



MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

Moving places

*Destinations and earnings of
international graduates*



Beyond tertiary study

This report forms part of a series called Beyond tertiary study. Other topics covered by the series include how graduates' earnings change over time, labour market outcomes, education and economic growth, and qualifications and income.

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Acknowledgements

The author gratefully acknowledges comments provided by Wenhua Yang of the Ministry of Education, Donna Boniface and other reviewers from the Ministry of Business, Innovation and Employment, and the New Zealand Qualifications Authority. The author also gratefully acknowledges the assistance provided by Mieke Wensvoort. The author also gratefully acknowledges Alison Lipski, who proof-read this report.

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The opinions, findings, recommendations and conclusions expressed in this report are those of the author not Statistics NZ.

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Careful consideration has been given to the privacy, security, and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from www.stats.govt.nz.

The results are based in part on tax data supplied by Inland Revenue to Statistics NZ under the Tax Administration Act 1994. This tax data must be used only for statistical purposes, and no individual information may be published or disclosed in any other form, or provided to Inland Revenue for administrative or regulatory purposes.

Any person who has had access to the unit-record data has certified that they have been shown, have read, and have understood section 81 of the Tax Administration Act 1994, which relates to secrecy. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

Published by the Ministry of Education

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This report is available from the Ministry of Education's Education Counts website:
www.educationcounts.govt.nz

January 2017

ISBN (web) 978-0-478-16834-1

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KEY FINDINGS

This report looks at what international graduates do and earn after they complete their tertiary education studies in the New Zealand tertiary education system. The report focuses on students who complete qualifications at government-funded providers – these providers submit unit-record data about their students to the Single Data Return (SDR).

Do international graduates return overseas?

- Two-thirds (66 percent) of all first student visa (FSV) holders in 2009 are overseas five years after they obtain their FSV.
- There are big differences in return overseas rates between tertiary students who complete a qualification within five years of their FSV, compared to those who do not complete a qualification, for international students who study at a provider who submits unit-record data about their students to the Single Data Return (SDR). 87 percent of students who do not complete a qualification within five years are overseas five years after obtaining their FSV, compared to only 51 percent of students who do complete a qualification, for students with a FSV in 2009.
- The return overseas rate for young, international graduates who complete a qualification at an SDR-submitting provider is 53 percent five years after they complete their qualification, and 61 percent after eight years. The return rate for all international graduates is 49 percent five years after they complete their qualification, and 59 percent after eight years. The rates for graduates of all ages are slightly lower than the rates for young graduates because a higher proportion of older graduates complete lower-level qualifications.
- Young, international graduates who complete below-degree-level qualifications are less likely to return overseas in the first year after study, with only 16 to 23 percent doing so as many of them advance to further study in New Zealand. However, departure rates are higher in later years.
- Eight years after study, 57 percent of Level 5-7 certificate or diploma young, international graduates have returned overseas, and 60 to 68 percent of graduates at all other qualification levels.
- The percentage of young, international graduates who return overseas in the first year after they complete a qualification is highest for those who complete a Doctor of Philosophy (48 percent), followed by bachelors-degree graduates at 45 percent. The rate of departure in the first year after completion for young, international students who complete a postgraduate qualification is 37 percent.
- Between 2010 and 2014, on average, 13 percent of international graduates had domestic status by the time they completed their qualification. Rates are lower for graduates completing their first qualification and considerably higher for graduates completing a subsequent qualification.
- Just over half of young, international graduates with a Level 1-4 certificate continue studying in the year following the completion of this qualification.

Employment outcomes for graduates who remain in New Zealand

- Employment rates in the first year after study are highest for young, international students who complete a graduate certificate or diploma, a Level 5-7 certificate or diploma or a Doctor of Philosophy (PhD), at 63 percent, 51 percent and 45 percent respectively.
- As with young, domestic graduates, median earnings for international graduates who work in New Zealand after completing their studies increase with the level of qualification they have completed. Earnings are particularly high for international students who complete a PhD.
- Young, international graduates are more likely than domestic graduates to go overseas and less likely to work in New Zealand when they complete their studies, at Level 5-7 certificate or diploma, bachelors degree, graduate certificate or diploma, and PhD level. This is expected as many international students come to New Zealand principally to study and do not plan to work in New Zealand after they complete their studies.
- Young, international bachelors-degree graduates who remain in New Zealand and work after they complete their studies tend to earn less than comparable young, domestic graduates, except for those who have studied *nursing or medical studies*. Compared to their domestic counterparts, earnings are lower for international bachelors-degree graduates who complete a qualification in *management and commerce* or *society and culture*.
- Earnings for international graduates who complete a qualification in science, technology, engineering and mathematics (STEM) fields and work in New Zealand after they complete their studies tend to be higher, with high earnings for those who study *information technology, engineering and related technologies, and health*.

How do international graduates from different countries compare?

- International graduates from different countries often show different study patterns. For example, students from India tend to complete qualifications at Level 5-7 certificate or diploma, graduate certificate or diploma, or postgraduate level, whereas students from Association of Southeast Asian Nations (ASEAN) countries are more likely to complete a bachelors degree. There are also differences in the preferred field of study.
- The proportion of male and female graduates varies depending on the country that graduates come from. There is a high proportion of male Indian graduates at most qualification levels, whereas proportions of male and female graduates are more equal for Chinese and ASEAN graduates.
- Outcomes for international students vary depending on which country they come from. For example, Indian graduates are less likely to return overseas when they have completed their studies, and are more likely to stay in New Zealand and work, whereas graduates from ASEAN and Gulf Cooperation Council (GCC) countries are more likely to return overseas. Earnings for those who stay in New Zealand to work also tend to differ for those who come from different countries, but it is likely that differences in study patterns explain many of these differences.

1 INTRODUCTION

International students play an important role in New Zealand through the contribution they make to New Zealand's economy, the diversity they bring to New Zealand and its education system, and the lifetime links that are created between their country and New Zealand. We already have good information about what young, domestic students do and earn after they complete their studies. However, to date, there has been no published comprehensive information about what international students do once they have completed their studies in New Zealand. This study fills gaps in our knowledge about international student outcomes.

The importance of international students to New Zealand

International students are important to New Zealand for many reasons. International education is now New Zealand's fifth largest export sector, with the value of the industry estimated at \$2.85 billion in 2014.¹ This includes earnings from tuition fees and living costs, and also the value of the jobs created by the industry. It is estimated that around 14,500 jobs are directly linked to international education delivered within New Zealand, and another 15,700 jobs are indirectly supported by the industry through upstream and downstream multiplier effects (Infometrics, 2015).

International students are also valuable to New Zealand in terms of the cultural diversity they bring. The world that our young people are growing up in is more globally connected than it has ever been. Knowledge of different peoples and cultures is increasingly important. International students help to create links between New Zealand and other countries. These links may create business opportunities in the future or may be academic in nature. Academic linkages help to ensure that New Zealand's tertiary education system remains internationally competitive and will benefit both domestic and international students in the future.

Some international students come to New Zealand principally to study, bringing economic, academic and cultural advantages to New Zealand as they do so. Others stay in New Zealand after they complete their studies, so contributing skills to our labour market. Changes to work rights in November 2013 have contributed to this (New Zealand Government, 2013). For example, international students at masters level and above, are now able to work longer hours while they study in New Zealand, and some English language students now qualify for work rights. These changes increase the likelihood that students will have relevant skills which are in demand by employers once they complete their studies.

Results from the recent International Student Barometer survey show that many international students have a high level of satisfaction with their experience of studying in New Zealand (Education New Zealand, 2015a).

¹ This is the interim valuation estimated by Infometrics (2015). It includes the estimated \$104 million from Export Services.

Scope and definitions

This report uses similar methodology to a series of reports on the outcomes for young, domestic graduates, for example *What young graduates earn when they leave study* (Park et al, 2013), *What young graduates do when they leave study* (Park, 2014) and the series of factsheets on post-study earnings and destinations of young, domestic graduates (Ministry of Education, 2016).

In this study, we look at all students who have ever been international students, including those who have gained domestic student status through gaining either New Zealand residency or citizenship. We do this rather than only looking at those who are classified as international students when they complete their qualification, as gaining residency or citizenship is an important outcome for many international students.

The term 'international' is defined as 'not domestic'. We use the Single Data Return (SDR) definition for 'domestic', which is based on a student's country of citizenship and residency status, and whether the qualification they are doing is based in New Zealand or not. This definition classifies Doctor of Philosophy (PhD) students who do not have New Zealand citizenship or residency as international students rather than domestic, even though international PhD students pay domestic fees to study in New Zealand.²

We look at both international students who have and those who have not had a student visa at some time. The majority of international students who study in New Zealand have held a student visa at some point. We look only at international students who have records in the SDR.³ This includes international students who study at universities and institutes of technology and polytechnics, and at many private training establishments. However, many international students study at private training establishments which are not required to submit information about their students to the SDR. Education New Zealand (2016) reports that, in 2015, 26,024 international students studied at universities, 17,454 students studied at polytechnics, and 17,682 students at private training establishments which submitted information to the SDR.⁴ The number of these students was 60,522 in total.⁵ Around 3,500 of these students studied at offshore campuses.⁶ This compares to 24,912 students who studied at non-SDR-reporting private training establishments or subsidiaries. A further 21,005 international students studied at English language schools or subsidiaries which also do not report to the SDR. Many students in non-SDR providers study for a relatively short time. This means that the SDR data captures the majority of New Zealand's post-school international education effort.

In this report, we look at all international graduates in the same economic climate, that of the 2012 and 2013 tax years, for each of the first eight years post-study. For instance, one year post-study outcomes are calculated for graduates who completed in 2010 or 2011, and five year post-study outcomes are calculated for graduates who completed in 2006 or 2007. Table 1 shows how the aggregated cohorts align with tax and calendar years for each post-study year.

² In particular, the definition of a domestic student used in the SDR is any student who is a New Zealand citizen; or a New Zealand Permanent Resident or Australian citizen, attending a course in New Zealand.

³ The SDR comprises unit-record data that is collected by the Tertiary Education Commission and Ministry of Education from government-funded tertiary education providers about their students.

⁴ The definition used for international students by Education New Zealand varies from that used in this study and the SDR.

⁵ Some students enrol at more than one provider and so may be counted in more than one subsector. These students are counted only once in the total for all funded providers.

⁶ Ministry of Education data (unpublished).

Table 1
Alignment of cohorts with tax years⁷

Cohorts	Years post study	Tax years
2010 and 2011	1	2012 and 2013
2009 and 2010	2	2012 and 2013
2008 and 2009	3	2012 and 2013
2007 and 2008	4	2012 and 2013
2006 and 2007	5	2012 and 2013
2005 and 2006	6	2012 and 2013
2004 and 2005	7	2012 and 2013
2003 and 2004	8	2012 and 2013

Looking at different cohorts over time means that, as well as being able to compare these results in the same economic climate, the results for each year after study are for the most recent cohorts possible. It also means these results can be compared to those published already for young, domestic graduates, as the same methodology is used. However, the composition of cohorts has varied over time for international students, due to external factors such as economic opportunity in the students' home countries and changes to pathways from study to work in other education markets (most notably the United Kingdom and Australia). There have also been changes in immigration policy settings which determine which students will be eligible to remain in New Zealand after completing their studies; this has influenced the level and duration of study for many international students.

For example, there was a large drop in the number of international Chinese students studying in New Zealand between 2004 and 2008, and since 2006, the number of Indian students has increased in most years, often considerably. There have also been changes in the most common qualification levels and fields studied. These differences are much larger than those for domestic students.

The differences mean that, when comparing results for different years after study, changes may be due to both time and/or differences in cohort composition and what they study, and/or due to changes in policy settings. This also means that outcomes for future cohorts of international graduates may not be the same as these ones.

As in earlier reports on outcomes for domestic graduates, in much of this report we focus on young,⁸ international graduates. Young graduates comprise around two-thirds of international bachelors-degree graduates, and over half of those with a Level 5-7 certificate or diploma, graduate certificate or diploma, or postgraduate⁹ qualification (see Table 2). Proportions are lower at Level 1-4 certificate and PhD levels, with a little under one-quarter of all PhD international graduates aged 29 years or under when they complete their qualification.

⁷ The results for two cohorts of graduates are aggregated together for each year post study, in order to increase graduate numbers. This means that we are able to publish results for more qualification level by field of study combinations as more results meet Statistics New Zealand's confidentiality requirements. Increased graduate numbers also improve the statistical quality and robustness of the results.

⁸ The age cut-offs for young graduates vary by their type of qualification. For example, for people with a Level 1-4 certificate the cut-off is 21 years. The cut-off for a Level 5-7 certificate or diploma is 23 years, for a three-year bachelors degree 24 years, and for a PhD 29 years. This approach attempts to control for the differing lengths of study to ensure that the labour market experience of all graduates is similar.

⁹ Postgraduate qualifications comprise: bachelors with honours, postgraduate certificates and diplomas, masters and doctorates.

Table 2

Qualification levels and corresponding NZQF levels, and percentage of international graduates who are classified as young, by qualification level and year after study

Qualification level	NZQF level	Years post study							
		1	2	3	4	5	6	7	8
Level 1-4 certificates	1-4	39	37	37	35	32	35	43	52
Level 5-7 certs and diplomas	5-7	51	49	49	50	53	55	59	62
Bachelors degrees	7	65	62	64	67	72	72	71	70
Graduate certs and diplomas	7	57	60	60	61	59	61	64	67
Postgraduate	8-10	50	54	55	58	57	57	59	58
PhD	10	23	30	29	20	24	25	22	21

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Percentages are based on rounded counts.

We look at results by qualification level and field of study, with the New Zealand Standard Classification of Education (or NZSCED) used to classify people's study into various fields of study.

Structure of the report

Chapter 2 presents an overview of what young, international graduates do after they complete a qualification; and looks at results by qualification level.

Chapter 3 looks at how many international graduates obtain domestic student status by the time they complete their studies.

Chapter 4 presents an overview of what young, international graduates earn after they complete a qualification, by qualification level.

Chapter 5 compares the outcomes for young, international students to those for young, domestic students.

Chapters 6 to 9 look at how the outcomes for young, international graduates at each qualification level vary depending on what field they have studied.

Chapter 10 highlights results for young, international graduates who have studied a science, technology, engineering and mathematics (STEM) field, *information technology*, or *English for speakers of other languages* (ESOL).

Chapter 11 focuses on results for graduates who come from China or India, the two countries from which most of our international graduates come, and also those from ASEAN or GCC countries.

Appendix A describes the technical details of the methodology used to obtain the results in this report.

Appendix B presents rates of returning overseas for different groups of international students and compares and contrasts these to various published rates. It also shows how return overseas rates for different graduate cohorts have varied over time.

Appendix C comprises summary figures of the results for chapters 6 to 9.

2 WHAT INTERNATIONAL GRADUATES DO AFTER COMPLETING A QUALIFICATION

The number of international students who complete a qualification in New Zealand has been increasing at most qualification levels in recent years. Knowing what these students do after they complete a qualification is important. It tells us whether they return overseas or continue on to do further study once they have finished their first qualification, and which graduates enter our labour market and contribute to New Zealand's economy once they have completed their studies. Students who return overseas after they complete their studies still make an important contribution to New Zealand, culturally, academically and economically. Their economic contribution is both direct (for example, through fees they pay to providers to study in New Zealand and other expenditure they make while in New Zealand) and indirect (for example, links formed between international students and New Zealanders that may create business opportunities in the future).

The detailed analyses in this report provide useful information about the percentage of young, international graduates who return overseas, go on to do further study, or gain employment in New Zealand after completion of their studies.

Categorising the destinations of graduates

In this report, where possible, we assign each graduate in each year to one of four main destinations: overseas, further study, receiving a benefit, or employment. Although many graduates undertake more than one activity in a year, in each year after completing a qualification, graduates are assigned to a single destination using the rules¹⁰ outlined below and as shown in Figure 1.

These rules take account of 'substantiveness' – how long a graduate is pursuing an activity – and a 'predominance' test – what is the 'main' activity.

Overseas – nine months or more overseas overall in a year.

Further study – graduates who are not classified in the *Overseas* category and do any tertiary study in a calendar year.

Receiving a benefit – graduates who are not classified in either the *Overseas* or *Further study* categories and who are on a benefit for at least four months in a tax year and are not in employment for longer than this.

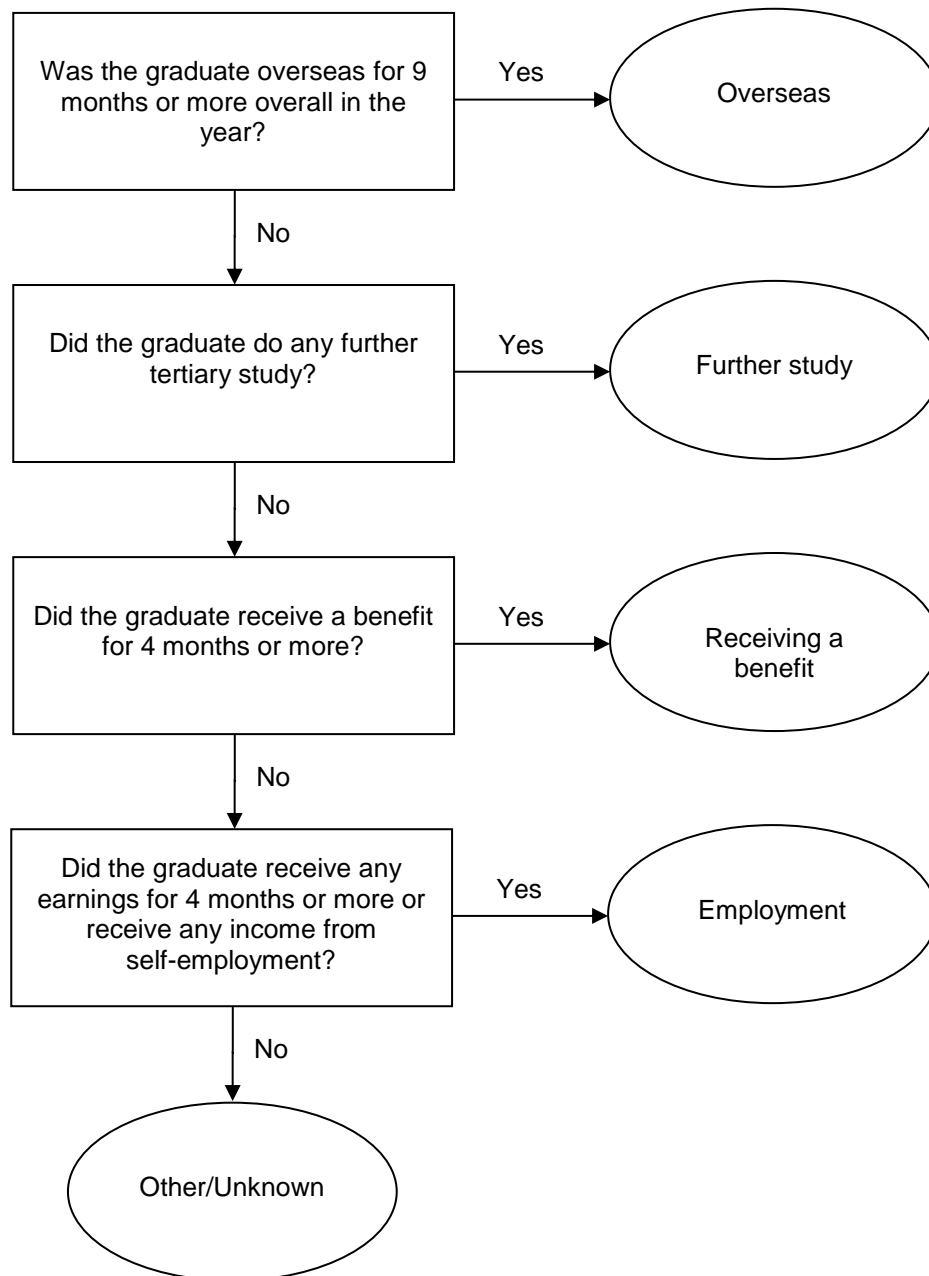
*Employment*¹¹ – graduates who are not classified in any of the categories above and who receive wages and salary, paid parental leave and/or accident compensation for at least four months or more in a tax year and/or receive any self-employment income (excluding rental income).

¹⁰ These definitions are the same as those used in the report *What young graduates do when they leave study*, which looks at what young, domestic graduates do when they complete a qualification.

¹¹ Importantly, this measure is not the same as the official measure of employment used in the Household Labour Force Survey (HLFS). This is because of the order of precedence, the fact that the employment rate for young graduates excludes those who have worked without pay, and the use of an annual criterion, rather than a reference week as is the case in the HLFS. The data in the HLFS also differs from the IDI data as earnings are self-reported and are based on a sample, whereas IDI data is administrative and covers all graduates.

Other/Unknown – graduates who are involved in more than one activity during the year and who do not meet the criteria for any of the four destinations above, or for whom no matching data can be found in the Integrated Data Infrastructure.

Figure 1
Flowchart showing the rules used to assign graduates to a destination



Note: Graduates are assigned to a single destination in each year after they complete a qualification.

Where a graduate meets the criteria for more than one destination, the destination is determined using the order of precedence: overseas, further study, receiving a benefit, employment. For example, if an individual works for three months after completing their qualification, and then goes overseas for nine months, they will be classified in the Overseas destination. Or if a student completes (for instance) a bachelors degree in nursing in one year and then does a postgraduate qualification in nursing in the next year while also working, they would be classified in the Further study destination rather than in the Employment destination.¹² This order of precedence means that the employment rate is conservative and is not inflated by including those who do multiple activities throughout a year.

We are unable to determine what graduates do once they leave New Zealand; some who leave will enter work in their home country, while others will do further study in other countries.

A small proportion of graduates may also 'disappear' from the administrative data – we can't find out what they are doing, perhaps because they were doing unpaid work or caregiving and were supported by family or partners, or were travelling around New Zealand or doing volunteer work. These graduates of unknown destination are included in the Other/Unknown category.

Does the level of study affect what young, international graduates do?

What young, international graduates do after they complete their studies varies considerably depending on the level at which they have studied (see Figure 2).

Further study:

- The percentage of young, international students who do further study is highest in the first year after study and is lower in each later year for all qualification levels – except for PhD graduates, who (predictably) have very low rates of further study in any of the first eight years after completion. Further study rates are considerably higher for those who have completed a Level 1-4 certificate, with around half of these graduates continuing on to do further study, reflecting the fact that many students will have entered a Level 1-4 qualification to provide preparation for study at a higher level.
- Further study rates vary from 16 to 22 percent in the first year after study for young, international graduates who complete a Level 5-7 certificate or diploma, bachelors degree, graduate certificate or diploma, or postgraduate qualification. The rates gradually decrease over time to around 5 percent in the eighth year after completion of the initial qualification.

Overseas rates

- Two-thirds (66 percent) of all first student visa (FSV) holders in 2009 are overseas five years after they obtain their FSV.
- There are big differences in return overseas rates between tertiary students who complete a qualification within five years of their FSV, compared to those who do not complete a qualification, for international students who study at a provider who submits unit-record data about their students to the Single Data Return (SDR). 87 percent of students who do not complete a qualification within five years are overseas five years

¹² Note that if this graduate continued to work in New Zealand in the following year, they would be classified in the Employment destination for the second year after study for the bachelors-degree qualification, and in the Employment destination for the first year after study for the subsequent qualification. This is because graduates who complete more than one qualification are included in the results for both qualifications.

after obtaining their FSV, compared to only 51 percent of students who do complete a qualification, for students with a FSV in 2009.

- The return overseas rate for young, international graduates who complete a qualification at an SDR-submitting provider is 53 percent five years after they complete their qualification, and 61 percent after eight years. The return rate for all international graduates is 49 percent five years after they complete their qualification, and 59 percent after eight years. The rates for graduates of all ages are slightly lower than the rates for young graduates because a higher proportion of older graduates complete lower-level qualifications.
- Young, international graduates who complete below-degree-level qualifications, or graduate certificates or diplomas, are less likely to return overseas in the first year after study, with only 16 to 23 percent returning overseas. However, rates are higher in later years. Eight years after study, 57 percent of Level 5-7 certificate or diploma graduates have returned overseas, and 60 to 68 percent of graduates at all other qualification levels.
- For international graduates of all ages who complete a qualification below NZQF Level 8, the percentage who return overseas is 1 to 2 percentage points lower than for young, international graduates. For PhD graduates of all ages, the percentage who return overseas is 2 percentage points higher than for young international graduates (see Figure 3).
- The percentage of young, international graduates who return overseas in the first year after they complete a qualification is highest for those who complete a PhD (48 percent), followed by bachelors-degree graduates at 45 percent. The return overseas rate for young, international graduates who complete a postgraduate qualification is 37 percent in the first year after completion. These rates compare with an average rate of 28 percent for all young, international graduates who complete a qualification at a government-funded provider.

Appendix B provides more information about return overseas rates for different groups of international students, as these can vary depending on the students' characteristics. These rates are also compared to several other rates published by the Ministry of Business, Innovation and Employment. The appendix also shows how return overseas rates have changed over time for graduate cohorts.

Employment rates

- Some young, international graduates work in New Zealand after they complete their studies. Employment rates are highest in the first year after study for those who complete a graduate certificate or diploma (63 percent), Level 5-7 certificate or diploma (51 percent), or a PhD (45 percent).
- Employment rates are lower in later years for all young, international graduates except those who complete bachelors degrees and Level 1-4 certificates. Employment rates for bachelors-degree graduates are similar in each of the first eight years after study, only varying from 25 to 29 percent. Employment rates for graduates with a Level 1-4 certificate are low in the first year after study (6 percent), but are incrementally higher in each of the next three years after study. Rates are stable in later years, only varying from 20 to 22 percent in the fourth to eighth years after study.

Benefit and other/unknown rates

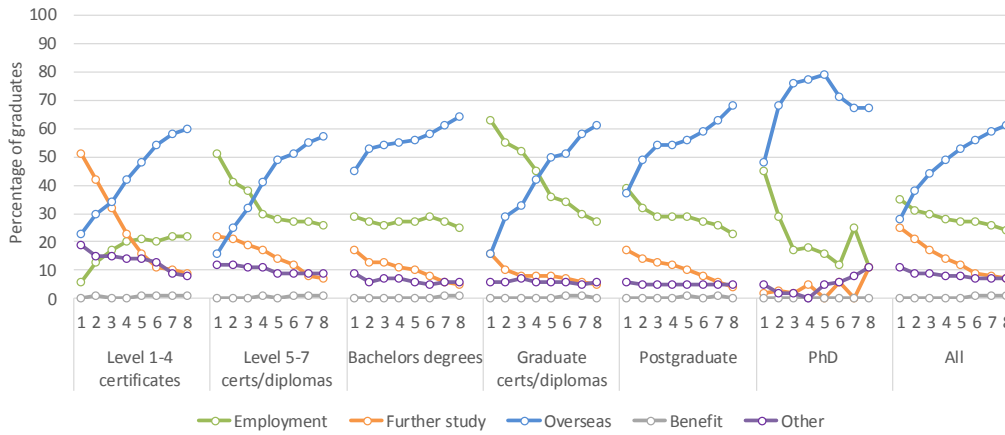
- The percentage of young, international graduates who go onto a benefit after they complete their studies is very low at all qualification levels, with a maximum of 1 percent of all such graduates and usually none. Part of the reason for these low rates is that international students are not eligible to go onto a benefit in New Zealand unless they gain New Zealand citizenship or residency.
- The percentage of young, international graduates who are classified as Other or Unknown is around 6 percent across all years after study for those who complete a qualification at bachelors level or higher. For those who complete a Level 1-4 certificate or Level 5-7 certificate or diploma, the rates are higher, particularly in the first few years after study. Rates are as high as 19 percent in the first year after study, dropping to 15 percent in the second and third years, for those who complete a Level 1-4 certificate. This may suggest that these graduates are undertaking a variety of activities after they complete their studies. For example, they may be returning overseas for several months in the year (but for less than nine months, at which point they would be classified in the Overseas destination), and also may travel around New Zealand for part of the year and do some work (but for less than four months, at which point they would be classified in the Employment destination). It would be interesting to explore further what these graduates are doing.

Similar patterns are seen for international graduates of all ages for each destination.

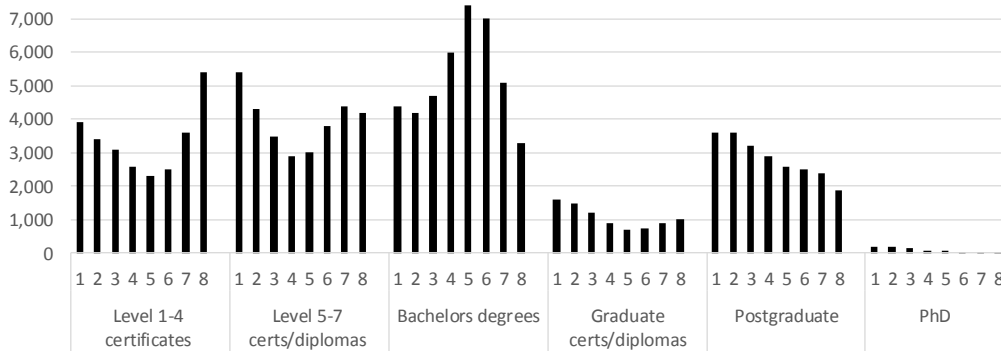
Figure 2

Graduate destinations and numbers, by qualification level, for young, international graduates in the first eight years after qualification completion

(a) Graduate destinations



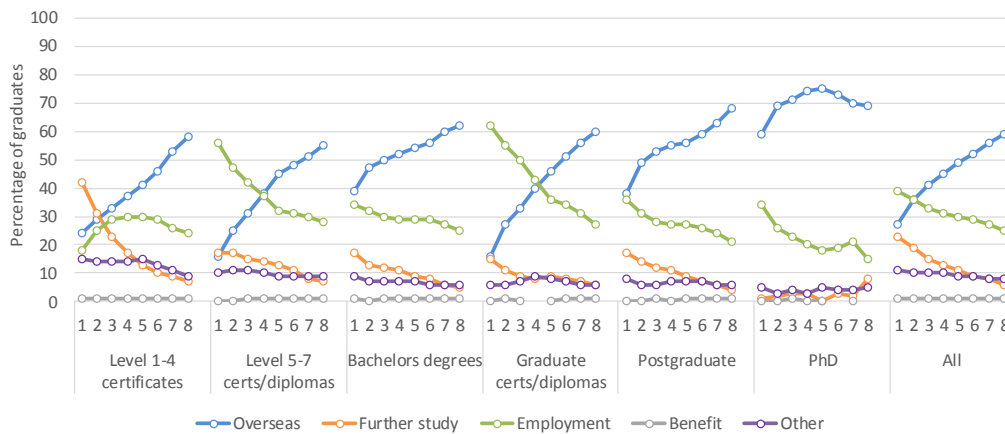
(b) Number of graduates



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Only graduates who complete qualifications at providers who submit information to the SDR are included in this and subsequent figures. The results for each year after study are for different cohorts of graduates (see Table 2).

Figure 3

Graduate destinations, by qualification level, for international graduates of all ages in the first eight years after qualification completion



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

3 HOW MANY INTERNATIONAL STUDENTS HAVE RESIDENCE BY THE TIME THEY COMPLETE THEIR STUDIES?

Many factors influence whether or not an international student gains domestic student status¹³ (New Zealand residence). In this chapter, we report on the transition of international students to New Zealand residence by looking at how many graduates have domestic student status by the last year of their qualification and we investigate how these rates change depending on the characteristics of the students and their qualifications.

Between 2010 and 2014, on average, 13 percent of international graduates who study at an SDR-reporting provider have domestic status by the time they have completed their qualification. Females are more likely to have domestic status, with 16 percent of international female graduates having domestic status compared to 11 percent of males.¹⁴

International students can gain domestic status (New Zealand residence) while studying for a qualification, or after completing an initial qualification and before they start a subsequent one. Table 3 shows the domestic status of each graduate at the start and finish of a first or subsequent qualification. Between 2010 and 2014, three-quarters of qualifications completed by international students were first qualifications and the remaining were subsequent ones. Using a cohort approach, a similar percentage is found with 77 percent of all international students who complete a qualification in 2009 completing no further qualification in the next five years (to 2014)¹⁵.

We can see from Table 3 that, between 2010 and 2014, most (95 percent) of international graduates have international student status at both the start and finish of the first qualification that they complete¹⁶. The proportion of international students who change status *between* starting and completing a qualification is very low, at 2 percent. These students generally gain residence through their family or partner. A small percentage, 3 percent, of students have domestic status before they start the first qualification they complete. This is because some international students enrol in an initial qualification(s) at an earlier point in time, but complete a different qualification before, or instead of, the initial qualification enrolled in.

Table 3
Domestic status of international graduates at the start and finish of first or subsequent completed qualifications, 2010–2014

First completed qualification?	Domestic status		Percentage of graduates
	<i>Start of qualification</i>	<i>End of qualification</i>	
First	International	International	95%
First	International	Domestic	2%
First	Domestic	Domestic	3%
Subsequent	International	International	60%
Subsequent	International	Domestic	2%
Subsequent	Domestic	Domestic	37%

¹³ Domestic status is an indicator collected through the SDR and derived from a student's residency or citizenship status

¹⁴ The results in this chapter are calculated directly from data held by the Ministry of Education, not from the IDI

¹⁵ Only qualifications completed at government-funded providers are included in these calculations

¹⁶ These results are based on qualifications that students complete at government-funded providers only as information about other qualifications is not available. Also, international students who complete a qualification at a non-government-funded provider and subsequently gain domestic status are not able to be identified as formerly international students and so will not be included in Table 3.

The percentage of international graduates who have international status when they start their subsequent qualification is lower, at 60 percent. Almost all of the rest, 37 percent of international graduates who complete a subsequent qualification, have gained New Zealand residence or citizenship before they start this qualification. Similarly to when completing a first qualification, very few graduates (2 percent) gain domestic status while studying towards a subsequent qualification.

Data on completions between 2010 and 2014 shows that the level of the subsequent qualifications completed by international students who gain domestic status (residence) before starting these next qualifications is fairly evenly distributed across all qualification levels (except doctorates) (see Table 4). A similar pattern is observed if we use a cohort approach and look at the qualification level of subsequent qualifications completed by all international students who complete their first qualification in 2009 and gain domestic status before starting their next qualification.

Table 4

Qualification level of subsequent qualifications for international students who gain domestic status before starting this qualification

	Graduates who complete a subsequent qualification in 2010 to 2014		Graduates who complete a first qualification in 2009 and a subsequent one in 2010 to 2014	
	Percentage of graduates	Number of graduates	Percentage of graduates	Number of graduates
Level 1-3 certs	17%	1445	16%	125
Level 4 certs	14%	1170	14%	105
Level 5-7 certs/dips	10%	875	10%	80
Bachelors degrees	14%	1225	13%	105
Graduate certs/dips	9%	805	9%	70
Honours	19%	1605	23%	180
Masters	16%	1345	14%	115
Doctorate	2%	150	1%	10

Note: 'Honours' includes bachelors with honours degrees, postgraduate diplomas and postgraduate certificates.

Qualification level

The proportion of international graduates who have domestic status when they complete a qualification varies by qualification level¹⁷. For graduates who complete their first New Zealand qualification, the rate is very low at most qualification levels, varying from 2 to 9 percent, on average between 2010 and 2014 (see Figure 4a). The exception is for PhDs: the proportion of international graduates whose first New Zealand qualification is a PhD and who are domestic by completion is 13 percent for males and 15 percent for females.

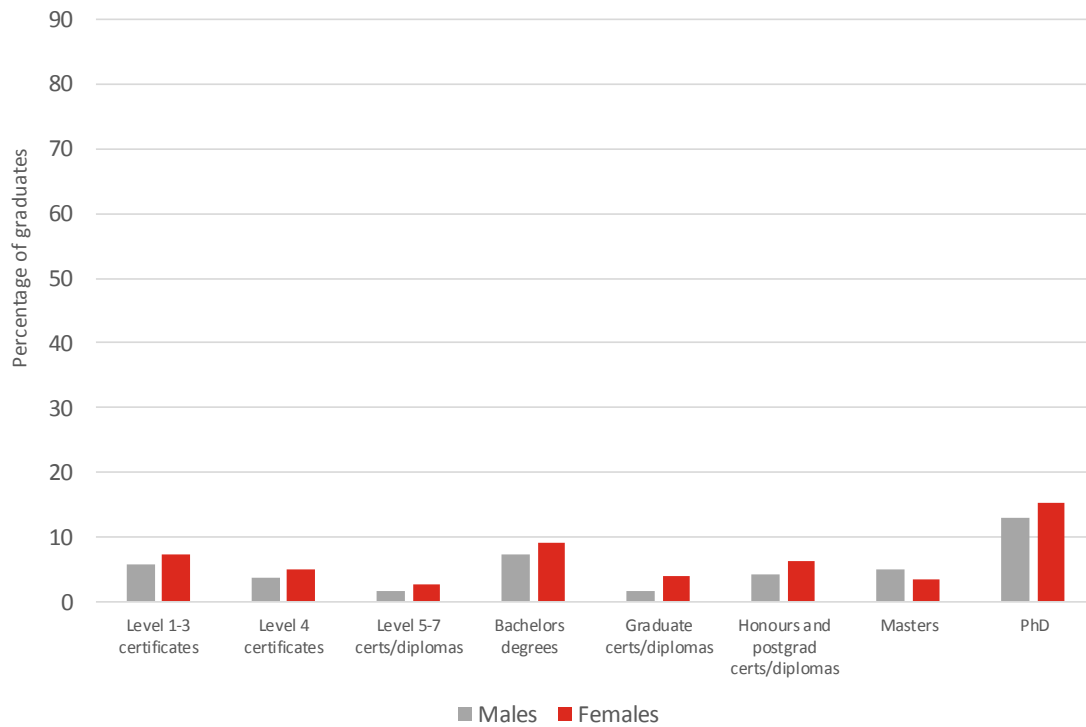
For subsequent qualifications, the proportion of international graduates who have domestic status when they complete their qualification varies by qualification level and gender (see Figure 4b). Rates are higher for females than for males at all qualification levels except masters. The highest rates are for females who complete a qualification at Level 1-3 certificate level (80 percent) or Level 4 certificate level (63 percent). It is likely that some of these qualifications are completed as part of the assimilation process after individuals have gained New Zealand residence or citizenship (see the section below on wānanga students for examples). More than half of

¹⁷ Domestic status is usually obtained before a graduate starts a qualification but sometimes may be obtained during it (see Table 3).

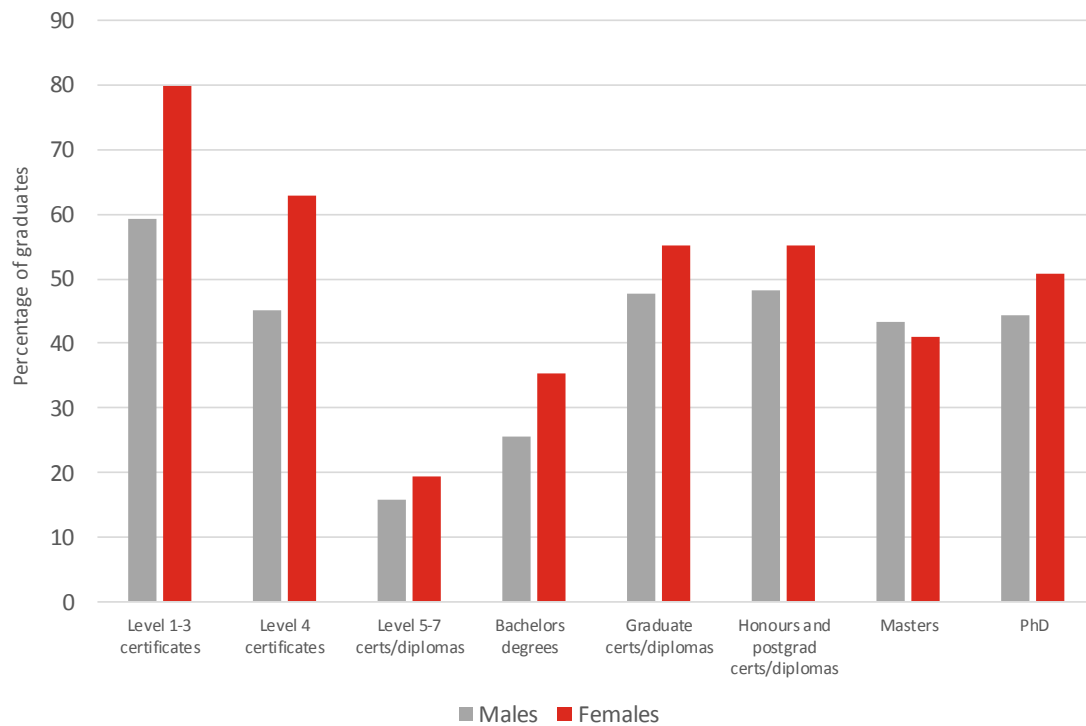
Figure 4

Average percentage of male and female international graduates who have domestic status when they start or by the time they complete their qualification, by qualification level, 2010-2014

(a) First qualifications



(b) Subsequent qualifications



international, female graduates who complete a subsequent qualification at graduate diploma or certificate, or bachelors with honours or postgraduate certificate or diploma level (55 percent for each), or PhD level (51 percent) have domestic student status before they start this qualification or by the time they finish it.

Rates for international, male graduates who complete a subsequent qualification are also highest for those whose subsequent qualification is a Level 1-3 certificate (59 percent) or Level 4 certificate (45 percent). Rates are also high for those whose subsequent qualification is at postgraduate level, with 48 percent of bachelors with honours and postgraduate certificate or diploma graduates, 43 percent of masters graduates and 44 percent of PhD graduates obtaining domestic status.

The percentage of international graduates who have domestic status when they complete a qualification are lowest for international graduates who complete a subsequent qualification at Level 5-7 certificate or diploma level (16 percent of male graduates and 19 percent of female graduates), and bachelors-degree level (26 percent of male graduates and 35 percent of female graduates).

Age

The proportion of international students who have domestic status when they complete a qualification also varies by age. Young, international graduates are less likely to become domestic with, on average between 2010 and 2014, 5 percent across all qualification levels becoming domestic. In contrast, 23 percent of older graduates became domestic, on average over the same time period.

Subsector

The percentage of international graduates who have domestic student status when they start and complete their qualification also varies by subsector. Part of the reason for this will be that different subsectors tend to focus on offering qualifications at different levels and we know from the analyses above that domestic status is associated with qualification level.

Between 2010 and 2014, on average, around 6 percent of international graduates who study at government-funded private training establishments have domestic status when they complete their qualification, around 12 percent of polytechnic graduates, 17 percent of university graduates and all wānanga graduates. In each case, most of the graduates also had domestic status when they started studying towards their qualification. In the case of wānanga, all of the several hundred formerly international wānanga graduates have domestic status when they start their qualification and for four out of five graduates (78%), the wānanga study is undertaken following obtainment of an earlier qualification.

Many of the wānanga qualifications completed are ones that are specifically designed for individuals who are settling in New Zealand, which makes sense given that the study is undertaken after residence has been obtained. For example, those migrating to New Zealand may complete the certificate in Kiwi Ora – Foundation Studies for Migrant Settlement, the certificate in Mauri Ora, and/or the certificate in English for Speakers of Other Languages. That all formerly international students have domestic status before they start and complete a wānanga

qualification also explains why the numbers of international student enrolments and completions reported at wānanga are very low each year.¹⁸

Trends over time

Table 5 shows the proportion of graduates at each qualification level who have domestic status or not by the time they complete a qualification, by completion year. Various patterns over time can be seen. For example, the proportion of graduates at bachelors to masters level who have gained domestic status at some point has slowly increased from 2003 to 2010, but since then the rates have decreased again. Rates have also decreased for PhD graduates since 2010. And a big jump in rates can be seen from 2004 to 2005 for those who have completed a Level 1-4 certificate. It is likely that more than one factor has influenced these changes, including differences in the composition of graduate cohorts, and policy changes impacting on international students.

Table 5

Percentage of international graduates who have domestic student status in the last year of completing a qualification, by qualification level

	Level 1-3 certs	Level 4 certs	Level 5-7 certs/dips	Bachelors degrees	Graduate certs/dips	Honours	Masters	PhD
International graduates with domestic status as a percentage of total graduates								
2003	3	2	3	9	7	15	14	22
2004	9	3	3	8	8	15	16	33
2005	23	10	4	8	12	17	17	28
2006	24	14	6	7	19	24	20	28
2007	24	16	8	10	22	28	25	31
2008	17	12	8	13	19	29	25	24
2009	16	16	7	18	17	34	28	22
2010	22	12	7	19	18	31	29	23
2011	16	12	5	16	18	27	29	22
2012	17	14	5	15	13	22	26	20
2013	17	13	6	12	12	18	19	19
2014	13	15	3	11	9	18	14	17

Note: 'Honours' includes bachelors with honours degrees, postgraduate diplomas and postgraduate certificates.

¹⁸ For example, see table ENR.25 of the Provider-based enrolments table: <http://www.educationcounts.govt.nz/statistics/tertiary-education/participation>

4 WHAT INTERNATIONAL GRADUATES EARN AFTER COMPLETING A QUALIFICATION

After completing their tertiary education qualification(s), some international students remain in New Zealand to work. This chapter looks at how much these students earn in the first eight years after study. In each year, we exclude those who have returned overseas for more than nine months in that year and those who are doing further study.¹⁹ Graduates are counted as being in employment if they receive earnings for four or more months in a year, or receive any self-employed income excluding rental income.

Earnings by qualification level

Similarly to young, domestic graduates, median earnings for international graduates who work in New Zealand after completing a qualification increase with the level of qualification they have completed (Figure 5). In each of the first eight years after study, median earnings are highest for graduates who complete a postgraduate qualification, particularly for those who complete a PhD. Median earnings for both young and all international PhD graduates are around \$19,000 higher than the comparable earnings for all postgraduates in the first five years after study, rising to around \$27,800 higher, on average, for graduates of all ages in the sixth to eighth years after study.²⁰

The next highest earnings are for international graduates who complete a graduate certificate or diploma, followed by those for bachelors-degree graduates. Median earnings are lowest for those who complete a Level 1-4 certificate or Level 5-7 certificate or diploma.

Median earnings for young, international graduates who complete a Level 1-4 certificate or Level 5-7 certificate or diploma are higher in the second and third years than in the first year after study; however, earnings are similar in all later years. In contrast, median earnings are higher in each year after study for young, international students who have completed a higher-level qualification. Eight years after study, earnings are around \$58,000 for postgraduate qualified, \$55,400 for bachelors-degree graduates, and \$51,600²¹ for those who have completed a graduate certificate or diploma. This compares to around \$36,000 to \$37,500 for those who have completed a lower-level qualification.

Similar trends are also observed for international graduates of all ages, although earnings tend to be higher for these graduates, particularly for those who have completed a Level 5-7 certificate or diploma or Level 1-4 certificate. These higher earnings may reflect that older graduates have more work experience than younger graduates.

¹⁹ Also excluded is the very low number of international graduates who are on a benefit for four months or more in a year and who do not work for a longer period than this.

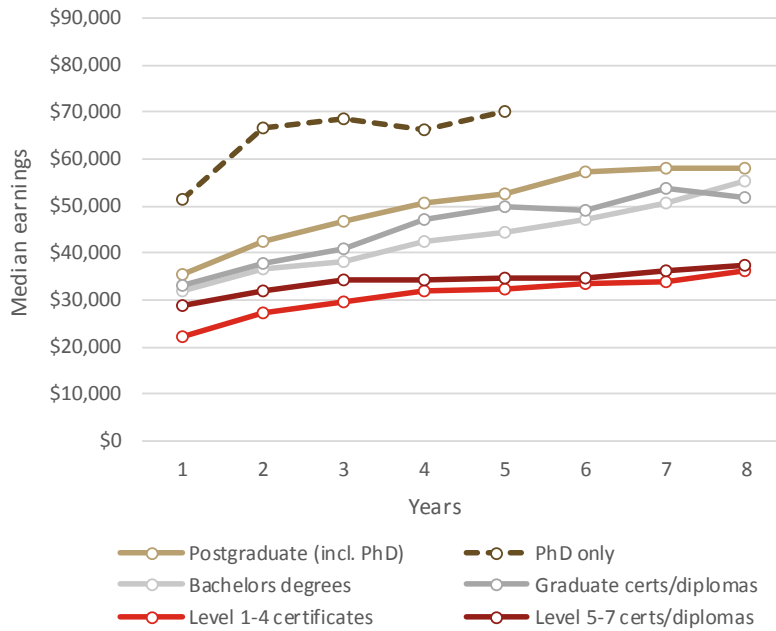
²⁰ Earnings for young PhD graduates are suppressed in the sixth to eighth years after study owing to small numbers of graduates.

²¹ Unlike for other qualification levels, the highest median earnings for graduates who complete a graduate certificate or diploma are in the seventh year after study rather than the eighth. Median earnings in the seventh year are \$53,400 compared to \$50,800 for bachelors-degree graduates.

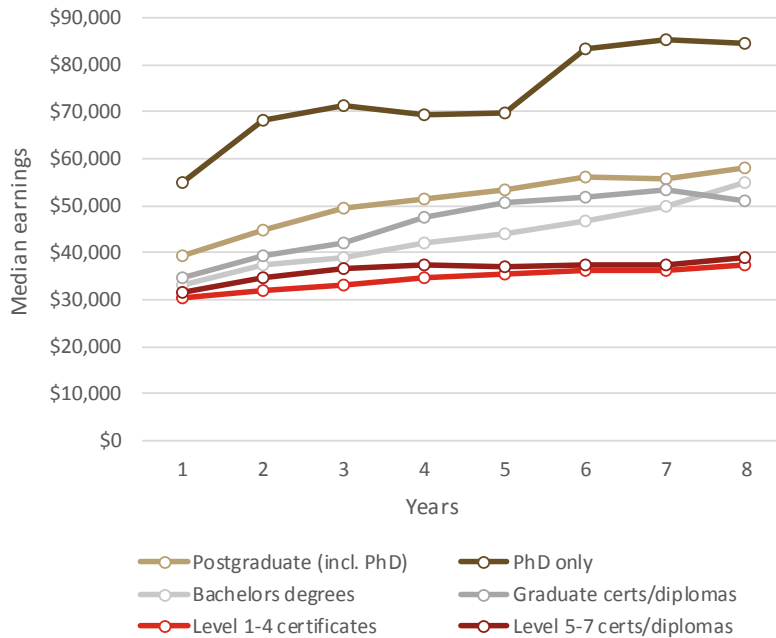
Figure 5

Median earnings for international graduates who work in New Zealand after they complete their studies, for the first eight years after qualification completion, by qualification level

(a) Young, international graduates



(b) All international graduates



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Dashed lines indicate fewer than 50 employed graduates, on average, each year. Some results have been suppressed due to small graduate counts.

5 HOW DO THE RESULTS FOR YOUNG, INTERNATIONAL GRADUATES COMPARE TO THOSE FOR YOUNG, DOMESTIC GRADUATES?

What young, international graduates do after they complete a qualification is often very different from what young, domestic graduates do. We expect this to be the case, as only some international students hope to remain in New Zealand to work after they complete their studies. Many come to New Zealand specifically to study and then return to their home countries with their New Zealand qualifications.

Differences in what graduates do

Figure 6 shows what young, international and domestic graduates do after they complete a Level 5-7 certificate or diploma, bachelors degree, or graduate certificate or diploma. As expected, young, international graduates are more likely to return overseas when they complete their studies. Around 10 percentage points more young, international graduates go overseas in the first year after study than young, domestic graduates, at Level 5-7 certificate or diploma, and graduate certificate or diploma level. This figure rises to 34 percentage points in the eighth year after study. On average, around 31 percentage points more international graduates who have completed a bachelors degree go overseas than domestic graduates in each of the first eight years after study. In the first year after study, this corresponds to four times as many young, international graduates returning overseas compared to young, domestic graduates. However, because the percentage of graduates who go overseas is higher in later years, eight years after study the ratio is around double.

Young, international Level 5-7 certificate or diploma and bachelors-degree graduates are less likely to do further study in New Zealand than young, domestic graduates, especially in the first two years after completion of their diploma or degree. There are 23 percentage points and 17 percentage points fewer graduates in the first year after study for each level respectively. Further study rates at graduate certificate or diploma level are similar for both young, international and young, domestic graduates in each of the first eight years after study. Part of the reason for this lack of difference in further study rates is that both rates are relatively low.

Correspondingly, the percentage of young, international graduates who work in New Zealand after they complete their studies is lower than the percentage of young, domestic graduates. At Level 5-7 certificate or diploma level, and at graduate certificate or diploma level, the percentage point difference is higher in later years after study, with 26 to 27 percentage points fewer international graduates employed in New Zealand eight years after they complete their qualification. At bachelors-degree level, the percentage point difference is more consistent, with around 25 percentage points fewer young, international graduates employed in New Zealand in each year after study.

Differences in what graduates earn

Median earnings for young, international graduates who work in New Zealand after they complete their studies tend to be lower than those for young, domestic graduates in most fields of study at Level 5-7 certificate or diploma, bachelors-degree, and graduate certificate or diploma level (Figure 7). The exception is those who have studied *health*, where earnings for international graduates are higher than those for domestic students at these levels. Narrow fields of study studied by these international graduates include *nursing* and *medical studies*.

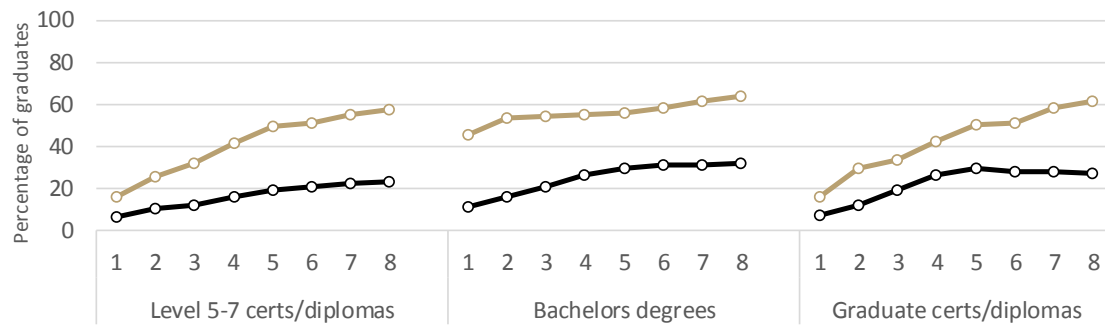
Median earnings for young, international graduates who complete a qualification in *management and commerce* tend to be very low relative to those for domestic students at all three qualification levels. Median earnings for *information technology* graduates are also relatively low, particularly at Level 5-7 certificate or diploma and graduate certificate or diploma level, as are those for international graduates who complete a bachelors degree in *society and culture*.

The data we have does not allow us to determine the reasons for these differences in earnings. There is likely to be a range of reasons involved. For example, international and domestic graduates may work for different numbers of hours and the types of jobs that graduates with the same qualification obtain, or their likelihood of progression within a company, may differ depending on other factors apart from the qualification level gained. English language skills are likely to be an important factor; for example, Henderson, Trlin and Watts (2006) found that English language proficiency was an important factor affecting the recruitment and employment prospects of immigrants. Research by Earle (2009) also found that people with English as an additional language tend to work in lower-skilled jobs than people with English as a first language, even if they have the same level of qualification.

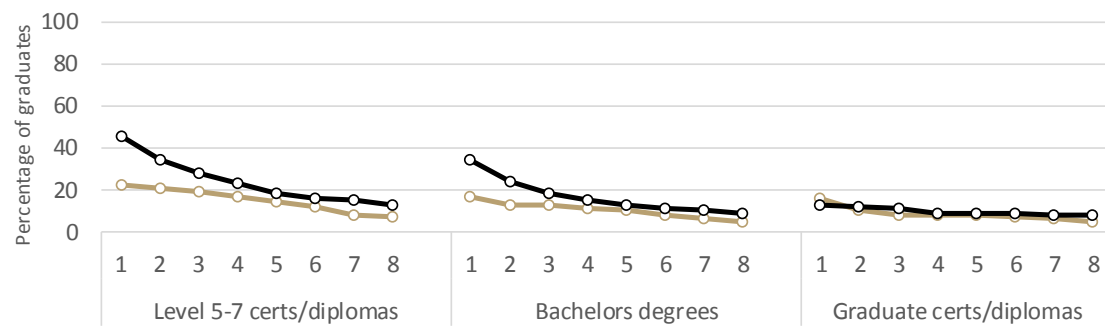
Figure 6

Percentage of young, international and young, domestic graduates who return overseas, do further study, or work in New Zealand in the first eight years after qualification completion

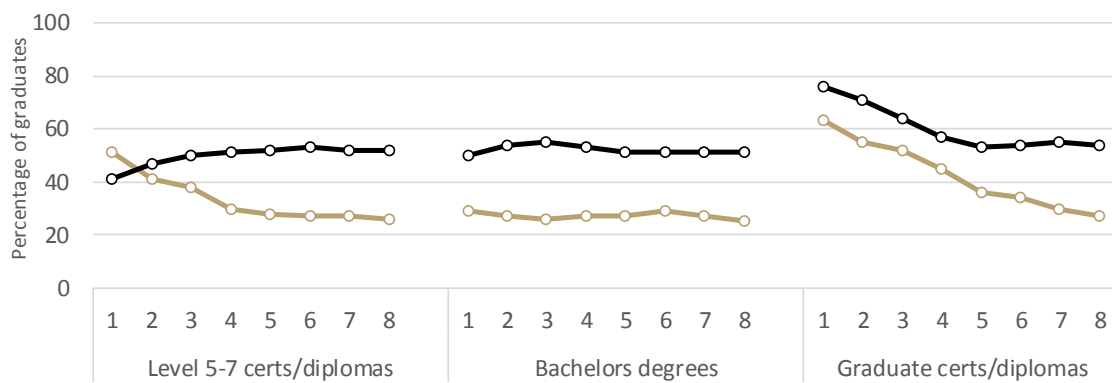
(a) Percentage of graduates who go overseas



(b) Percentage of graduates who do further study



(c) Percentage of graduates who work in New Zealand and do no further study

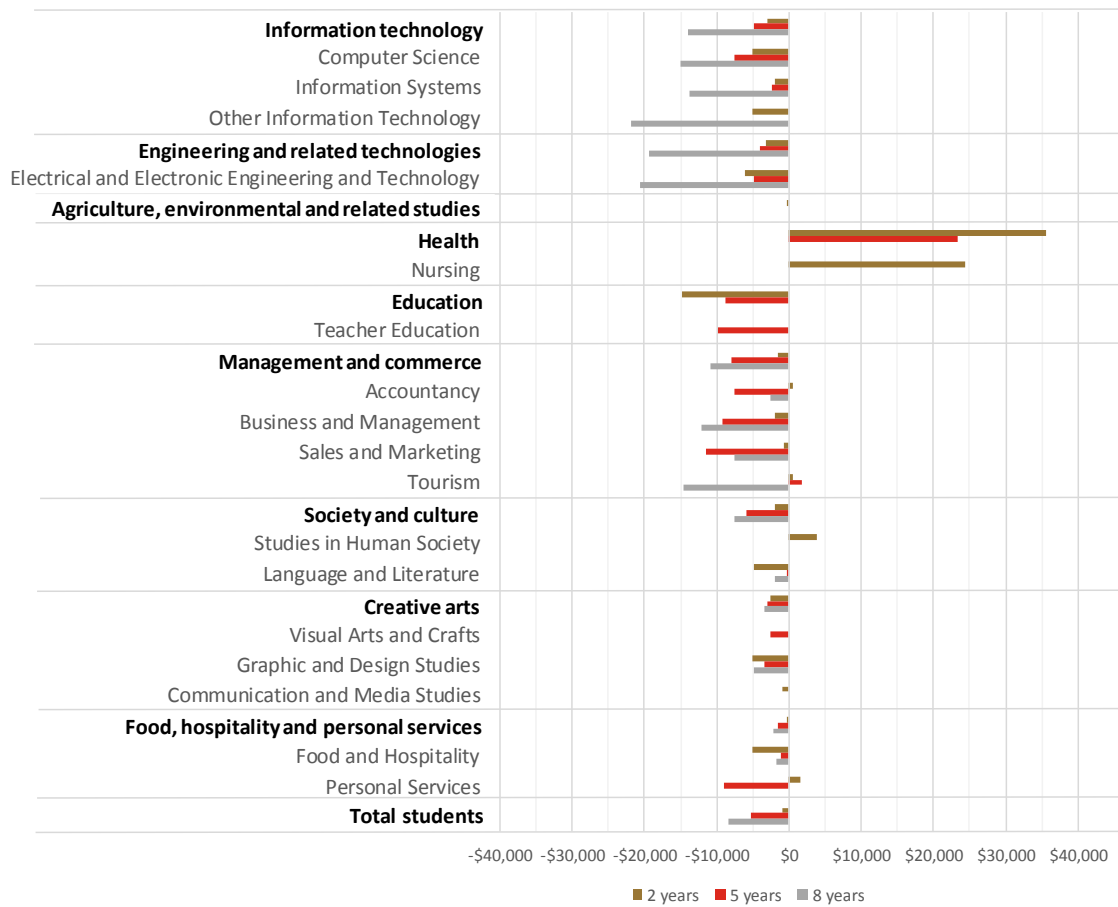


—○— All young, international —○— All young, domestic

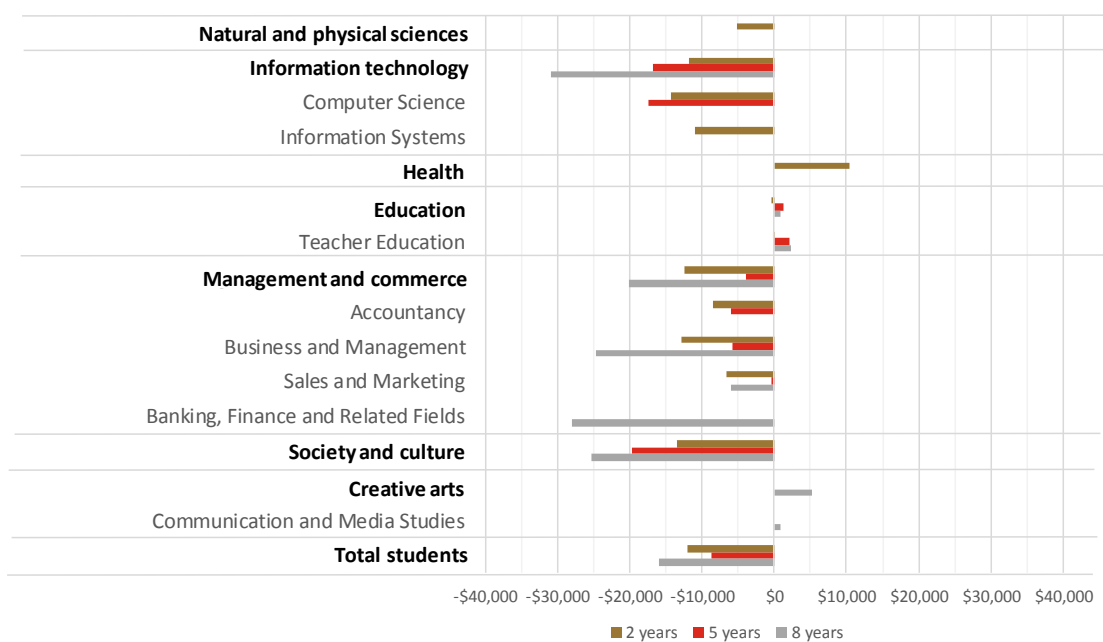
Figure 7

Differences in median earnings for young, international graduates compared to those for young, domestic graduates, in the second, fifth and eighth years after study

(a) Level 5-7 certificate or diploma graduates



(b) Graduate certificate or diploma graduates



(c) Bachelors-degree graduates



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Field-of-study-by-year combinations are only shown if there are 20 or more graduates. Broad fields of study are shown in bold font, all other fields are narrow ones.

6 WHAT DO INTERNATIONAL STUDENTS WHO COMPLETE A POSTGRADUATE QUALIFICATION IN NEW ZEALAND DO?

This chapter focuses on international students who complete a postgraduate qualification in New Zealand, looking at both what they do and how much they earn if they remain in New Zealand to work after their studies.

Students can complete a postgraduate qualification in a wide range of fields of study and what they have studied can have a large impact both on what they do after they complete their qualification and on how much they earn if they remain in New Zealand. In this chapter and chapters 7 to 9, we look at destinations and earnings for international graduates by qualification level and broad field of study.²²

Destinations by broad field of study

Most young, international students who complete a postgraduate qualification in New Zealand study *management and commerce, society and culture, engineering and related technologies* or *natural and physical sciences*.

Eight years after completing their studies in New Zealand, 60 percent or more of young, international students who complete a postgraduate qualification in any broad field return overseas (see Figure C1). Overseas rates are highest for those who complete qualifications in *natural and physical sciences* and *society and culture*, with almost three-quarters of these graduates returning overseas eight years after study (73 percent and 74 percent respectively).

Further study rates are highest in the first year after completing a qualification for young, international students who complete a qualification in *health* or *society and culture*, with a little under a third of these graduates continuing on to do further study.

The proportion of young, international graduates who work in New Zealand and do no further study after completing their postgraduate qualification is highest in the first year after study and tends to decrease over subsequent years as the proportion of young, international graduates who return overseas for nine months or more in a year increases. Employment rates are highest in the first six years after study for *information technology* graduates, with 56 percent in employment in the first year after study and an average employment rate of 42 percent in the next five years. Employment rates are also relatively high for those who study *engineering and related technologies, health* or *management and commerce*, with, on average across all eight years, around one in three graduates remaining in New Zealand to work.

The percentage of young, international graduates who work in New Zealand is lowest for those who complete a postgraduate qualification in *natural and physical sciences* or *society and culture*, with, on average, around one in five of these graduates working in New Zealand in each year after study.

²² In chapters 6 to 9, we limit our analyses to look only at fields of study where there are 50 or more graduates, on average, in each year after study. This is to ensure that the trends described are relatively robust and do not fluctuate too much owing to small sample sizes.

Earnings by broad field of study

For young, international students who complete a qualification at postgraduate level and then work in New Zealand after they complete their studies, those who study *information technology, engineering and related technologies*, and *health* have the highest median earnings. Graduates who study *natural and physical sciences* have median earnings that are around the average for all postgraduate qualified. However, median earnings for graduates who study *creative arts, society and culture* and perhaps surprisingly, *management and commerce* are the lowest for all young, international students who complete postgraduate qualifications. The narrow fields of study that most *management and commerce* graduates study are *business and management, banking, finance and related fields* and *sales and marketing*.

Similar patterns are observed for international graduates of all ages except that graduates who have completed a postgraduate qualification in *health* have higher earnings in most years after study. This may reflect that this field is very well paid, or that these graduates already have work experience in this area, or it may be an artefact of the relatively small number of young graduates who complete a qualification in this area.

Doctor of Philosophy (PhD) graduates

Looking at the outcomes for PhD graduates is of particular interest as, since 2005, the government has paid a tuition subsidy to providers who enrol international students in PhD programmes. This subsidy recognises the contribution that these PhD students make to New Zealand's national research output. Because their study is subsidised, providers may not charge them fees beyond the fees charged to domestic students. Analysing the outcomes of these students gives a sense of the return on this investment. There are two measures that are of particular interest:

- Whether or not these students tend to stay in New Zealand after they complete their PhDs. Doing so means that the knowledge and research skills they have obtained through their studies will contribute to New Zealand's knowledge base directly. However, it is important to note that even if these students return overseas the increased academic linkages, and perhaps business opportunities, created between New Zealand and these countries via the PhD graduates may still be very important.
- How much PhD and other postgraduates earn in New Zealand if they remain here to work. This is an important measure, as how much an employer is willing to pay an employee is one way of determining the value of the skills of that employee to New Zealand's economy. This is because employers will not usually pay an employee more than the value they bring to the business.

From chapter 2, we know that PhD graduates are the most likely of all international graduates to return overseas after completing their qualification in New Zealand. Almost half (48 percent) of young PhD graduates return overseas in the first year after they complete their doctorate, and the number is higher when we look at PhD graduates of all ages, with 59 percent returning overseas. The proportion is highest five years after study, with around three-quarters of international PhD graduates overseas at this time (75 percent for graduates of all ages and 79 percent for young graduates).

The numbers of young PhD graduates who work in New Zealand in the first year after they complete their qualification is relatively high at 45 percent. However, in the second year after study only 29 percent are employed in New Zealand. A similar pattern is seen for PhD graduates

of all ages, with 34 percent working in New Zealand in the first year after they complete their studies, 26 percent in the second year, and between 15 and 23 percent in the third to eighth years after study.

Compared to young, domestic PhD graduates, 16 percentage points more young, international graduates go overseas in the first year after study, and around 30 percentage points more in each of the next seven years. Conversely, the percentage of young, international graduates who work in New Zealand after they complete their studies is lower: 9 and 18 percentage points less in the first and second years after study respectively, and around 30 percentage points less in the third to seventh years after graduation.

Of those international PhD graduates who do remain in New Zealand, their median earnings are very good compared to those of other graduates. Median earnings for graduates of all ages are around \$19,000 higher than those for all international postgraduates in the first five years after study, rising to around \$27,800 higher, on average, in the sixth to eighth years after study. Although results are limited because of small numbers of graduates, there are also some indications that earnings for those who work in New Zealand after completing their studies are highest in the first two years after study for *management and commerce, engineering and related technologies, and information technology* PhD graduates.

7 WHAT DO INTERNATIONAL STUDENTS WHO COMPLETE A GRADUATE CERTIFICATE OR DIPLOMA IN NEW ZEALAND DO?

Most young, international graduates who complete a graduate certificate or diploma have studied the broad fields of *management and commerce*, *information technology* or *education*.

The percentage of graduates who work in New Zealand after they complete their studies is very high in the first year after study for all fields of study, particularly for *information technology* at 72 percent and *management and commerce* at 66 percent (see Figure C2). In later years, the rates are incrementally lower and the proportion who return overseas increases, with 54 percent of *information technology* and 60 percent of *management and commerce* graduates overseas eight years after study.

The percentage of young, international graduates who work in New Zealand is lower for those who study *education*, at just under half (49 percent) of all graduates in the first year after study. And the percentage of graduates who go overseas is higher: 39 percent in the first year after study, 64 percent in the fifth, and 79 percent in the eighth year.

Young, international graduates who complete a graduate certificate or diploma in *education* and work in New Zealand have considerably higher median earnings than the average for all graduates at this level, with median earnings reaching around \$60,000 in the fifth year after study and \$68,500 in the eighth year after study. Median earnings for young, international *information technology* and *management and commerce* graduates reach \$54,800 and \$48,400 respectively, eight years after study.

Similar patterns are observed for international graduates of all ages.

8 WHAT DO INTERNATIONAL STUDENTS WHO COMPLETE A BACHELORS DEGREE IN NEW ZEALAND DO?

The most common fields of study in which young, international graduates complete a bachelors degree are *management and commerce*, *society and culture*, *information technology* and *natural and physical sciences*.

Destinations by broad field of study

Further study rates are relatively high in the first year after students complete their degree, especially for *natural and physical sciences*, where around 28 percent of young graduates continue to do further study (see Figure C3). Further study rates for graduates in most other fields of study vary from 13 to 20 percent in the first or second year after completion of a bachelors degree.

The percentage of young, international graduates who work in New Zealand after they complete their studies is highest in the first year after study for those who complete a qualification in *health* (52 percent), *information technology* or *engineering and related technologies* (both 40 percent). In general, employment rates are more consistent across years for international graduates who complete a bachelors degree compared to graduates who complete qualifications at other levels, and rates remain highest for these three fields of study across all eight years after study.

On average across all eight years after study, around a quarter of young, international graduates who complete a qualification in *management and commerce* (26 percent) or *creative arts* (27 percent) work in New Zealand after they complete their studies. The percentage of young, international graduates who work in New Zealand is lowest for those who studied *education* and *society and culture*.

Overseas rates are highest for *education* and *society and culture* bachelors-degree graduates, with, on average, around two-thirds of these graduates overseas in each of the first eight years after study. Overseas rates are also high in later years after study for *creative arts* and *management and commerce* graduates, with approximately two-thirds of these graduates overseas in the eighth year after study. Overseas rates are lowest for those who study *engineering and related technologies* or *health*, with around half of these graduates overseas in the eighth year after study.

Earnings by broad field of study

Young, international bachelors-degree graduates who work in New Zealand after completing a qualification in *health* have the highest median earnings of all young, international bachelors-degree graduates in the first six years after study. These graduates mainly comprise *nursing* graduates, who have median earnings of \$70,300 eight years after study, and *medical studies* graduates, who earn almost twice as much as *nursing* graduates in most years after study, reaching \$129,300 in the eighth year after study.²³

In the seventh and eighth years after study, median earnings for young, international graduates who have completed a qualification in *engineering and related technologies* become the highest

²³ The differential is even higher for young, domestic students with *medical studies* graduates earning, on average, 2.26 times as much as *nursing* graduates (\$119,000 compared to \$52,500).

across all broad fields of study, reaching \$77,000.²⁴ Most of these graduates have studied *electrical and electronic engineering and technology*. Earnings for *engineering and related technologies* graduates are also above average in earlier years.

Median earnings for those who complete a qualification in *natural and physical sciences* are around the average, or slightly higher, for all young, international bachelors-degree graduates, whereas those for *information technology* graduates are around the average for the first three years after study and are higher than average in later years, reaching \$62,700 eight years after study.

On the other hand, median earnings for young, international bachelors-degree graduates who work in New Zealand after completing a qualification in *management and commerce, society and culture* or *creative arts* are lower than the average for all young, international bachelors-degree graduates in all of the first eight years after study. Eight years after study, earnings reach \$51,600 for *management and commerce* graduates, \$45,900 for *society and culture* graduates and \$46,700 for *creative arts* graduates.

The main narrow fields of study that *management and commerce* graduates study are *business and management* (median earnings of \$46,600, eight years after study), *banking, finance and related fields* and *sales and marketing* (median earnings of \$52,000 for both, eight years after study). The main *society and culture* narrow fields of study are *economics and econometrics, law* and *language and literature*, with median earnings respectively, eight years after study, of \$43,500, \$56,800 and \$44,200.

Similar patterns are observed for international bachelors-degree graduates of all ages who work in New Zealand after completing their qualification.

²⁴ A similar pattern is seen for international graduates of all ages, where the number of graduates is higher, making it more likely that this pattern is real and not simply a fluctuation owing to small numbers of graduates.

9 WHAT DO INTERNATIONAL STUDENTS WHO COMPLETE A LEVEL 5-7 CERTIFICATE OR DIPLOMA IN NEW ZEALAND DO?

Most young, international graduates who complete a Level 5-7 certificate or diploma study the broad fields of *management and commerce*, *society and culture*, *information technology*, *creative arts* or *food, hospitality and personal services*.

Further study rates are high in the first year after study for *education*, *society and culture* and *creative arts* graduates, with 40 to 46 percent of young, international graduates continuing on to do further study (see Figure C4). Further study rates are between 14 and 20 percent for all other broad fields of study.

The percentage of young, international graduates who work in New Zealand after they complete their studies is high in general for Level 5-7 certificate and diploma graduates. Generally, rates are highest in the first year after study, and lower in later years after study. Rates are highest for graduates who complete a qualification in *food, hospitality and personal services* and *engineering and related technologies*, with almost seven out of ten graduates (69 percent each) working in New Zealand in their first year after study. Rates are also high for *management and commerce* and *information technology* graduates at 59 percent and 52 percent of graduates. In contrast, rates are lower for young, international graduates who complete a Level 5-7 certificate or diploma in *education* or *society and culture*. However, employment rates are higher in subsequent years and part of the reason for the initially low employment rates for these graduates is their high further study rates.²⁵

The percentage of young, Level 5-7 certificate or diploma graduates who return overseas is low in the first year after study, at only 6 to 16 percent of graduates, except for those who study *society and culture*, *creative arts* and *education*, where a little over a quarter of graduates return overseas. Rates are higher in later years for all fields of study, with 44 percent of *food, hospitality and personal services* young, international graduates overseas eight years after study, around half of *information technology* and *engineering and related technologies* graduates, and 57 percent to 64 percent of *education*, *management and commerce*, *society and culture*, *health* and *creative arts* graduates.

Young, international graduates who complete a Level 5-7 certificate or diploma in *engineering and related technologies* have higher than average median earnings compared to other graduates at this level. Although numbers of young, international graduates are low for *health* and *education*, there are indications that earnings for these graduates are also high in most years after study. This is also the case when looking at graduates of all ages.

Median earnings for Level 5-7 certificate or diploma graduates in *information technology* are lower than average in the first year after study and then increase to become similar to, or higher than, the average in later years. *Management and commerce* graduates have median earnings similar to the average in all of the first eight years after study, reaching \$37,200 in the eighth year after study.

Young, international graduates who complete a Level 5-7 certificate or diploma in *society and culture*, *creative arts* or *food, hospitality and personal services* and then work in New Zealand

²⁵ The order of precedence used when assigning a destination to each graduate means that if a graduate both does further study and works in the same year, they are assigned to the Further study destination. See chapter 2 for exact definitions for each destination.

have the lowest median earnings in most years after study. Many *society and culture* graduates have completed a qualification in *language and literature*, with some studying *English for speakers of other languages* (ESOL) at detailed field level.

10 WHAT DO INTERNATIONAL STUDENTS WHO COMPLETE A LEVEL 1-4 CERTIFICATE IN NEW ZEALAND DO?

Young, international graduates who complete a Level 1-4 certificate have very high further study rates, with 94 percent of *natural and physical sciences* graduates continuing on to do further study in the first year after completion of their certificate, more than 80 percent of *creative arts* and *mixed field programmes* graduates and 62 percent of *management and commerce* graduates (see Figure C5). This is expected, as students study at Level 1-4 certificate level for a number of reasons including to improve their English language skills, to prepare for degree-level study, and to progress to higher-level qualifications. Many students who are intending to study at a higher level are also granted visas based on their intended pathway from lower to higher levels of study.

The percentage of graduates who work and do no further study in the first year after completion of their certificate is correspondingly low, although rates are higher in later years for most fields of study. Around a third of *natural and physical sciences* and *engineering and related technologies* graduates, around a quarter of *food, hospitality and personal services* and *mixed field programmes* graduates, and around one in five *management and commerce*, *society and culture* and *creative arts* graduates work in New Zealand in the eighth year after study.

The percentage of graduates who return overseas is low in the first year after study, with less than 20 percent of graduates returning in all broad fields of study except *society and culture* at 29 percent. However, rates are higher in later years. Eight years after study, around half of all *natural and physical sciences* and *food, hospitality and personal services* young, international graduates have returned overseas, and 57 to 65 percent of *mixed field programmes*, *management and commerce*, *society and culture* and *creative arts* graduates. Overseas rates for *engineering and related technologies* graduates are lowest, with 41 percent overseas eight years after study.

Young, international graduates who complete a Level 1-4 certificate in *engineering and related technologies* have median earnings that are higher than average in all eight years after study, reaching \$40,200 in the eighth year after study. In contrast, graduates who study *creative arts* or *society and culture* and then work in New Zealand have very low median earnings in the first year after study but these are higher in later years, increasing over the next eight years to around \$35,000, which is near the average for all Level 1-4 certificate young, international graduates. *Management and commerce* and *food, hospitality and personal services* graduates have median earnings which are close to the average in all eight years after study.²⁶

²⁶ Note that many Level 1-4 certificate graduates will have gained a subsequent qualifications(s) by the eighth year after completion of their initial certificate.

11 WHAT DO INTERNATIONAL STUDENTS WHO COMPLETE A QUALIFICATION IN STEM, INFORMATION TECHNOLOGY OR ESOL DO?

Outcomes for science, technology, engineering and mathematics (STEM) graduates

We live in an increasingly scientific and technology-driven society, which means that much of the job growth and associated skills shortages are in occupations that require qualifications in STEM fields of study. What international graduates who study these fields do after they complete their studies is of high interest, particularly since one way for New Zealand to gain these skills is for international graduates to study these fields here and then work in New Zealand after they complete their qualification.

In this report, we regard anyone who has completed a qualification in one of the following broad fields of study as having completed a STEM qualification:

- Natural and physical sciences
- Information technology
- Engineering and related technologies
- Architecture and building
- Agriculture, environmental and related studies
- Health.

Young, international graduates who complete a qualification in a STEM field are less likely to go overseas than the average for all fields of study, at each qualification level (Figure 8). Around 9 to 14 percentage points fewer graduates go overseas at each qualification level, except at postgraduate level where the difference is smaller at 3 percentage points, on average, across the eight years after study.

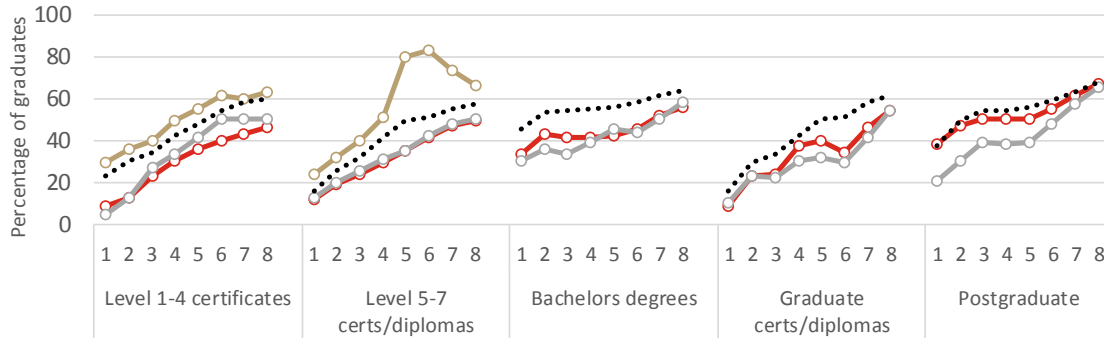
Further study rates are considerably higher in the first and second years after completion of a first qualification for young graduates who complete a Level 1-4 certificate in STEM, compared to the average at this level. In the first year after completion, almost three-quarters (73 percent) of graduates continue on to further study, which is more than 20 percentage points higher than the average. Rates are 15 percentage points higher in the second year after study, at 57 percent. Further study rates at other qualification levels are also a few percentage points higher in most years after study for young, international STEM graduates.

The percentage of young graduates who work in New Zealand and do no further study after they complete a qualification in STEM is also higher than the average across all fields of study, at each qualification level except postgraduate. The difference in employment rates is 11 percentage points, on average, across the first eight years after study for those who complete a Level 1-4 certificate, and around 6 to 7 percentage points for Level 5-7 certificate or diploma, and bachelors-degree graduates.

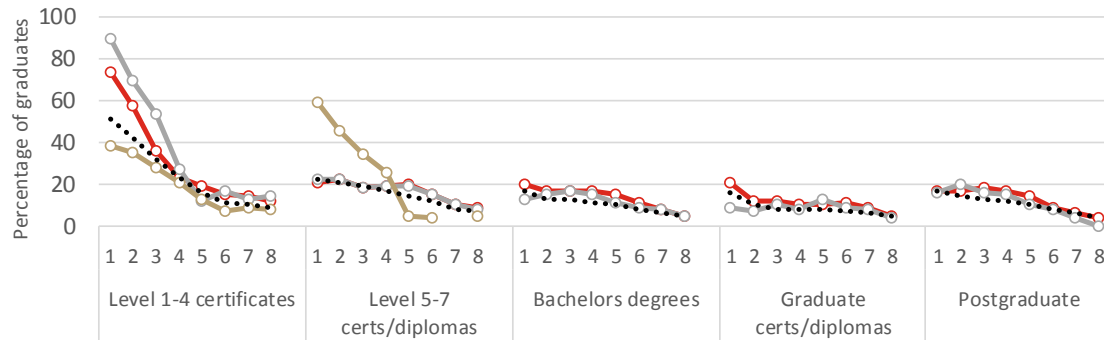
Figure 8

Percentage of young, international graduates who go overseas, do further study, or work in New Zealand in the first eight years after completing a qualification in STEM, information technology or ESOL

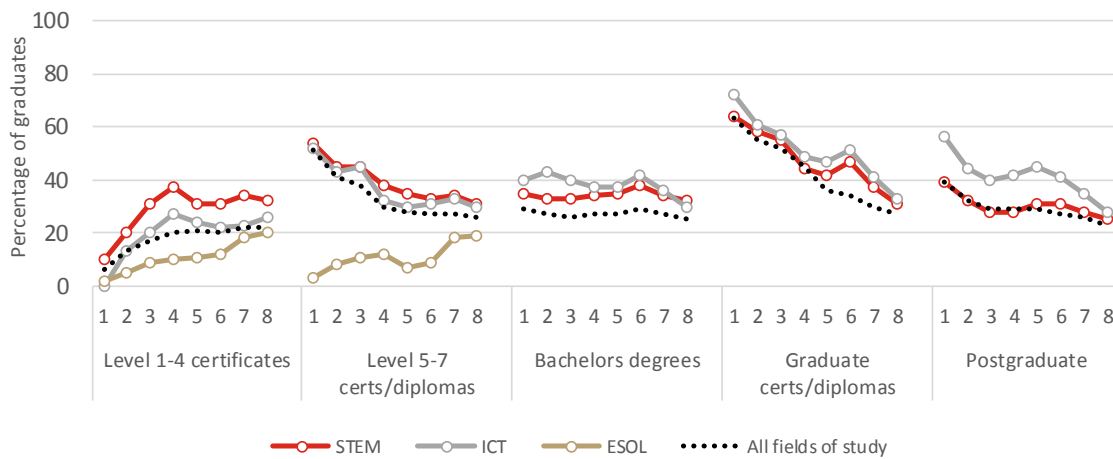
(a) Percentage of graduates who go overseas



(b) Percentage of graduates who do further study



(c) Percentage of graduates who work in New Zealand and do no further study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

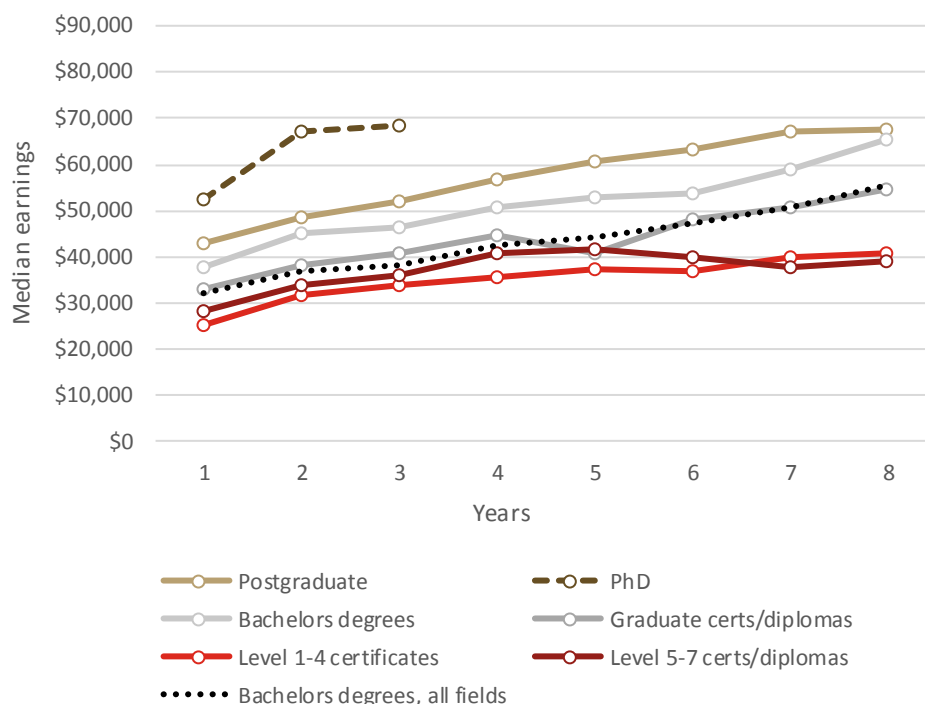
Median earnings are generally very good for young, international graduates who complete a qualification in a STEM field (Figure 9). Median earnings are particularly good for those who have completed a qualification at postgraduate or bachelors-degree level, with median earnings of \$67,600 and \$65,600 respectively, eight years after completion. These values compare to an average of \$58,000 for all young, international postgraduates, and \$55,400 for those who complete a bachelors degree. High earnings for those who study *information technology* and *engineering and related technologies* at postgraduate and bachelors-degree level, and also *health* at bachelors-degree level, are the main drivers behind these higher earnings. However, earnings are not so high for all fields within STEM; for example, those who complete a postgraduate qualification or bachelors degree in *natural and physical sciences* tend to have median earnings that are close to the average for all young, international graduates at that qualification level.

Earnings for young, international graduates who complete a Level 5-7 certificate or diploma, or a Level 1-4 certificate, in STEM are also higher than average. Earnings for *engineering and related technologies* and *health* graduates contribute to these higher earnings. Eight years after study, young, international Level 5-7 certificate or diploma graduates who complete a STEM qualification earn \$39,200, on average, and Level 1-4 certificate graduates earn \$40,600.

Median earnings for graduates who complete a graduate certificate or diploma in STEM are only around the average for all young, international graduates who complete qualifications at this level. *Information technology* is the main field of study that makes up STEM at this level. However, these graduates still earn \$54,800, on average, eight years after study, which is considerably more than graduates who complete a qualification in STEM at a lower level.

Figure 9

Median earnings for young, international graduates who complete a STEM qualification, by qualification level, for the first eight years after completion



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Dashed lines for PhD graduates indicate fewer than 50 employed graduates, on average, each year. Some results have been suppressed due to small graduate counts.

Outcomes for information technology graduates

An increasing number of jobs in a broad range of industries, for example agri-tech, health technology, and communications products and services, require skills in information technology. To help meet this increasing demand, \$28.6 million was allocated in Budget 2014 to establish three new Information and Communications Technology (ICT) graduate schools in New Zealand (New Zealand Government, 2014). Knowing what international graduates who study *information technology* in New Zealand do after they complete their studies is of high interest as it allows us to determine whether some of the current ICT skills shortages in New Zealand can be filled by international graduates.²⁷

The percentage of young, international graduates who return overseas each year after completing a qualification in *information technology* is lower than the average for all young, international graduates at each qualification level. Rates are similar to those for graduates who complete a qualification in STEM, except that they are lower at postgraduate level in the first five years after study: around 17 percentage points lower than the average rate at postgraduate level. Overseas rates are also slightly higher for Level 1-4 certificate *information technology* graduates than those for STEM graduates, in the third to eighth years after study, although these rates are still lower than those for graduates across all fields of study.

Similarly to young, international graduates who complete a qualification in STEM, further study rates are much higher in the first three years after study for Level 1-4 certificate *information technology* graduates than the average at this level. Almost 90 percent of these graduates continue on to do further study in the first year after completion of an initial qualification. Rates are similar to the average at other qualification levels.

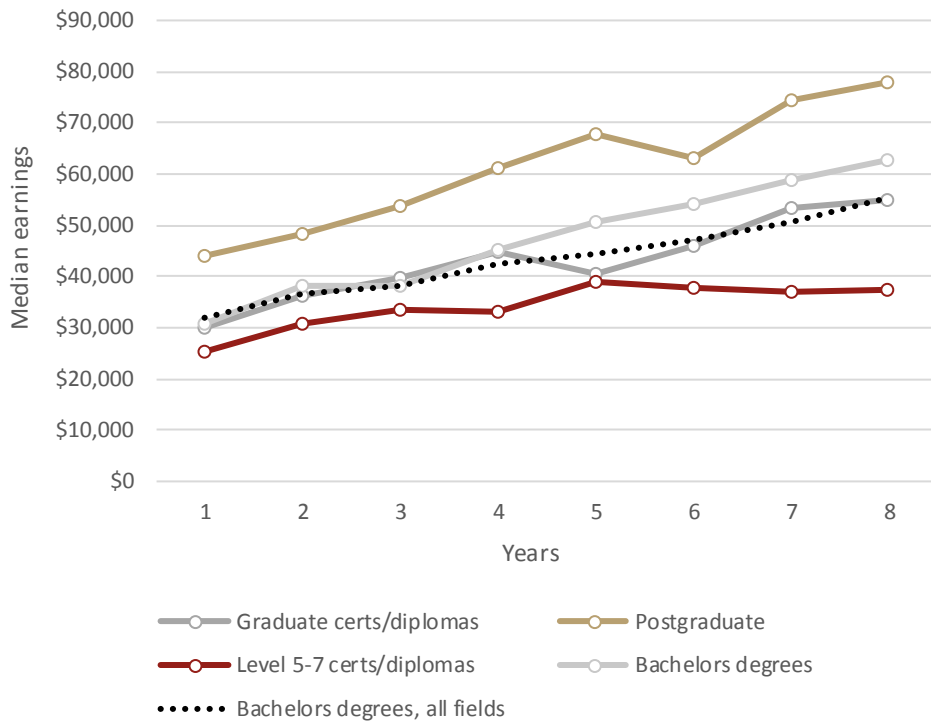
The percentage of young, international graduates who work in New Zealand and do no further study after completing a qualification in *information technology* is higher at bachelors-degree level and above than the average for each qualification level, with these rates 9 to 12 percentage points higher, on average, across the first eight years after study. They are also higher than the average for STEM graduates, particularly at postgraduate level.

Median earnings for young, international graduates who work in New Zealand after completing a qualification in *information technology* at postgraduate level are higher than average, reaching \$77,800 in the eighth year after study (Figure 10). Median earnings for those who complete a bachelors degree in *information technology* are also good: they are similar to median earnings across all fields of study in the first three years, and then increase, reaching \$62,700 eight years after study. Median earnings for those who complete a graduate certificate or diploma tend to be lower than the average earnings for graduates in all fields of study, but still reach \$54,800 eight years after study. Median earnings for Level 5-7 certificate or diploma *information technology* graduates are around the average for graduates at this level, and reach \$37,200 eight years after study.

²⁷ ICT occupations listed on the long-term skills shortage list for New Zealand all require a bachelors level qualification (NZQF Level 7) or above: <http://skillshortages.immigration.govt.nz/assets/uploads/long-term-skill-shortage-list-2016-04-11-.pdf>

Figure 10

Median earnings for young, international graduates who complete a qualification in information technology, by qualification level, for the first eight years after completion



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation. Earnings for graduates who complete a Level 1-4 certificate are not shown as the number of graduates who work in New Zealand is less than 20 in each year after study, on average.

Outcomes for English for speakers of other languages (ESOL) graduates

Similarly to the rest of this report, the following results are only for international students who complete a qualification at a government-funded tertiary education provider, or at a non-funded provider which voluntarily submits information about their students to the SDR. Around 1,000-2,000 international students complete ESOL qualifications at SDR providers each year. There is a large number of non-funded private training establishments and subsidiaries which also offer English language qualifications in New Zealand, with around 21,000 international students studying at these in 2014 and 2015 (Education New Zealand, 2016, 2015b), though not all of these students aim to complete a qualification. Unfortunately, no data about these students is available in the IDI and so we are not able to determine their outcomes.

Most ESOL qualifications completed by international students at government-funded providers are at Level 1-4 certificate or Level 5-7 certificate or diploma level.

Young, international students who complete a Level 1-4 certificate in ESOL are more likely to return overseas than the average rate across all fields of study. Conversely, their further study rates, and the proportion who work in New Zealand after they complete their qualification, are lower than average. These patterns are what we would expect with many of these students coming to New Zealand to do short-term English language courses. The percentage of graduates returning overseas is higher in later years after study, varying from 29 percent in the first year to almost two-thirds of graduates (63 percent) overseas eight years after completion of their certificate. The percentage of graduates who work in New Zealand after completing their studies is low, at 2 percent in the first year after study; however, the rate is higher in later years, reaching 20 percent eight years after study.

The proportion of young, international Level 5-7 certificate or diploma graduates who go overseas is higher than the average rate at this qualification level, especially in the fifth and sixth years after qualification completion. Further study rates are also much higher in the first four years after study than the average at this level, with 59 percent of graduates continuing to do further study in the first year after completion of an initial qualification compared to 22 percent for all Level 5-7 certificate or diploma graduates. These patterns are as expected as English language requirements mean that many international students are required to complete an ESOL qualification before they continue on to do further study.

The proportion of young, international graduates who complete a Level 5-7 certificate or diploma in ESOL and then remain in New Zealand to work after their studies is very similar to that for Level 1-4 certificate graduates in each of the first eight years after study. The proportion is much lower than the rate for all Level 5-7 certificate or diploma graduates (for example, 3 percent compared to 51 percent in the first year after study). For ESOL graduates who do work in New Zealand after their studies, earnings tend to be low.

12 STUDENTS FROM CHINA AND INDIA, AND ASEAN AND GULF COOPERATION COUNCIL COUNTRIES

International students from many different countries come to New Zealand to study. In this chapter, we focus on those who come from China and India: the two countries from which the largest numbers of our international students at tertiary education level come. We also look at those who come from Association of Southeast Asian Nations (ASEAN) countries: a group of 10 economically diverse nations²⁸ which have historical and growing links with New Zealand. Lastly we focus on the six countries that comprise the Gulf Cooperation Council (GCC),²⁹ as education is a cornerstone of New Zealand's relationship with GCC countries.

Most tertiary education international students in New Zealand come from China and India. Around 20,000 and 16,300 international students respectively from these two countries enrolled at tertiary providers in 2015.³⁰ Numbers of tertiary education international students from each of these countries are also increasing, with marked increases of 15 percent and 45 percent respectively from 2013 to 2014, and a further 13 percent and 45 percent from 2014 to 2015. In 2015, Chinese and Indian students comprised 59 percent of all international tertiary education students in New Zealand. These increases came on the back of the launch of the 'New Zealand Story', the 'New Zealand Education Story' and the 'Think New' international education brand in 2013. These involved increased in-market presence by people involved in promoting New Zealand as an education destination, promotional activities, media coverage, the launch of scholarships, and changes in November 2013 to students' rights to work (Education New Zealand, 2016, 2015b).

International students from different countries show different study patterns

Young, international students from different countries tend to complete qualifications at different levels. Those from India tend to complete Level 5-7 certificates or diplomas, graduate certificates or diplomas, or postgraduate qualifications, whereas ASEAN students are more likely to complete a bachelors degree (see Figure 11).³¹ There are large numbers of students from China who complete qualifications at most levels; however, the numbers of those who study at graduate certificate or diploma level are relatively low. Most GCC students complete a Level 1-4 certificate.

There are also differences in the most common fields studied for international students from different countries. For example, students from India who complete a Level 1-4 certificate are more likely to have obtained a practical qualification, for example one in the broad fields of *food, hospitality and personal services, engineering and related technologies or agriculture, environmental and related studies*. Graduates from ASEAN or GCC countries, or China, are more likely to have completed a Level 1-4 certificate in *language and literature* (48 percent, 81 percent and 42 percent respectively compared to 13 percent for Indian graduates).

The proportion of students of each gender also differs between international students from different countries. For students from India or GCC countries, almost four out of every five graduates are male (78 percent). By contrast, the proportion is more equal for ASEAN countries (44 percent male graduates) and China (46 percent male graduates).

²⁸ ASEAN countries comprise: Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

²⁹ GCC countries comprise: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates.

³⁰ These numbers are from the provider-based enrolments tables on the Education Counts website: www.educationcounts.govt.nz/statistics/tertiary-education/participation. Note that they exclude students who study at non-SDR private training establishments and subsidiaries.

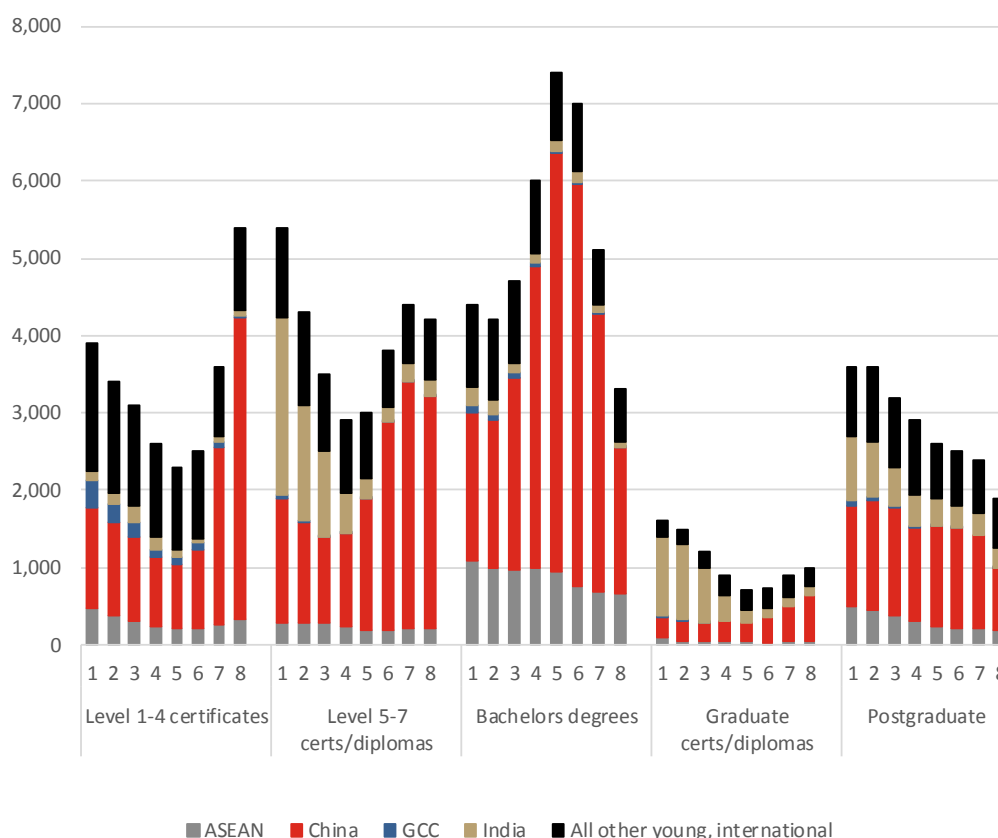
³¹ A reminder to readers to note that these numbers only include graduates who study at SDR-reporting providers.

What do students from China do when they have completed their qualification?

Eight years after graduation, the percentage of young, international Chinese graduates who have returned overseas is very similar to graduates who come to New Zealand from other countries, across all qualification levels, at 56 to 64 percent. The percentage of young, international graduates from China who return overseas after they complete a Level 1-4 certificate or postgraduate qualification is lower than the average for all young, international graduates (see Figure 12). Rates are also a little lower at Level 5-7 certificate or diploma level, and bachelors-degree level, but very similar to the average at graduate certificate or diploma level.

After completing a first qualification, young, international Chinese graduates are more likely to continue on to do further study in the next four to five years compared to the average rate for all young, international graduates. This is the case at all qualification levels except bachelors-degree level. Further study rates are particularly high for those who complete a Level 1-4 certificate, with 80 percent of graduates continuing on to further study the next year (29 percentage points higher than the average). Rates are also high for: Level 5-7 certificate or diploma graduates with 37 percent continuing on to do further study (15 percentage points higher than the average), and graduate certificate and diploma graduates at 39 percent (23 percentage points higher).

Figure 11
Number of young, international graduates from China, India, ASEAN, GCC and all other countries in the cohorts corresponding to each of the eight years after completion of a qualification, by qualification level



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

The percentage of young, international Chinese graduates who work in New Zealand and do no further study after they complete a qualification is, for those who complete a Level 1-4 certificate or postgraduate qualification, a few percentage points higher than the average for all young, international graduates. Employment rates are very similar to the average at bachelors-degree

level. In contrast, employment rates in New Zealand are lower than average in the first four or so years after graduation for Chinese graduates who complete a Level 5-7 certificate or diploma, or graduate certificate or diploma. However, this reflects the fact that further study rates are higher for these graduates.³²

What do students from India do when they have completed their qualification?

Indian students who complete a qualification at any level are less likely to return overseas after they have completed their studies compared to the average for all young, international graduates. On average, the proportion of young, international Indian graduates at each qualification level who return overseas is 20 to 26 percentage points lower than the average, three to eight years after completion of a qualification.

Young, international graduates from India are also less likely to continue on to do further study in the initial years after completion of a qualification, at most qualification levels. This is particularly the case at Level 5-7 certificate or diploma level, and postgraduate level, where the proportion of graduates who continue to do further study in the first year after study is 12 percentage points lower than the average for all young, international graduates. Rates remain 9 to 10 percentage points lower than the average in the next two years for Level 5-7 certificate or diploma graduates. The exception is bachelors-degree graduates, where further study rates are 11 percentage points higher than the average in the first year after study.

In contrast, the percentage of young, international Indian graduates who work in New Zealand and do no further study after completion of their qualification is considerably higher than the rate for all young, international graduates, at all qualification levels and in all eight years after completion of a qualification. The rate is 20 to 30 percentage points higher, on average, three to eight years after completion of a qualification. The rate is also considerably higher than that for Chinese, ASEAN or GCC international graduates.

These results all strongly suggest that many Indian students come to New Zealand to study with the intention of gaining work in New Zealand after they complete their studies.

What do students from ASEAN countries do when they have completed their qualification?

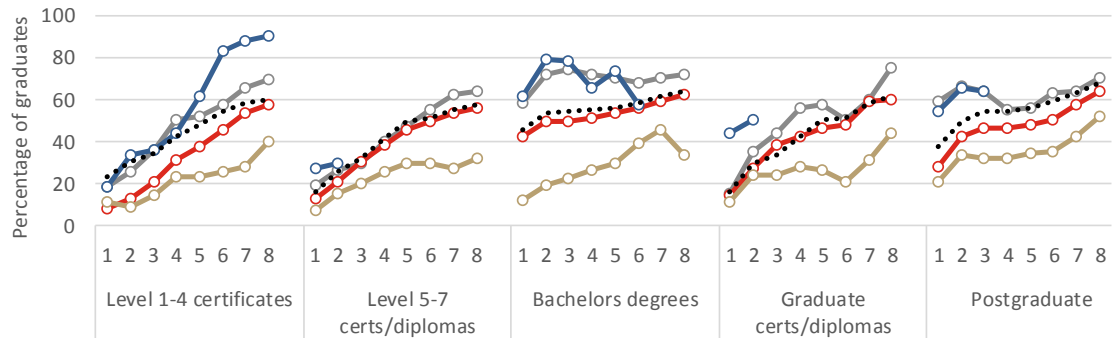
Young, international students from ASEAN countries who gain a bachelors degree in New Zealand are more likely to return overseas after they complete their studies compared to the average for all young, international graduates. The average overseas rate two to eight years after they complete their studies is 71 percent. Rates are also high for those who complete a postgraduate qualification, with more than half overseas in each of the first eight years after study. Overseas rates are lower initially for those who complete a Level 1-4 certificate, Level 5-7 certificate or diploma, or graduate certificate or diploma, but rates are higher in later years. Eight years after study, 64 to 75 percent of young, international ASEAN graduates have returned overseas across all qualification levels.

³² Note that graduates who both continue on to do further study and work in New Zealand after they complete a first qualification are classified in the Further study destination because of the order of precedence rules used to allocate graduates to destinations. See chapter 2 for exact definitions.

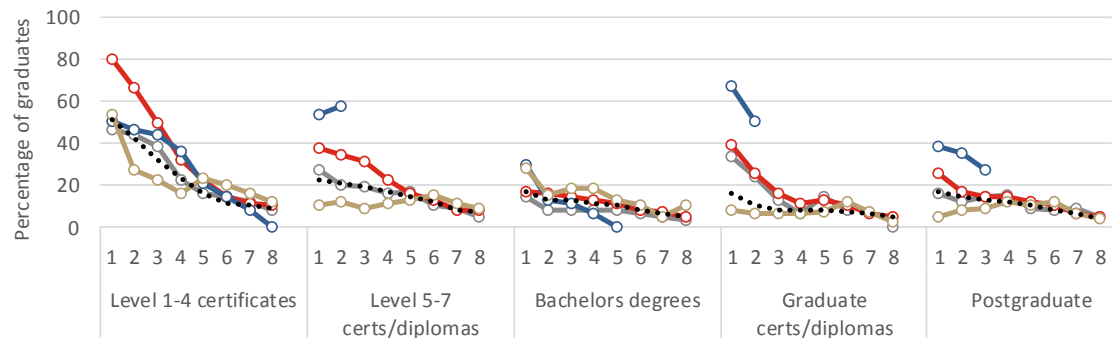
Figure 12

Percentage of young, international graduates from China, India, ASEAN or GCC countries who return overseas, do further study, or work in New Zealand, in the first eight years after qualification completion, by qualification level

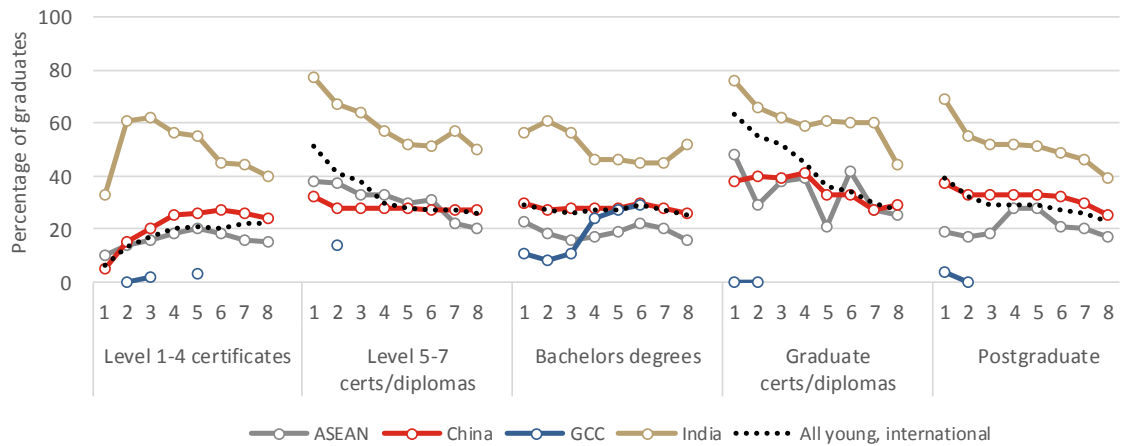
(a) Percentage of graduates who return overseas



(b) Percentage of graduates who do further study



(c) Percentage of graduates who work in New Zealand and do no further study



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

Further study rates for young, international ASEAN graduates are generally very similar to the average for all young, international graduates at most qualification levels and in most years after study. The exceptions are graduates at bachelors-degree level, where further study rates tend to be a few percentage points lower than the average rate, and rates in the first two years after completion of a graduate certificate or diploma, which are 14 to 17 percentage points higher than the average rate and very similar to the rate for Chinese graduates.

The percentage of young, international ASEAN graduates who work in New Zealand after they complete their studies is, for those who complete a bachelors degree or above, around 8 to 9 percentage points lower, on average, than the average for all young, international graduates. Graduates who complete a Level 1-4 certificate have employment rates that are very close to the average for all young, international graduates in the first six years after study, but the rates are lower in the seventh and eighth years after study. Employment rates across all qualification levels vary from 15 to 25 percent, eight years after study, for young, international ASEAN graduates.

What do students from GCC countries do when they have completed their qualification?

The number of students from GCC countries who gain a qualification in New Zealand has been increasing over time. However, the numbers are not yet high enough at most levels and in most years after study to be able to make many robust conclusions about what these graduates do after they complete their studies.

However, it appears that around half of young Level 1-4 certificate graduates from GCC countries continue on to do further study, which is similar to the rate for all young, international graduates. The rate of returning overseas is also similar to the rate for all young, international graduates in the first four years after study; however, the rate is higher in later years after study. Employment rates are very low, with almost no Level 1-4 certificate graduates remaining in New Zealand to work.

Further study rates for young bachelors-degree graduates from GCC countries are also similar to the average rate for all young, international graduates. However, the rate of returning overseas is higher than average and the percentage of graduates who work in New Zealand and do no further study tends to be lower than average, particularly in the first few years after completion of a qualification.

Earnings for Chinese, Indian and ASEAN graduates who work in New Zealand once they have completed their qualification

Median earnings for international graduates who work in New Zealand after they complete a qualification are different for graduates from different countries. There are many reasons for this. For example, the most common fields studied by graduates from different countries vary, and we know from previous research (for example, Ministry of Education, 2016; Park et al, 2013; Scott, 2009) that the field of study in which a graduate has completed their qualification has a big impact on earnings. We also do not know how many hours each graduate has worked, and it may be that some graduates have only worked for part of a year or part-time. This means that even if their hourly rate is the same as that for another graduate, their annual earnings will be lower. Graduates from different countries may also have different levels of English language ability, as likely indicated by the fact that fewer Indian students complete a Level 1-4 certificate in *language and literature*. This may also influence employment opportunities and impact on associated earnings.

Results for young, international graduates from China, India and ASEAN countries are described below, along with some key differences between these graduates. These differences are likely to explain some of the differences in median earnings (see Figure 13).³³

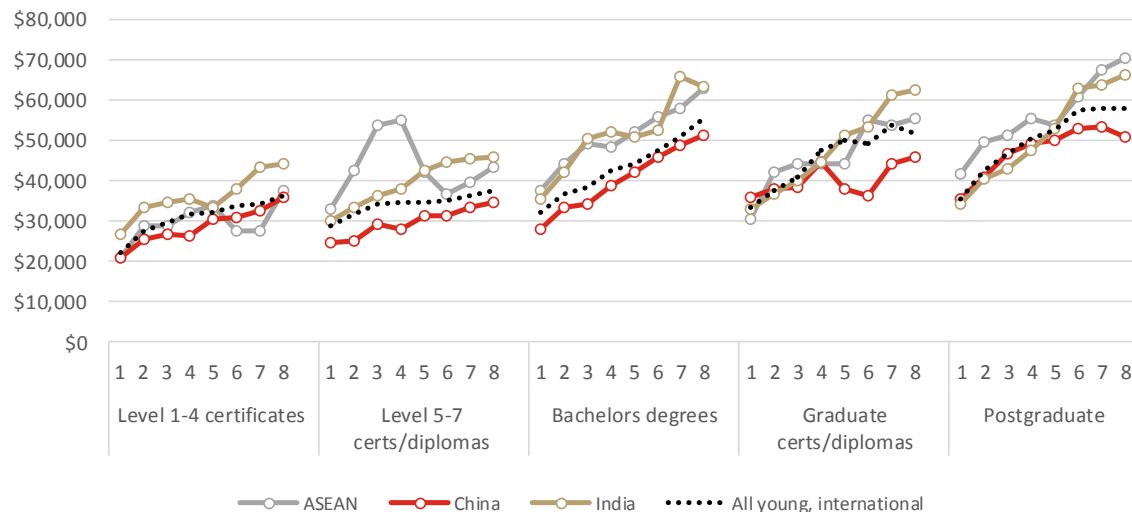
Level 1-4 certificate graduates

Young, international Level 1-4 certificate graduates from India and ASEAN countries tend to have the highest median earnings in the first four years after study, and Indian graduates in all eight years after study. There may be several reasons for this:

- International graduates from India are more likely to have obtained a practical qualification, for example one in *food and hospitality* (22 percent compared to 10 to 11 percent for ASEAN and Chinese graduates), *engineering and related technologies* (21 percent compared to 4 to 5 percent) or *horticulture and viticulture* (12 percent compared to 1 to 2 percent).³⁴
- A higher proportion of young, Indian graduates work in New Zealand and do no further study after they complete a Level 1-4 certificate (one-third in the first year after study compared to 5 to 10 percent). This may suggest that Indian graduates are more likely to look for and obtain full-time work in New Zealand after completing a Level 1-4 certificate.
- The proportion of young, Indian graduates who are male (76 percent) is considerably higher than that for ASEAN and Chinese graduates (54 to 55 percent). This may influence earnings as gender is associated with both field of study and/or resulting occupation, and also may influence the hours worked by a graduate.

Figure 13

Median earnings for young, international graduates from China, India, or ASEAN countries who work in New Zealand, in the first eight years after qualification completion



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

³³ These results, as for those in the remainder of the report, are only for those graduates who study at an SDR-reporting provider. Results for graduates who study at other providers may be similar or very different. Unfortunately unit-record information is not available about these graduates and so we are not able to determine their outcomes.

³⁴ Field of study percentages in this chapter are calculated from Ministry of Education data (unpublished) and are for international graduates of all ages.

Level 5-7 certificate and diploma graduates

Median earnings are considerably higher for young, ASEAN Level 5-7 certificate or diploma graduates in the first four years after qualification completion. In later years after study, earnings are lower, although still higher than the average for all young, international graduates. Median earnings for Indian graduates are lower than those for ASEAN graduates in the first four years after study but higher in later years. They are also consistently higher than those for Chinese graduates. This may be because:

- Many ASEAN graduates (29 percent) complete a qualification in *nursing* and graduates with nursing qualifications tend to be paid well in New Zealand. The proportion of ASEAN graduates who complete a nursing diploma is higher in more recent cohorts, which may explain why median earnings in earlier years after study (which correspond to more recent cohorts) are higher. Around 12 percent of Indian graduates have completed a Level 5-7 certificate or diploma in *health* (8 percent in *nursing*) compared to 1 percent in *health* (0 percent in *nursing*) for Chinese; this is likely to partially explain the higher median earnings for Indian graduates.
- More Indian graduates have completed a Level 5-7 certificate or diploma in *information technology* (26 percent) than Chinese graduates (16 percent). Also, the proportion of male Level 5-7 certificate or diploma graduates is much higher for Indians (85 percent) than Chinese (49 percent). Both of these factors may partly explain the higher annual earnings for Indian graduates compared to Chinese ones.

Bachelors-degree graduates

Median earnings are highest for young, Indian and ASEAN bachelors-degree graduates. This may be because:

- Similarly to Level 5-7 certificate or diploma graduates, the proportion of *nursing* graduates from each country differs. For those with bachelors degrees, considerably more Indian graduates (45 percent) have completed a qualification in *nursing* compared to both ASEAN (1 percent) and Chinese (2 percent) graduates. Also in the *health* field, more ASEAN bachelors-degree graduates (8 percent) have completed qualifications in the well-paid field of *medical studies* compared to Chinese or Indian graduates (both 0 percent).³⁵
- A higher proportion of Chinese graduates (20 percent) have completed a qualification in *banking, finance and related fields* compared to ASEAN (5 percent) and Indian (2 percent) graduates. This may suggest that graduates who complete a qualification in this field are relatively less well paid, or that they work fewer hours each week or only for part of each year.

Graduates who complete postgraduate qualifications

Median earnings are highest for young, ASEAN graduates who complete a postgraduate qualification, and lowest for Chinese graduates. They are also relatively low in the first four years after study for Indian graduates but relatively high in later years after study, corresponding to later and earlier cohorts of graduates respectively.

³⁵ However, there are some memorandums of understanding in medicine (e.g. between the University of Otago and Brunei) which are now disestablished.

It is more difficult to determine the main drivers of differences in earnings for graduates who complete a qualification at postgraduate level, as 'postgraduate' covers a range of qualifications: bachelors with honours and other one-year postgraduate diplomas and certificates, masters and doctoral graduates. The relative proportions of graduates who have completed qualifications at each level vary both by country and over time. The most common fields of study also vary by qualification level and time. However, it is likely that part of the reason for the higher earnings for ASEAN graduates is that the proportion of PhD graduates is higher for ASEAN graduates who complete a postgraduate qualification than it is for graduates from India and China.

The increase in recent years in the numbers of international students who study at postgraduate level means that numbers should be sufficient in the future to look more closely at earnings for graduates by individual postgraduate qualification level and by field of study. This will help to resolve the main drivers of differences in earnings between graduates from different countries.

Earnings for students from GCC countries who complete a qualification

Most students from GCC countries who complete a qualification in New Zealand do not stay on to work in New Zealand. This means that in most cases, the numbers of graduates working in New Zealand are below those required to meet Statistics New Zealand's confidentiality rules and so the results need to be suppressed for privacy reasons and are not reported here.

Summary

In 2015, Chinese and Indian students made up 59 percent of all international enrolments at tertiary education level in New Zealand. And, in the most recent cohorts of graduates analysed in this study (2010 and 2011), Chinese, Indian, ASEAN and GCC graduates comprised 57 percent of all young, international Level 1-4 certificate completions, approximately three-quarters of Level 5-7 certificate and diploma, bachelors-degree and postgraduate completions (78 percent, 76 percent and 75 percent respectively), and 87 percent of graduate certificate and diploma completions.

The characteristics of international students from different countries vary considerably in terms of the qualification levels they study at, their preferred fields of study, and the proportions of male and female students. Correspondingly, outcomes for international students who come from different countries vary. For example, Indian graduates are less likely to return overseas when they have completed their studies, and are more likely to stay in New Zealand and work, whereas graduates from ASEAN and GCC countries are more likely to return overseas. Earnings for those who stay in New Zealand to work also tend to differ for those who come from different countries, but it is likely that the differences in study patterns explain many of these differences.

Appendix A DATA AND DEFINITIONS

This report looks at outcomes for international graduates over the first eight years after they complete a qualification. Results are presented by qualification level and field of study. Technical details of the data used in this report and the associated definitions are provided below.

A.1 Integrated Data Infrastructure dataset

The Integrated Data Infrastructure (IDI) dataset was used to obtain the results in this report. This longitudinal dataset is managed by Statistics New Zealand and links each individual's tertiary education enrolment and completions data to data from a number of datasets including:

- Earnings (from Inland Revenue)
- Welfare benefits (from the Ministry of Social Development)
- Border crossings (from Immigration New Zealand).

The tertiary education data in the IDI has been sourced from the Single Data Return (SDR) provided to the Ministry of Education by providers. The immigration data is derived from passenger manifestos. The earnings data used here is derived from IDI tax data collected by Inland Revenue. Welfare benefits data is derived from data used by the Ministry of Social Development to administer the benefits system.

A.2 Definition of 'international'

The term 'international' is defined as 'not domestic'. We use the SDR definition for 'domestic', which is based on a student's country of citizenship and residency status, and whether the qualification they are doing is based in New Zealand or not. This definition classifies Doctor of Philosophy (PhD) students who do not have New Zealand citizenship or residency as international students rather than domestic, even though international PhD students pay domestic fees to study in New Zealand.

A.3 Graduate destinations

The graduate destinations used in this report are:

- Overseas
- Further study
- Receiving a benefit
- Employment
- Unknown/Other.

Within each leaving cohort, graduates are assigned to only a single destination per year after study, using the business rules below. These rules take account of 'substantiveness' – how long a graduate is pursuing an activity – and a 'predominance' test – what is the 'main' activity. Where a graduate meets the criteria for more than one destination, the destination is determined using the order of precedence: overseas, further study, receiving a benefit, employment, unknown/other.

Destinations are defined as follows:

- *Overseas* – nine months or more overseas overall in a year.
- *Further study* – graduates who are not classified in the Overseas category and do any tertiary study in a calendar year.
- *Receiving a benefit* – graduates who are not classified in either the Overseas or Further study categories and who are on a benefit for at least four months in a tax year and are not in employment for longer than this.
- *Employment* – graduates who are not classified in any of the categories above and who receive wages and salary, paid parental leave and/or accident compensation for at least four months or more in a tax year and/or receive any self-employment income.
- *Other/Unknown* – graduates who are involved in more than one activity during the year and who do not meet the criteria for any of the four destinations above, or for whom no matching data can be found in the IDI.

A.4 Completions

The analyses and results in this report relate only to students who have completed a qualification. Enrolments and completions must match by qualification code and level, and provider. Graduates may be included in the results more than once if they have completed a qualification in more than one field of study, or have completed more than one qualification if these are completed at different levels and/or in different years.

The year in which a qualification is completed is assumed to be the last year of enrolment in that qualification. This is because sometimes completions are not recorded in the year that a student actually completes their qualification, for example because of administrative delays or other peculiarities. Completions are excluded in cases where the recorded completion is shown as having occurred three or more years before the last year of enrolment in that qualification.

A.5 Number of years post study

The number of years post study are defined using tax years for earnings and all destinations except further study, where calendar years are used. The results for two cohorts of graduates are aggregated together for each year post study, in order to increase the number of graduates. This means that we are able to publish results for more qualification-level-by-field-of-study combinations as more results meet Statistics New Zealand's confidentiality requirements. Increased graduate numbers also improve the statistical quality and robustness of the results.

Cohorts are chosen so that their post-study employment outcomes are always compared in the same economic climate: the 2012 and 2013 tax years. For instance, one year post-study outcomes are calculated for graduates who completed in 2010 or 2011, and five year post-study outcomes are calculated for graduates who completed in 2006 or 2007. Table 5 shows how the aggregated cohorts align with tax and calendar years for each post-study year.

Table A1

Alignment of cohorts with tax years

Cohorts	Years post study	Tax years
2010 and 2011	1	2012 and 2013
2009 and 2010	2	2012 and 2013
2008 and 2009	3	2012 and 2013
2007 and 2008	4	2012 and 2013
2006 and 2007	5	2012 and 2013
2005 and 2006	6	2012 and 2013
2004 and 2005	7	2012 and 2013
2003 and 2004	8	2012 and 2013

A.6 Earnings

Earnings are only presented for graduates who are classified in the 'Employment' destination. Earnings have also been scaled using the Labour Cost Index to normalise differences between the 2012 and 2013 tax years and are presented in 2013 dollars.

A.7 Young graduates and qualification level

We report outcomes both for all ages and for only 'young' graduates. For each qualification level, we set an age range that means we are looking only at those who start that qualification and move to completion before undertaking substantial time in the workforce. We restrict the analysis to young graduates because the aim of the analysis is to support the decision-making of young people, and we can also compare these results to already published ones for young, domestic students. If we mixed the outcomes of young graduates with the outcomes for people who undertake tertiary study after substantial work experience, we would be unable to separate the effects of the qualification from the effects of the work experience.

Young graduates are defined as:

- 21 years or under for Level 1 to 4 certificates
- 23 years or under for Level 5 to 7 diplomas and certificates
- 24 years or under for three-year bachelors degrees, with each year of additional study requirement adding a year to the age cut-off for longer qualifications³⁶
- 26 years or under for bachelors with honours and other one-year postgraduate diplomas and certificates
- 27 years or under for masters degrees
- 29 years or under for doctoral degrees.

The age of a graduate is based on their age as at 1 July of their last year of enrolment in a qualification.

³⁶ For example, 25 years and under for law degrees, which are four years long, 26 years and under for architecture degrees which are five years long, and 27 years and under for medical degrees as these are six years long. Qualifications with non-whole numbers of years are rounded to the closest number of whole years (rounding upwards if the length is x and a half years).

A.8 Field of study

The New Zealand Standard Classification of Education (NZSCED)³⁷ is used to classify people's study into various fields of study. NZSCED has three levels of classification – broad field of study, narrow field and detailed field. The field or fields a graduate has pursued are determined by looking at the courses the graduate took while studying and working out what are the predominant fields of study taken. This method uses level of study, field of study, year of study, and study load of each course that a graduate has studied in their last three years of study, usually of the same level as the final year of study or higher, to determine what best constitutes their main field(s) of study – or specialisation(s). It is important to note that this method may give different results from simply using the classification given by the provider.

One consequence of this is that less obvious qualifications may sometimes be categorised under a particular field of study for some graduates. For example, as expected, graduates who complete a Bachelor of Veterinary Science are classified under veterinary studies at bachelors-degree level. However, some Bachelor of Agricultural Science and Bachelor of Science graduates are also included in this field, as are Bachelor of Applied Animal Technology graduates. Similarly, under dental studies, at bachelors-degree level we find both Bachelor of Dental Surgery graduates and Bachelor of Health Science (Oral Health) graduates.

Most of our analysis is by broad field of study because if we divide our population of graduates too finely, we end up having to suppress more data because it breaches the Statistics New Zealand confidentiality limits. The variation induced from rounding of the underlying graduate counts, as required for confidentiality reasons (see below), also makes the reported percentages for each destination more variable when the number of graduates is smaller.

People graduating in more than one field of study are counted in each of the fields of study. The number of students in each narrow field of study may not sum to the broad field of study total. This is because students can be enrolled in multiple narrow fields of study.

Field of study is broken down into 12 broad fields using the New Zealand Standard Classification of Education:

- Natural and physical sciences
- Information technology
- Engineering and related technologies
- Architecture and building
- Agriculture, environmental and related studies
- Health
- Education
- Management and commerce
- Society and culture
- Creative arts
- Food, hospitality and personal services
- Mixed field programmes.

Each broad field of study contains a spread of types of qualifications. For instance, the broad field of *health* covers *medicine*, *veterinary science*, *dentistry*, *nursing* and qualifications for low-

³⁷ For the structure of NZSCED, refer to:
www.educationcounts.govt.nz/data-services/collecting-information/code_sets/new_zealand_standard_classification_of_education_nzsced

level health workers such as nurse-aides. *Natural and physical sciences* covers *mathematical sciences, physics and astronomy, chemical sciences, earth sciences and biological sciences*.

Data is also published at NZSCED narrow field, where numbers permit. This allows, for instance, separation of *law* from *economics and econometrics* and *sport and recreation*, and separation of *medical studies* from *nursing*.

A.9 Confidentiality of data

The results published in this report and in the tables in the corresponding spreadsheets all comply with Statistics New Zealand's confidentiality requirements. These include a requirement to use graduated random rounding for all total counts, and random rounding to base 3 for counts which underlie percentages. Additionally, when publishing employment rates or earnings, the corresponding provider, enterprise and graduate counts for that qualification-level-by-field-of-study combination must be higher than prescribed limits. Blanks may also be suppressed in line with Statistics New Zealand's confidentiality rules. Results from a single provider are suppressed in all cases.

Random rounding may result in a total not agreeing with the sum of individual items shown in a table. It also means that the published percentage of graduates in a particular destination may differ from the true percentage. This is important to take into account when comparing percentages as some differences may simply be owing to this factor and not to an underlying trend.

Appendix B RETURN RATES FOR INTERNATIONAL STUDENTS

In this report, we focus on return overseas rates for international students who complete a qualification at a government-funded provider in New Zealand. We found that five years after study, 49 percent of these graduates of all ages had returned overseas, and 59 percent eight years after study (see chapter 2). The corresponding rates for young graduates are 53 percent and 61 percent, five and eight years after study respectively.

However, these groups are only subsets of all international students. The return overseas rates for these subgroups need to be seen in the light of return rates for all international students.

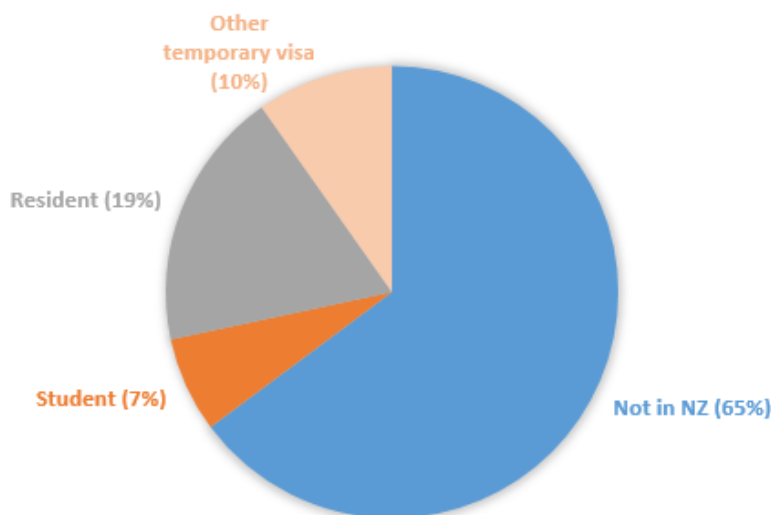
B.1 Return rates after a graduate has obtained a first student visa

The Ministry of Business, Innovation and Employment (MBIE) monitors how many international students gain residency either during or following their studies in New Zealand. Their population of interest is often all students who are issued a student visa. From an analysis of this data, they report that ‘... one in five international students gained residence’ within five years of being issued their first student visa (MBIE, 2013).³⁸ Similar results are found for all full fee-paying international students with one in six of these students gaining residence within five years (MBIE, 2014, 2015).³⁹

The most recent data shows that 19 percent of all students with a first student visa in the 2010/2011 financial year have gained residence within five years of this (see Figure B1). A further 17 percent of international students are still in New Zealand five years after their first student visa: 7 percent are still on student visas and 10 percent are on other temporary visas. Sixty-five percent of international students are no longer in New Zealand five years after their first student visa.

Figure B1

Visa flows for migrants with a student visa as their initial visa in 2010/11, five years after their first student visa.



Source: Ministry of Business, Innovation and Employment (unpublished data).

³⁸ This result is for students who had a first student visa in 2003/04 to 2008/09, where each period is based on a 1 July – 30 June financial year.

³⁹ This result is for students who had a first student visa in 2006/2007 to 2009/2010.

Figure B2 shows how return overseas rates for the population of all student visa holders compare to rates for the population of all international students who complete a qualification at a government-funded provider, which is the group of students that we focus on in this report. The figure shows that:

- Return overseas rates five years after their first student visa (FSV), for those who have a FSV in 2009, are very similar at 66 percent to the MBIE figure of 65 percent for FSV holders in the 2010/2011 July-June financial year.
- Students who are 16 years or younger when they get their FSV (shown as 'school students' in Figure B2) are less likely to be overseas five years after their FSV with 61 percent overseas compared to 69 percent for those who are 17 years or older when they obtain their FSV.
- Students who are 17 years or older and who study at a government-funded provider in the same or following year to their FSV are less likely to be overseas five years after their FSV with 66 percent overseas compared to 72 percent for those who do not study at a government-funded provider. Students who come to New Zealand to study short-term English language courses at non-government funded providers will be part of the reason for this difference in return rates.
- Students who are 17 years or older and who study at a government-funded provider and complete a qualification within the fifth full year after they obtain their FSV⁴⁰ are much less likely to be overseas five years after their FSV, with only 51 percent overseas compared to 87 percent for those who do not complete a qualification within the five years. Part of the reason for this difference is that not all international students plan to complete a qualification when they come to study in New Zealand. For example, they may only be interested in completing a particular course or may be an exchange student and only studying here for a short period of time.
- Return overseas rates for younger tertiary students, those who are 17-22 years old when they obtain their FSV, are similar to those for older tertiary students overall and for those who do not study at government-funded providers (see Figure B3). However, there are differences in return overseas rates for those who study at government-funded providers with younger tertiary students more likely to return overseas if they do not complete a qualification (90 percent compared to 82 percent) but slightly less likely to if they do complete a qualification (50 percent compared to 53 percent).

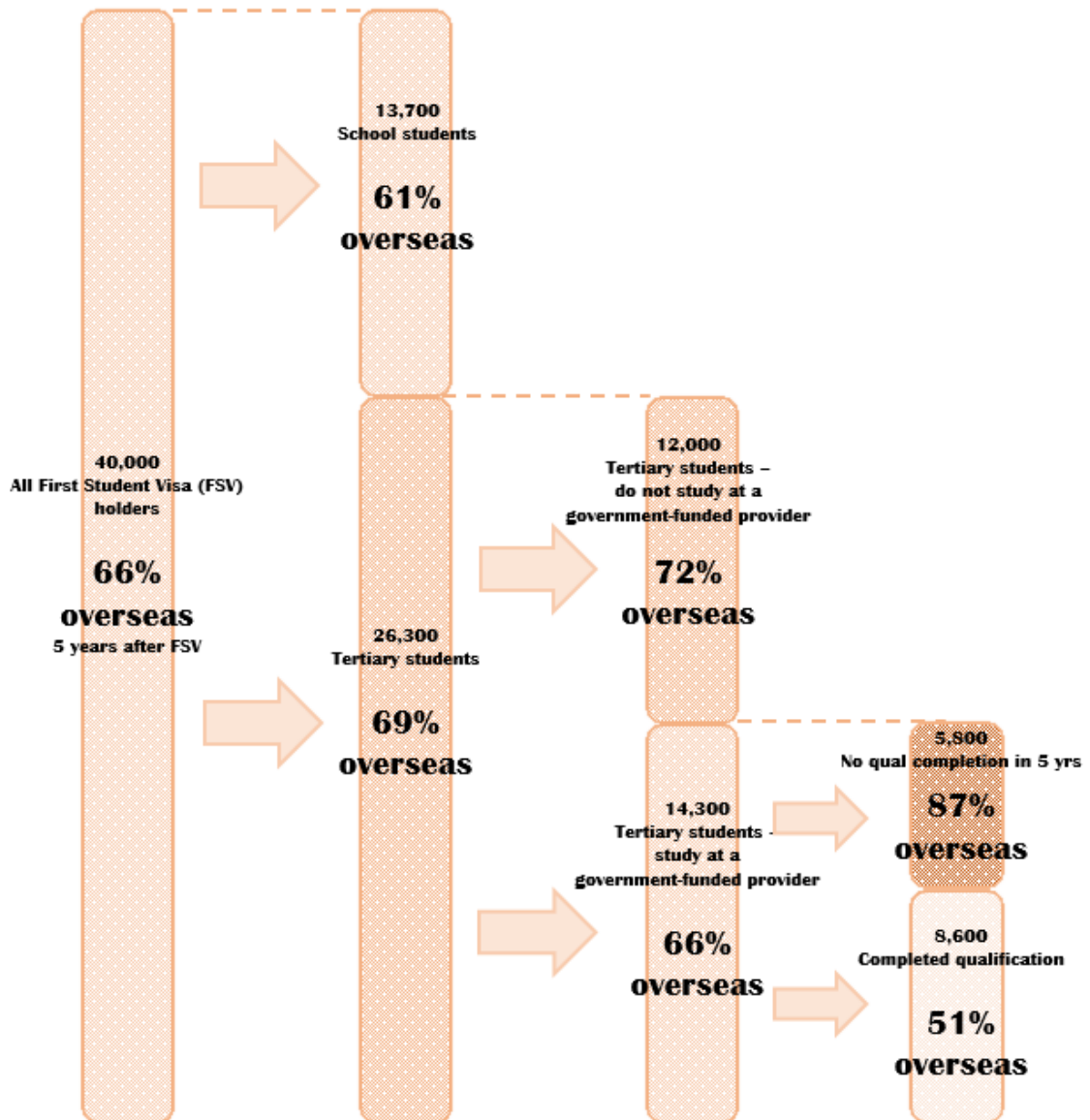
B.2 Return rates after a graduate has obtained their last student visa or completed a qualification

The results discussed above look at what students are doing five years after their first student visa. Another approach is to look at what students do after they either finish their studies and/or complete a qualification. MBIE publishes statistics on the proportion of full fee-paying students who gain residence within three years of their last student visa (MBIE 2014, 2015), and in the body of this report we focus on overseas return rates for students after they have completed a qualification.

⁴⁰ For students with a FSV in 2009, this means that they have completed a qualification before 2014.

Figure B2

Overseas rates for different groups of international students, five years after their first student visa (FSV), for those who have a FSV in 2009

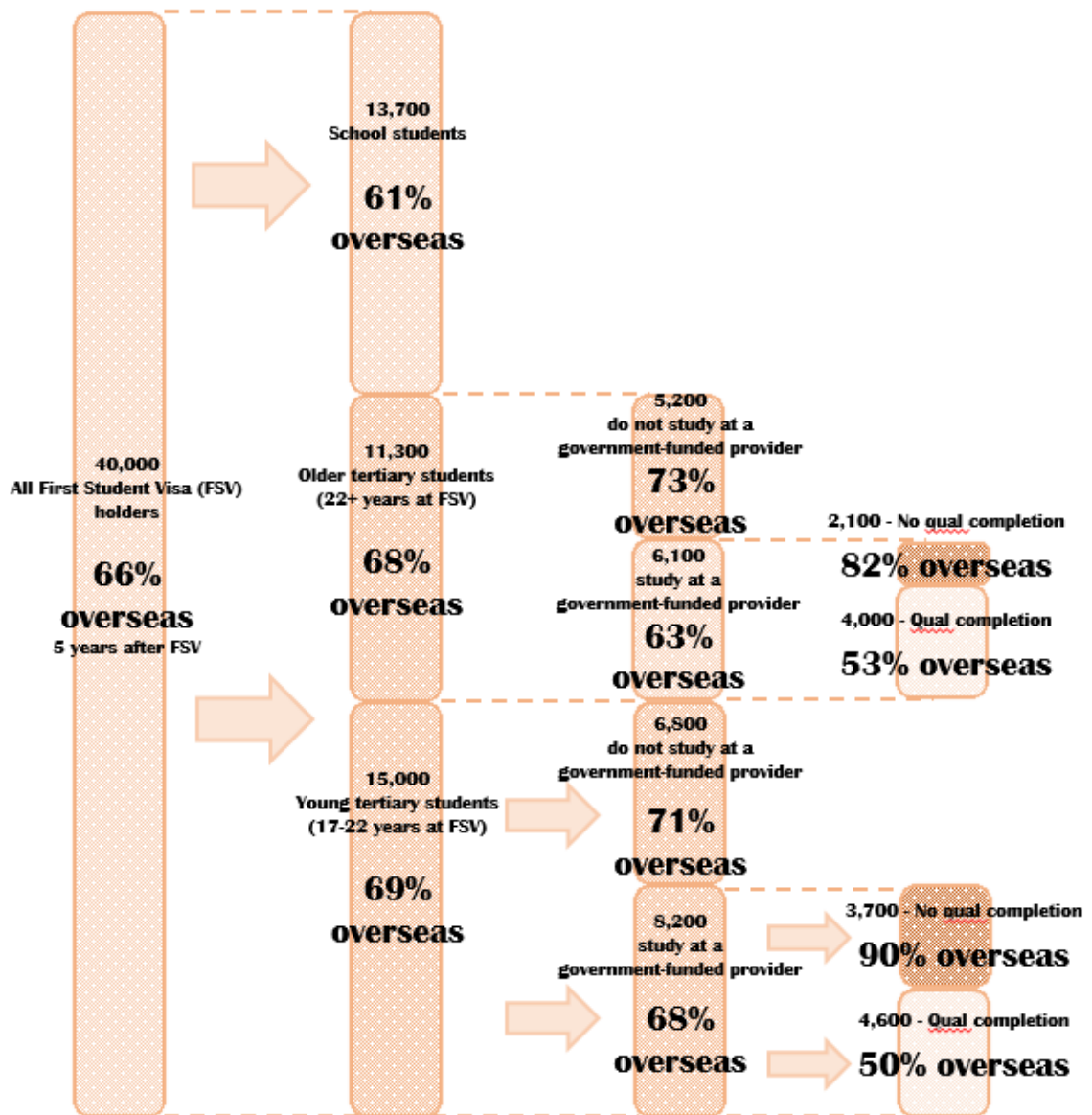


Notes: The percentages of students overseas are based on whether students are overseas exactly five years after their first student visa. 'School' students are defined as any student who is 16 years or younger at the date of their first student visa, and 'tertiary' students as those who are 17 years or older. Only tertiary students who study at a government-funded provider in the same or following year as their first student visa are included in the 'study at a government-funded provider' group. Tertiary students studying at a government-funded provider are included in the 'completed qualification' group if they complete a qualification within the fifth full year after their first student visa i.e. in 2014 or before.

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

Figure B3

Overseas rates for different groups of international students including younger and older tertiary students, five years after their first student visa (FSV), for those who have a FSV in 2009



Notes: The percentages of students overseas are based on whether students are overseas exactly five years after their first student visa. 'School' students are regarded as any student who is 16 years or younger at the date of their first student visa. Older tertiary students are 22 years or older when they obtain their FSV and young tertiary students are 17 to 22 years in age when they obtain their FSV. Only tertiary students who study at a government-funded provider in the same or following year as their first student visa are included in the 'study at a government-funded provider' group. Tertiary students studying at a government-funded provider are included in the 'completed qualification' group if they complete a qualification within the fifth full year after their first student visa i.e. in 2014 or before.

Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

Table B1 shows the percentage of all full fee-paying students who gain residence within three years of their last student visa, the maximum percentage of these students who are thus overseas, and the percentage of graduates who are overseas three years after they complete a qualification. Although we cannot compare the latter two figures directly, as we know that some international students stay in New Zealand after their studies for reasons other than gaining residence, and also the populations of students differ (for example, the full fee-paying student group includes school students as well as tertiary, and the graduate population includes those who continue on to do further study), these figures support the finding above that students who complete a qualification are less likely to return overseas.

Table B1

Percentage of international students who gain residence or are overseas 3 years after their last student visa or after completion of a qualification

Year	Percentage full fee-paying students who gain residence ¹	Maximum percentage of full fee-paying students who return overseas ²	Percentage graduates who are overseas 3 years after qualification completion ³
2006	34%	66%	40%
2007	32%	68%	40%
2008	27%	73%	41%
2009	26%	74%	40%

Notes: ¹ These figures show the percentage of full fee-paying students who gain residence within three years of their last student visa (MBIE, 2015). Both school and tertiary students are included in these figures. ² These figures are calculated as 100 percent minus the percentage of students who gain residence. They will be an overestimate of the percentage of students who return overseas as some international students will still be in New Zealand for reasons other than gaining residence (for example, they may obtain a work visa). ³ This is the percentage of tertiary graduates who are overseas for 9 months or more in the third year after they complete their studies. Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

It is not possible to directly compare overseas rates for students who complete a qualification at a government-funded provider within five years of their FSV (as discussed in section B1 and shown in Figures B2 and B3) to return rates after a student has completed a qualification - which are the rates used in the body of this report. This is because the length of time that a student takes to complete a qualification varies and depends on factors such as the level of the qualification. Also, the students who complete a qualification in any one year will comprise several different starting cohorts. Another difference is that the graduate population includes students who have never had a student visa and the rates of return for these students are lower than for other graduates.⁴¹

B.3 Have overseas rates changed over time for graduates?

Overseas rates for individual cohorts of graduates who have completed a qualification at a government-funded provider are shown in Figures B4 and B5, for young graduates and graduates of all ages respectively. Patterns over time vary by qualification level and include:

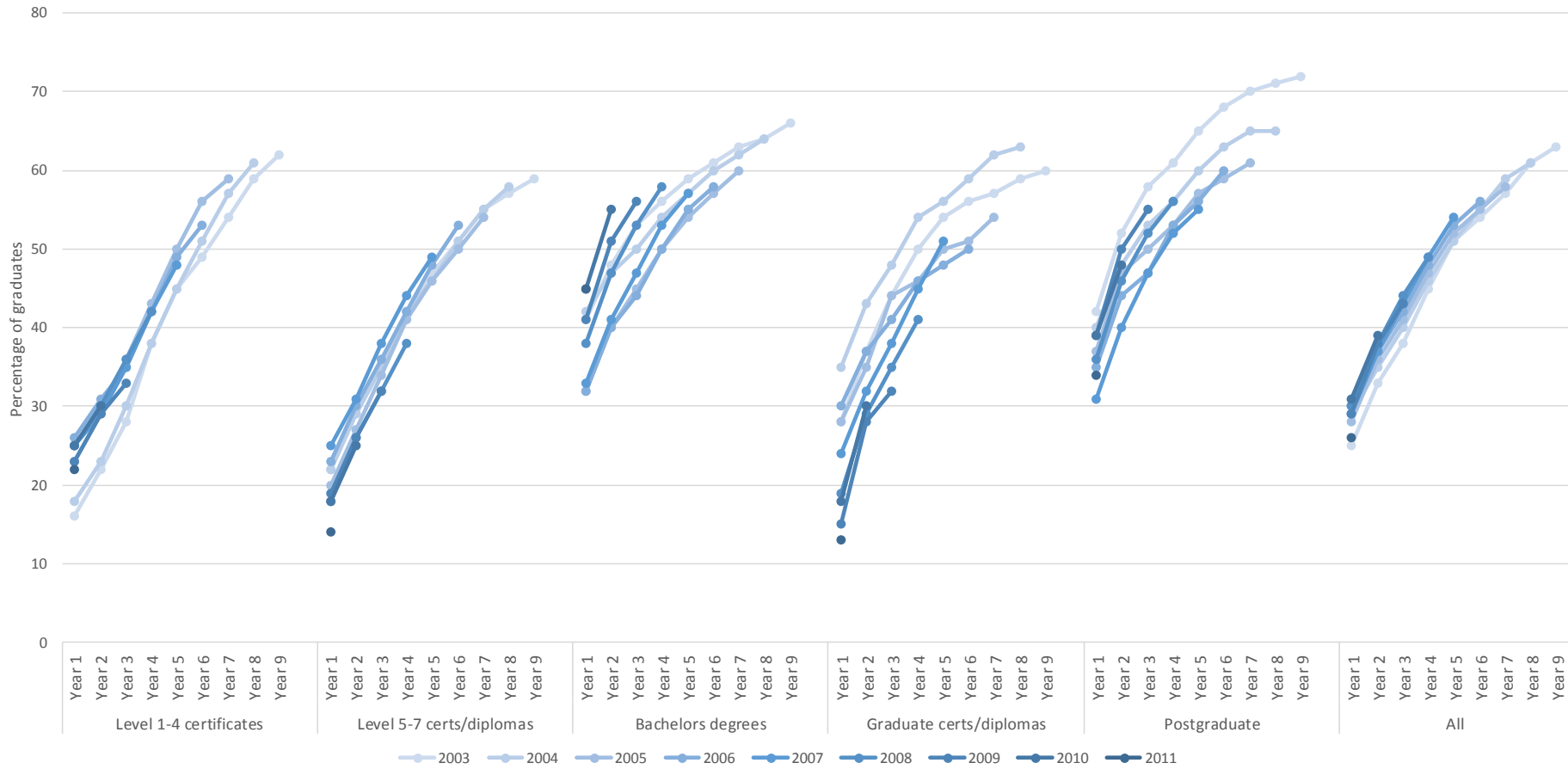
- Overseas rates over time are lower for young graduates who completed their Level 1-4 certificate in 2003 or 2004 compared to later cohorts. Conversely, overseas rates are generally higher for those who completed a graduate certificate or diploma, or postgraduate qualification, in 2003 or 2004 compared to later cohorts, for young graduates and graduates of all ages.

⁴¹ On average, 7 percent of young, international graduates who completed a qualification at a government-funded provider between 2006 to 2009 have never had a student visa. The corresponding figure for graduates of all ages is 12 percent.

- For graduates who completed a bachelors degree in 2005 to 2011, overseas rates are generally higher for later cohorts, for both young graduates and those of all ages.
- For graduates who completed a graduate certificate or diploma in 2003 to 2011, overseas rates are generally lower for later cohorts, for both young graduates and those of all ages.

Figure B4

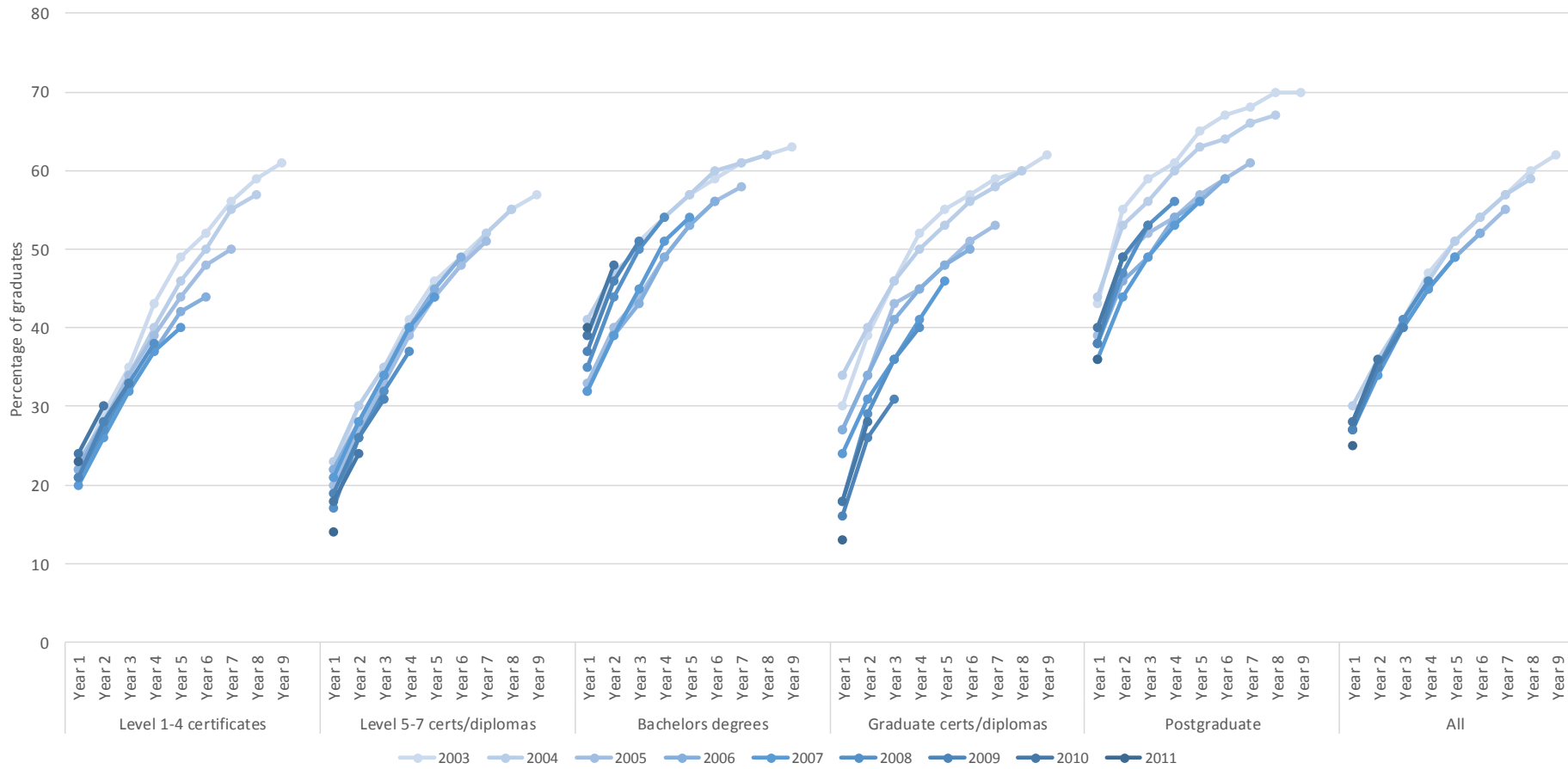
Overseas rates for individual cohorts of young graduates, 2003 – 2010.



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

Figure B5

Overseas rates for individual cohorts of graduates of all ages, 2003 – 2010.

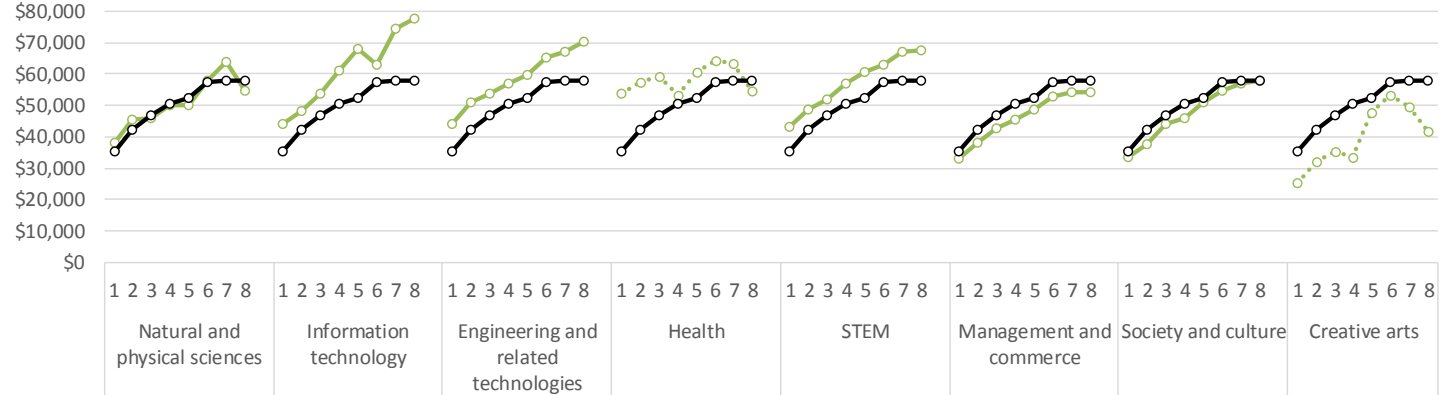


Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

Appendix C GRAPHS OF WHAT INTERNATIONAL STUDENTS DO BY QUALIFICATION LEVEL

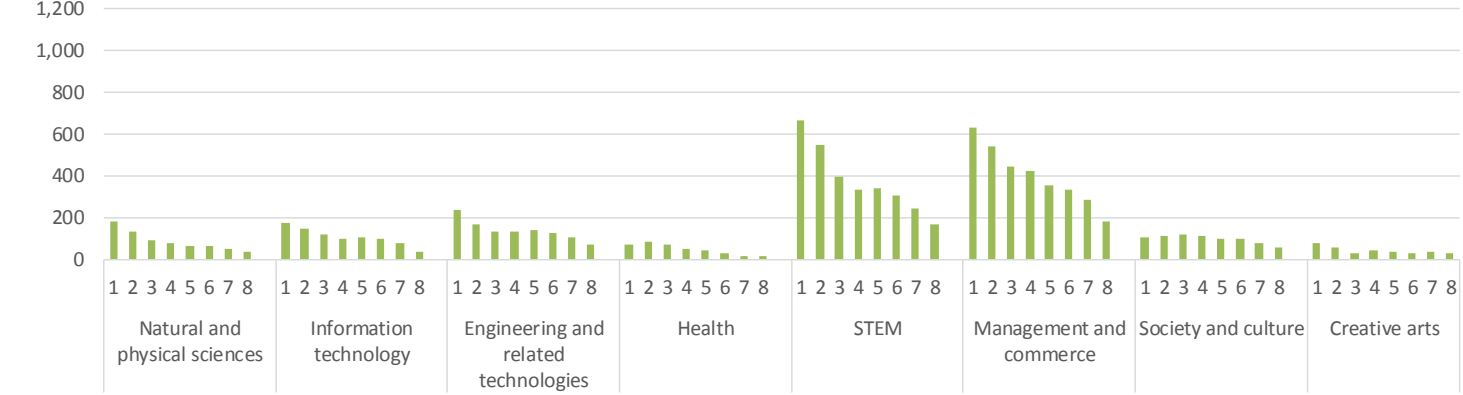
Figure C1
 Median earnings and destinations for young, international graduates who have completed a postgraduate qualification, by field of study, for the first eight years after qualification completion

(a) Median earnings for graduates who are employed in New Zealand and doing no further study

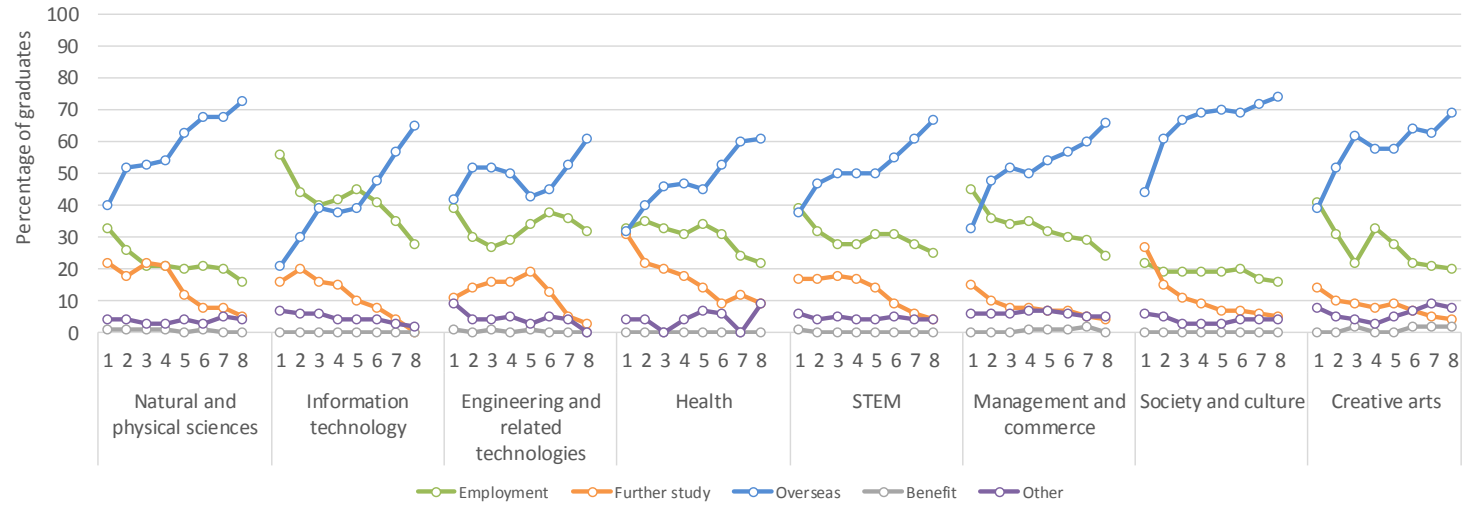


Note: Median earnings for young, international graduates who have completed a postgraduate qualification in any field are shown in black. Dashed lines indicate fewer than 50 employed graduates, on average, each year.

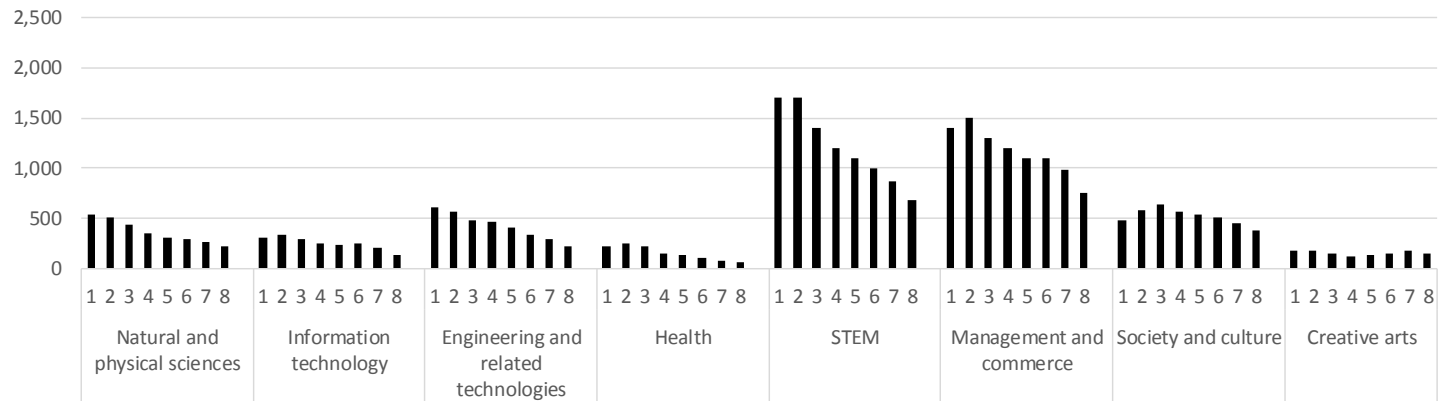
(b) Number of graduates who are employed in New Zealand and doing no further study



(c) Graduate destinations – postgraduate



(d) Total number of graduates

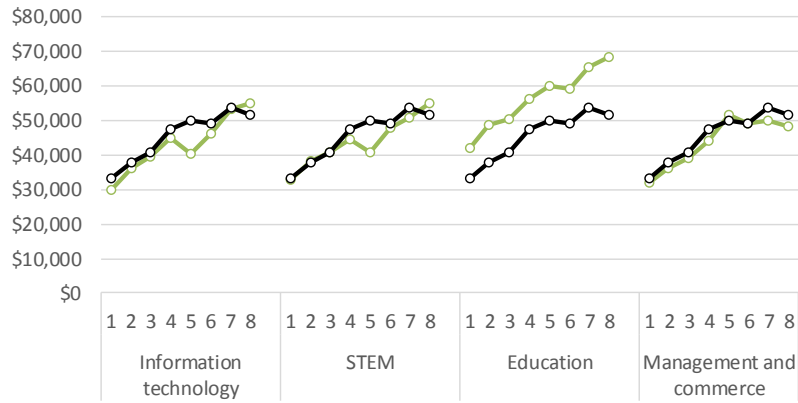


Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

Figure C2

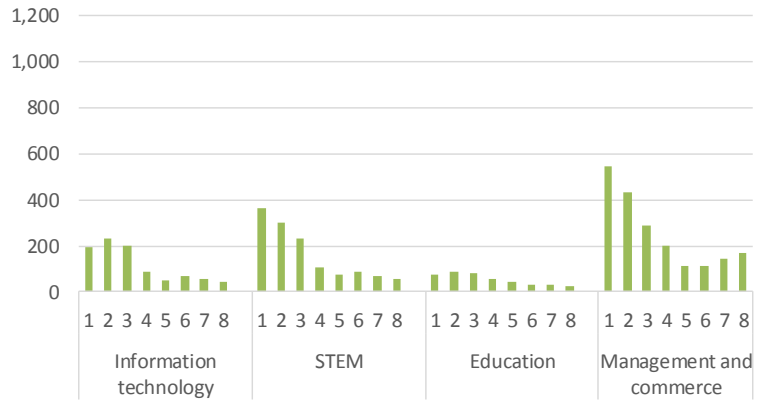
Median earnings and destinations for young, international graduates who have completed a graduate certificate or diploma, by field of study, for the first eight years after qualification completion

(a) Number of graduates who are employed in New Zealand and doing no further study

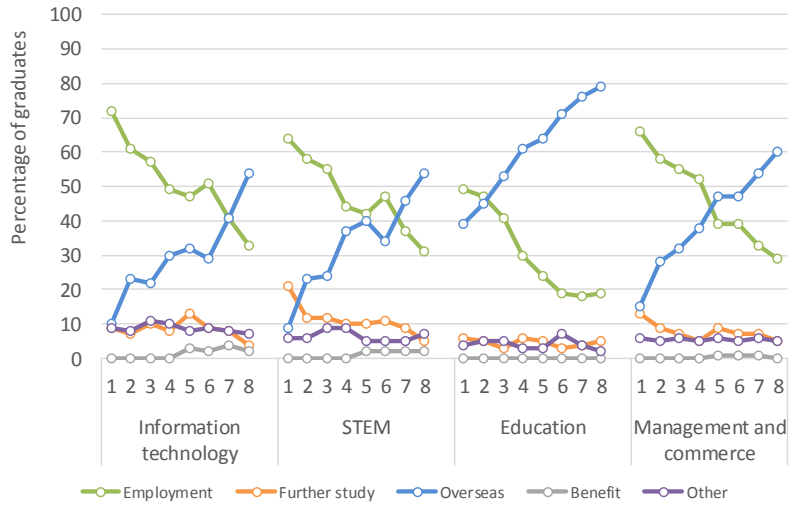


Note: Median earnings for young, international graduate certificate or diploma graduates for all fields of study are shown in black.

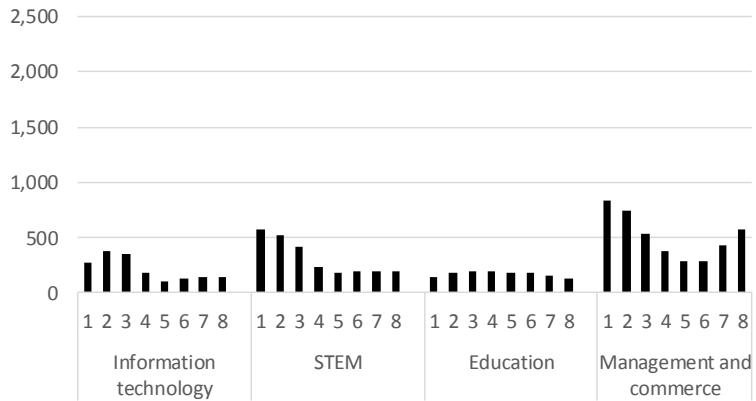
(b) Number of graduates who are employed in New Zealand and doing no further study



(c) Graduate destinations – graduate certificate or diploma



(d) Total number of graduates

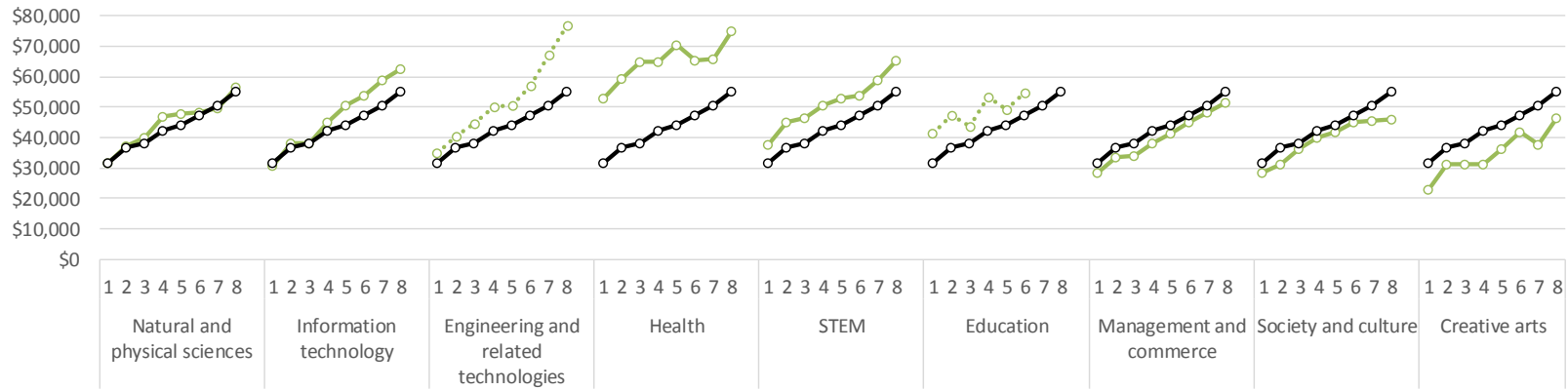


Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

Figure C3

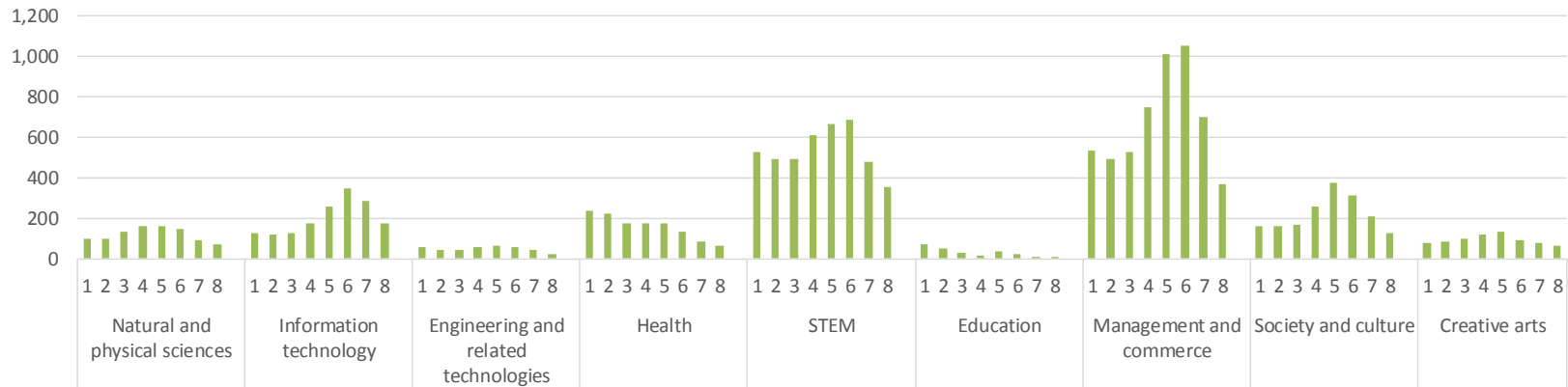
Median earnings and destinations for young, international graduates who have completed a bachelors degree, by field of study, for the first eight years after qualification completion

(a) Median earnings for graduates who are employed in New Zealand and doing no further study

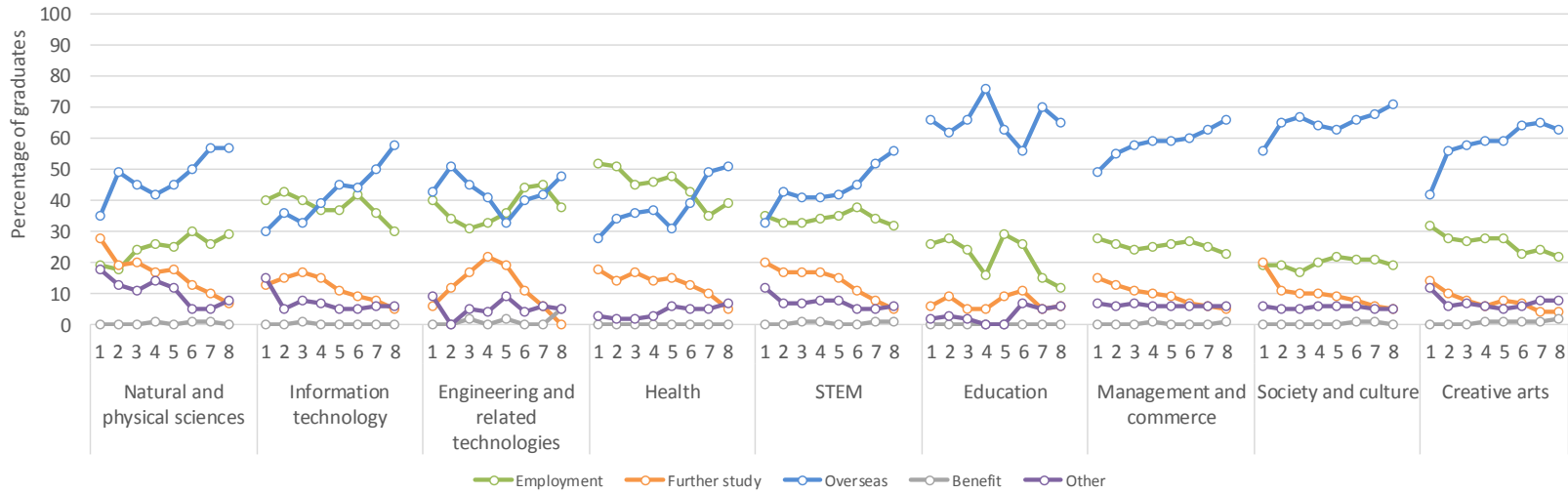


Note: Median earnings for young, international bachelors-degree graduates for all fields of study are shown in black. Dashed lines indicate fewer than 50 employed graduates, on average, each year.

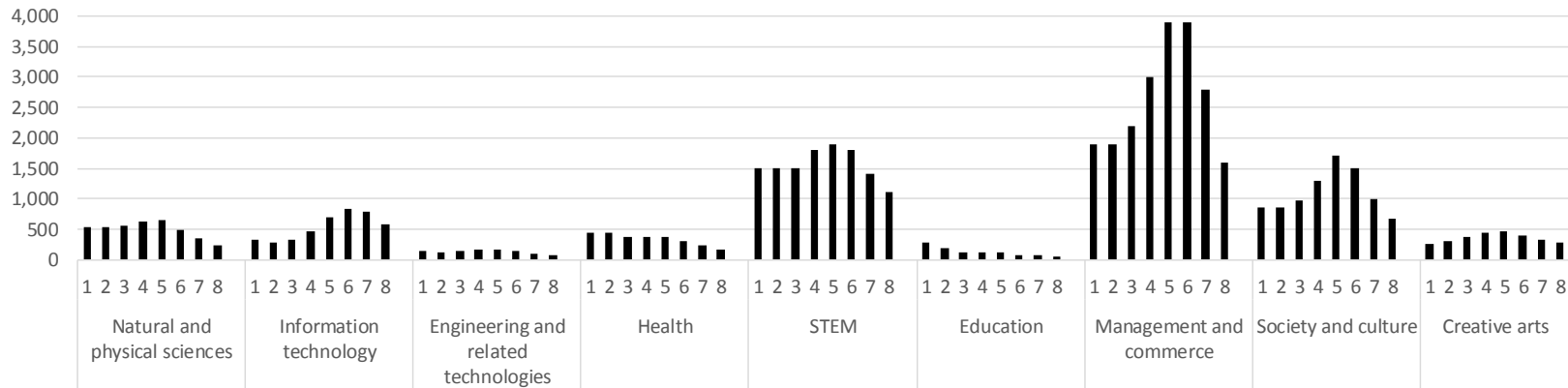
(b) Number of graduates who are employed in New Zealand and doing no further study



(c) Graduate destinations – bachelors degree



(d) Total number of graduates

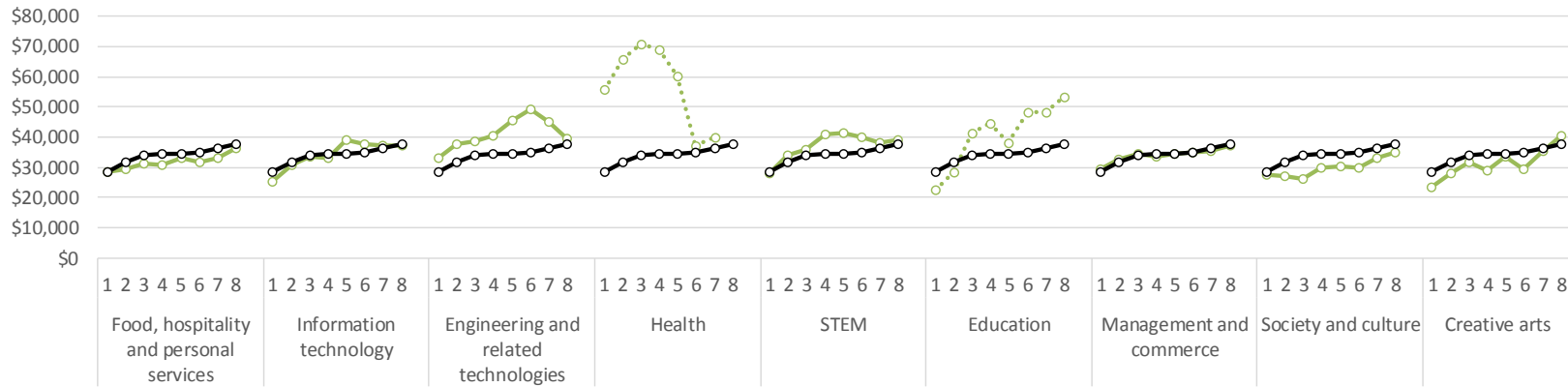


Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

Figure C4

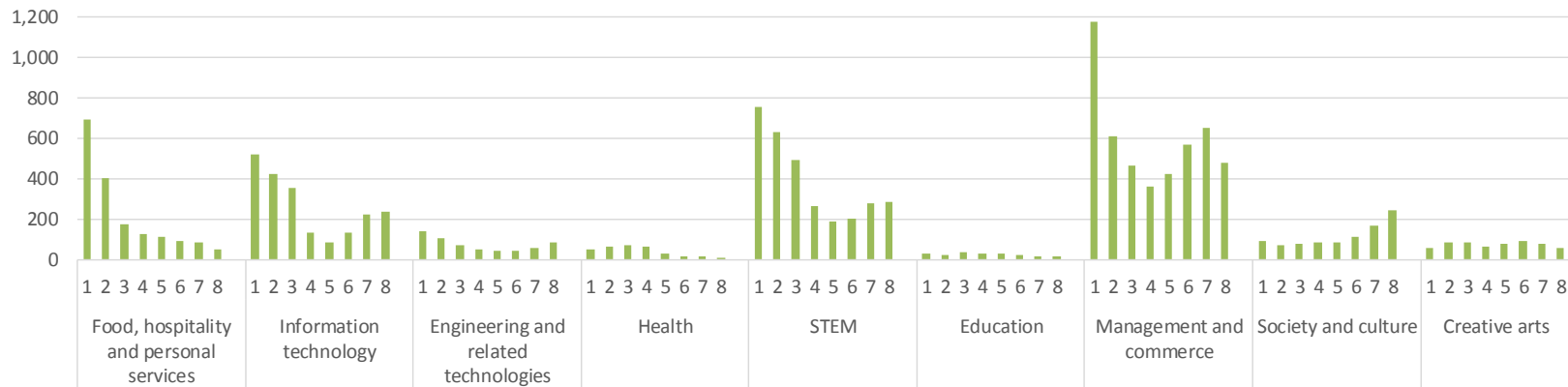
Median earnings and destinations for young, international graduates who have completed a Level 5-7 certificate or diploma, by field of study, for the first eight years after qualification completion

(a) Median earnings for graduates who are employed in New Zealand and doing no further study

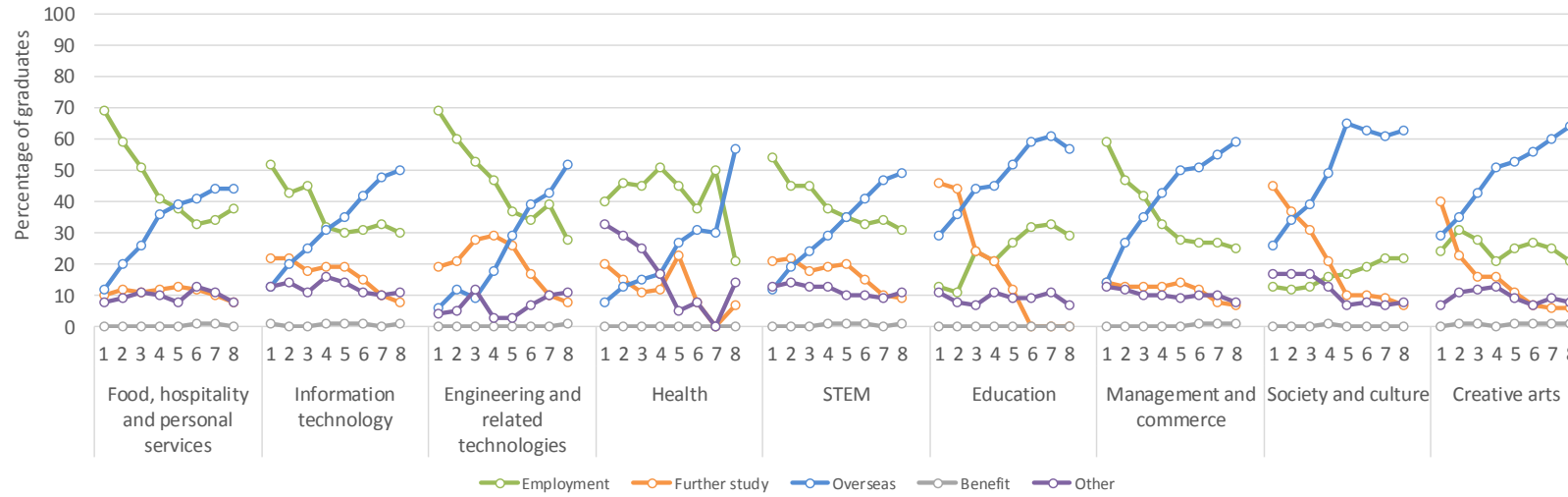


Note: Median earnings for young, international Level 5-7 certificate or diploma graduates for all fields of study are shown in black. Dashed lines indicate fewer than 50 employed graduates, on average, each year

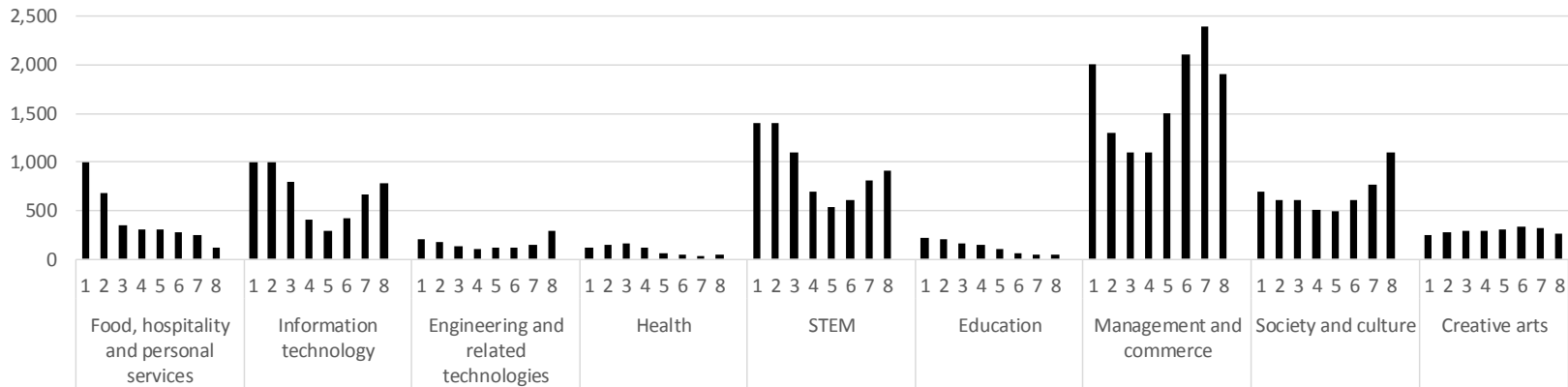
(b) Number of graduates who are employed in New Zealand and doing no further study



(c) Graduate destinations – Level 5-7 certificate or diploma



(d) Total number of graduates

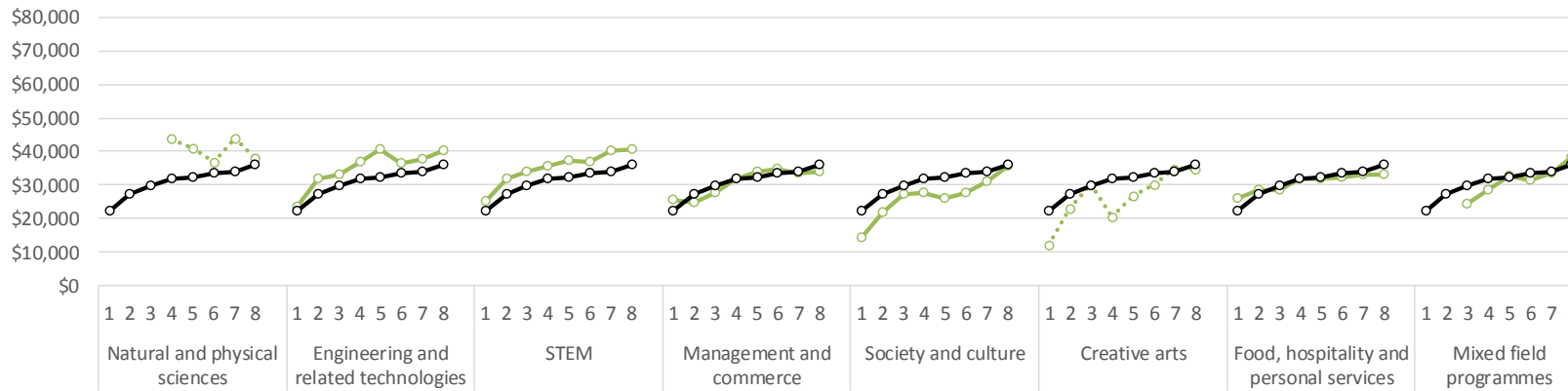


Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

Figure C5

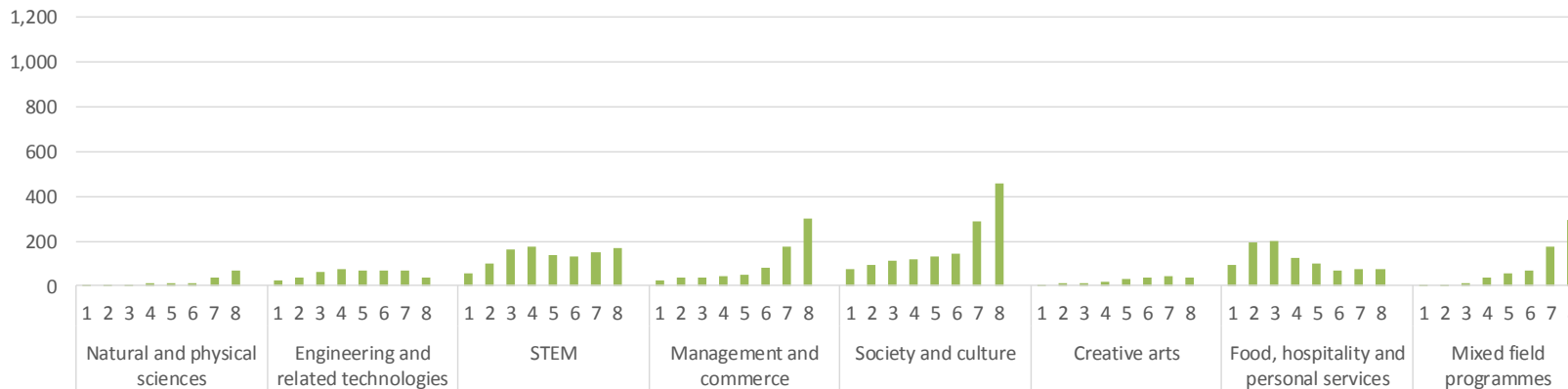
Median earnings and destinations for young, international graduates who have completed a Level 1-4 certificate, by field of study, for the first eight years after qualification completion

(a) Median earnings for graduates who are employed in New Zealand and doing no further study

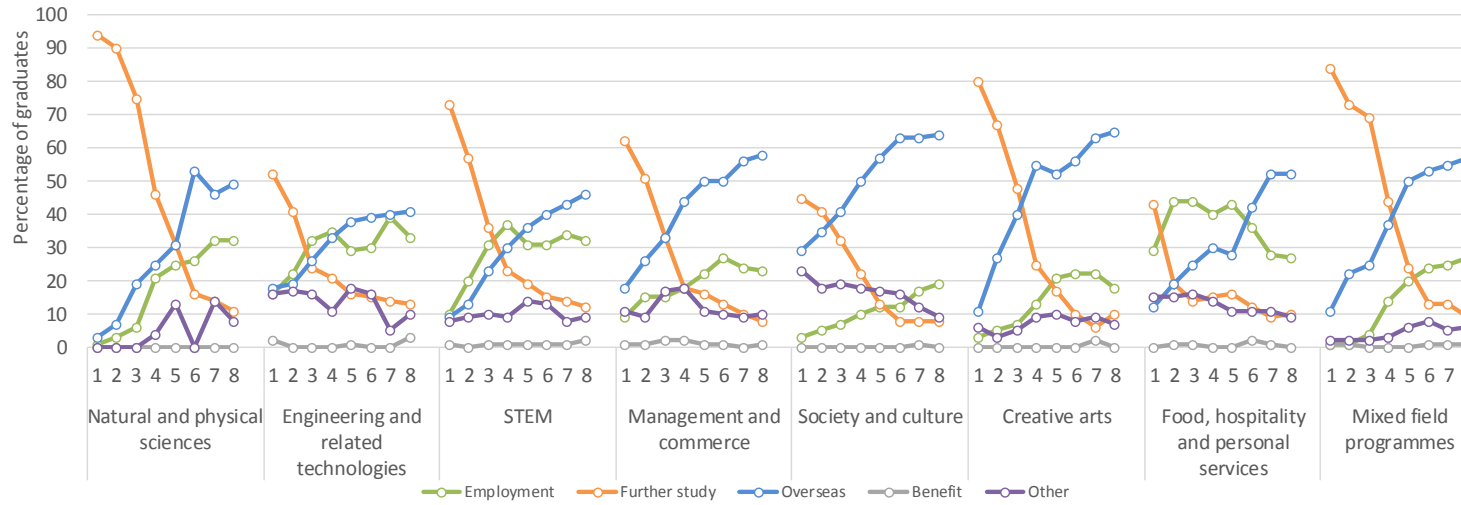


Note: Median earnings for young, international Level 5-7 certificate or diploma graduates for all fields of study are shown in black. Dashed lines indicate fewer than 50 employed graduates, on average, each year.

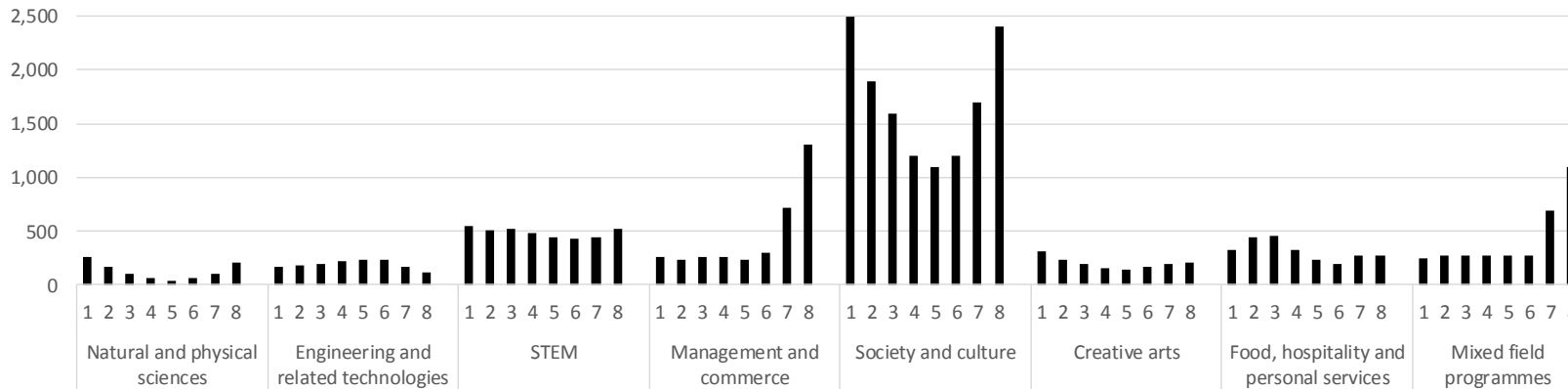
(b) Number of graduates who are employed in New Zealand and doing no further study



(c) Graduate destinations – Level 1-4 certificate



(d) Total number of graduates



Source: Statistics New Zealand, Integrated Data Infrastructure, Ministry of Education interpretation.

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