Activities   |
|   | J56                                      | Broadcasting (except Internet)  |
|   | J57                                      | Internet Publishing and Broadcasting  |
|   | J58                                      | Telecommunications Services   |
|   | J59                                      | Internet Service Providers, Web Search Portals and Data Processing Services                           |
|   | J60                                      | Library and Other Information Services  |
|   | M69                                      | Professional, Scientific and Technical Services (except Computer Systems Design and Related Services) |
|   | M70                                      | Computer Systems Design and Related Services  |
| Retail trade and services                     | G39                                      | Motor Vehicle and Motor Vehicle Parts Retailing   |
|   | G40                                      | Fuel Retailing  |
|   | G41                                      | Food Retailing  |
|   | G42                                      | Other Store-Based Retailing   |
|   | G43                                      | Non-Store Retailing and Retail Commission Based Buying and/or Selling                                 |
|   | H44                                      | Accommodation   |
|   | H45                                      | Food and Beverage Services  |
|   | S94                                      | Repair and Maintenance  |
|   | S95                                      | Personal and Other Services   |
| S96   | Private Households Employing Staff       |   |
| Business services                             | K62                                      | Finance   |
|   | K63                                      | Insurance and Superannuation Funds  |
|   | K64                                      | Auxiliary Finance and Insurance Services  |
|   | L66                                      | Rental and Hiring Services (except Real Estate)   |
|   | L67                                      | Property Operators and Real Estate Services   |
|   | N72                                      | Administrative Services   |
|   | N73                                      | Building Cleaning Pest Control and Other Support Services   |
| Social services, arts and recreation services | R89                                      | Heritage Activities   |
|   | R90                                      | Artistic Activities   |
|   | R91                                      | Sport and Recreation Activities   |
|   | R92                                      | Gambling Activities   |
|   | O75                                      | Public Administration   |
|   | O76                                      | Defence   |
|   | O77                                      | Public Order Safety and Regulatory Services   |
|   | P80                                      | Preschool and School Education  |
|   | P81                                      | Tertiary Education  |
|   | P82                                      | Adult, Community and Other Education  |
|   | Q84                                      | Hospitals   |
|   | Q85                                      | Medical and Other Health Care Services  |
|   | Q86                                      | Residential Care Services   |
| Q87   | Social Assistance Services               |   |

Source: BERL (2014) page 40

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