



MINISTRY OF EDUCATION

*Te Tāhuhu o te Mātauranga*

# Measuring up – how does the New Zealand tertiary education system compare?



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This report forms part of a series called *Supporting the tertiary education system*.

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## Contents

1.	Introduction	6
2.	Why do we need cross-country indicators?	8
3.	Part A: The output and impact of education	10
3.1	The educational attainment of the adult population	10
3.2	Graduation rate	11
3.3	Completion of tertiary education	14
3.4	Tertiary education and employment	15
3.5	The economic benefits of education	16
3.6	Rates of return on investments in tertiary education	18
4.	Part B: The financial and human resources invested in education	
4.1	Government expenditure on tertiary education	21
4.2	Total expenditure on tertiary education institutions	21
4.3	Expenditure per student in tertiary education	22
4.4	Funding for students	24
4.5	How much do students pay?	25
5.	Part C: Access to education, participation and progression	27
5.1	Access to tertiary education	27
5.2	Enrolments rates in post-school education	27
5.3	International students	29

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## Figures

Figure 1	Proportion of the adult population with a tertiary qualification (2006), New Zealand and selected OECD countries	10
Figure 2	Proportion of the adult population with a degree-level qualification or higher (2006), New Zealand and selected OECD countries	11
Figure 3	Graduate rate, degree-level and higher (2006), New Zealand and selected OECD countries	11
Figure 4	Graduation rate, diploma-level, New Zealand and selected OECD countries	12
Figure 5	Graduation rate for selected years, New Zealand and the OECD average	12
Figure 6	Graduation rate, degree-level and higher, New Zealand, Australia and OECD average by selected fields of study	13
Figure 7	Completion rate, all tertiary education (2005), New Zealand and selected OECD countries	14
Figure 8	Completion rate, degree-level (2005), New Zealand and selected OECD countries	14
Figure 9	Completion rate of full-time degree-level students (2005), New Zealand and selected OECD countries	15
Figure 10	Employment rates at degree-level by gender (2006), New Zealand and selected OECD countries	16
Figure 11	Earnings premium for holding a tertiary education qualification (2006), New Zealand and selected OECD countries	17
Figure 12	Earning of women as a percentage of the earnings of men, by qualification level and selected age groups, New Zealand and selected OECD countries	17
Figure 13	Private internal rate of return on investment in obtaining a tertiary education qualification, for men and women entering tertiary education following schooling, New Zealand and selected OECD countries	19
Figure 14	Private internal rate of return on investment in obtaining a tertiary education qualification at age 40 years for men and women, New Zealand and selected OECD countries	19
Figure 15	Public internal rate of return on investment in obtaining a tertiary education qualification, for men and women entering tertiary education following schooling, New Zealand and selected OECD countries	20
Figure 16	Public internal rate of return on investment in obtaining a tertiary education qualification at age 40 years for men and women, New Zealand and selected OECD countries	20
Figure 17	Government spending on tertiary education in 2005 for selected OECD countries	21
Figure 18	Expenditure on education institutions in 2005 for selected OECD countries	22

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Figure 19	Annual expenditure per student in tertiary education institutions in 2005 for selected OECD countries	23
Figure 20	Ratio of expenditure per student in tertiary education institutions in 2005 as a % of gross domestic product per capita, selected OECD countries	23
Figure 21	Ratio of expenditure per student in tertiary education institutions in 2005 and per capita gross domestic product for selected OECD countries	24
Figure 22	Distribution of government spending on tertiary education in 2005 for selected OECD countries	25
Figure 23	Annual average domestic tuition fees in 2005 for selected OECD countries	26
Figure 24	Proportions of public and private expenditure on education institutions in 2005 for selected OECD countries	26
Figure 25	Net-entry rate to degree-level study (2006), New Zealand and selected OECD countries	27
Figure 26	Enrolment rates in tertiary education in 2006 at ages 17, 18, 19 and 20 years, New Zealand and selected OECD countries	28
Figure 27	Enrolment rates in tertiary education in 2006 at ages 20 years and over, New Zealand and selected OECD countries	29
Figure 28	Percentage of international students in tertiary education in 2006, selected OECD countries	29

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## INTRODUCTION

Every year, the Organisation for Economic Cooperation and Development (OECD) publishes *Education at a Glance*, a set of indicators that compare the performance of the education systems of its member countries. These indicators give us a good opportunity to view the performance of our system against the systems of other countries. Despite some limitations, the *Education at a Glance* indicators probably give us the most reliable and most complete basis for comparison currently available to us.

This note looks at the indicators in *Education at a Glance 2008* that give insight into the performance of the New Zealand tertiary education system. It explores the question: How do we appear to measure up against other OECD countries and in particular, against the countries we usually compare ourselves with.

### Highlights of this year's indicators

#### Educational attainment of the adult population

The proportion of the New Zealand population who hold a tertiary qualification is above the OECD mean, above Australia, above the UK and equal to the US but lower than Canada.

#### Completion rates in tertiary education

New Zealand's tertiary education qualification completion rates are below the OECD average. But this is influenced by the fact that we have a relatively high proportion of part-time students. The OECD reports that New Zealand is above the mean for the countries that can report completion rates for full-time degree students.

#### Employment rates

Because New Zealand has low unemployment, employment rates for holders of tertiary qualifications are high. But as much of the recent growth in employment in New Zealand has been among those with low or no qualifications, there is a lower difference in this country than in other OECD countries in the employment rates of those with and without qualifications.

#### Earning premiums

Because the strong labour market has created strong employment and earnings for those with low or no qualifications, the difference in earnings between those without qualifications and those who do hold qualifications is lower in New Zealand than in other countries.

#### Government spending on tertiary education

The New Zealand government's spending on tertiary education – at diploma and degree level – was 1.5 percent of gross domestic product in 2005. This was sixth in the OECD and above the OECD average of 1.3 percent.

#### Resourcing for tertiary education providers

The funding available to tertiary education providers in New Zealand – from government funding plus fees and including the fees from international students – is also 1.5 percent of gross domestic product, equal to the OECD average.

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### Expenditure per student

While expenditure per student is lower in New Zealand than the OECD average, that measure doesn't take account of the resources available for tertiary education. The OECD records the ratio of the expenditure per student to gross domestic product per capita, in order to relate investment in tertiary education to national wealth. On this measure, New Zealand is above the OECD mean and above Japan and Ireland, but below the US, the UK and Australia.

### The split in resourcing between government and students

Based on total resourcing, the government provides 60 percent of the costs of tertiary education providers. But this calculation includes the revenue from international students. Taking international students out of the mix, the government pays around 70 percent of the cost of educating domestic students in universities. However, part of the student contribution is paid direct to the providers by way of subsidised student loans. Allowing for this, the average contribution made by domestic students to their tertiary education is around 21 percent.

### Spending on supporting students

In 2005, subsidies to students accounted for 42 percent of government spending on tertiary education in New Zealand, the second highest of all OECD countries and above the OECD average of 18 percent. But if you take account of the fact that borrowing for fees through the loan scheme are paid direct to providers, the proportion actually spent supporting students falls to 23 percent.

### Participation

At every age above 17 years, the enrolment rate in tertiary education in New Zealand is above the OECD average and ahead of the UK but slightly behind Australia.

### Fees

Domestic degree students in New Zealand pay lower fees than those in countries like Australia, Japan and the US. Eight OECD countries charge no fees for degree students.

### International students

New Zealand was second only to Australia in 2006 in the percentage of tertiary students who are international students. Comparing 2006 with 2000, New Zealand had the highest growth rate of any country in the OECD on this measure.

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## 2 WHY DO WE NEED CROSS-COUNTRY INDICATORS

Governments and taxpayers make very substantial investments in tertiary education. In New Zealand, the government spends more than \$4 billion on tertiary education. And students and employers also pay large amounts. This investment is justified by the expectation that tertiary education makes a positive contribution to our society and to our economy – in other words, that investment is expected to yield a return. The government expects that a better educated population will have higher skills and will improve productivity and innovation in the economy, while research has shown that countries with higher average levels of education have better health outcomes and lower crime rates. For individuals, tertiary education qualifications offer a path to better careers, with higher earnings. And for firms, employees with higher qualifications are likely to have higher skills and hence, offer greater returns.

Therefore, all governments are paying increasing attention to international comparisons as they search for effective policies that enhance individuals' social and economic prospects and seek to meet rising demands. The indicators published annually in *Education at a Glance* are intended to help governments, people working in education and the public to see their education systems in the light of the performance of comparable countries.

And international comparisons are especially important for a small country like New Zealand. New Zealand is not as wealthy as some other OECD countries. We have a small open economy, with a high reliance on land-based resources. Therefore, we rely to an unusual extent on innovation to make the most of our resource base. And all the international evidence suggests that an innovative economy and improvements in productivity depend on a more highly skilled workforce. And that, in its turn is influenced by the quality of the tertiary education we can offer.

Yet, in international terms, our system is small. And within some of the sub-sectors – for instance, the universities – we have a homogeneous system. Therefore we need to see our performance in an international context and to compare our system, its performance, the investment we are making in it and the return we get from it with other countries.

### The scope of the indicators

*Education at a Glance* covers all sectors of education. This note is confined to the tertiary sector only. The tertiary education indicators in *Education at a Glance* cover three areas:

- The output and impact of education
- Financial and human resources invested in education
- Access to education, participation and progression

This note looks at all three areas, reports on the performance of the New Zealand tertiary system and compares our performance against selected countries.

It should be noted that there are some tertiary education indicators in *Education at a Glance* that do not include New Zealand. For the most part, that is because in those cases, we do not hold data on the relevant topic or else the data we do hold is not suitable to meet the indicator definition.

### The OECD is working to strengthen its indicators

The OECD's education indicators are quantitative. They are designed to be internationally comparable. The definitions are agreed by experts in the participating countries. But indicator construction is complicated. In some cases, the indicators are less than perfect; there is a trade-off between the ideal indicator and the capacity of countries to supply the appropriate data. However, as



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countries' tertiary education information systems improve, the OECD is working to improve the indicators and to make them more meaningful.

The 2008 edition of *Education at a Glance* has more reliable and meaningful indicators on the returns to tertiary education and on completion of tertiary education. Over the next years, the OECD is working towards better access indicators.

## A note on definitions

New Zealand has a more inclusive definition of tertiary education than the OECD. We include all post-secondary education – degrees and diplomas, foundation certificates, industry training and adult and community education as part of our tertiary education system. The OECD defines tertiary education more narrowly using, as the base, the levels set out in the International Standard Classification of Education (ISCED). The tertiary education classifications used by the OECD are:

- ISCED 6 – advanced research programmes. New Zealand includes doctoral enrolments only in this classification.
- ISCED 5A – this includes degree level qualifications at bachelors and masters levels.
- ISCED 5B – this includes qualifications typically of two years' duration that develop vocational skills. Most New Zealand non-degree level diplomas offered in New Zealand fit into this category.

When the OECD talks about tertiary education, it is referring to ISCED levels 5 and 6. This excludes most of the certificate level enrolments offered in New Zealand tertiary education providers. Those certificates are classified by the OECD as 'postsecondary non-tertiary' and some are classified as upper secondary.

In this note, we have focussed mainly on tertiary education on the OECD's definition – ISCED 5 and 6 – though there is some reference to post-secondary non-tertiary in places.

When discussing ISCED 5A, we have mainly used the term 'degree level', while ISCED 5B is referred to as 'diploma level'. When an indicator combines the results for ISCED 5A and 6, we refer to this as 'degree level and above'.

## A note on the analytical approach used here

Thirty-six countries' data are included in the 2008 edition of *Education at a Glance*. These include 30 OECD member countries plus a number of 'partner countries' such as Brazil, Israel, Estonia and the Russian Federation.

In the analysis that follows we have tended to focus on a relatively small subset of the countries – those with whom we share aspects of our educational culture and with whom we have usually sought to compare ourselves. These include a number of English speaking countries – Australia, Canada, the UK and the US. We have also included Japan as a country in our region, plus four Scandinavian countries – Denmark, Finland, Norway, Sweden – as they have taken a contrasting direction to New Zealand and as they usually show up well in international comparisons. In many indicators, the OECD gives the mean of the OECD countries

We don't report on all the indicators, only on those that are significant and that shed light on our performance. For the full detail of the report, it is necessary to consult the full document and also the technical notes and supplementary data held on the OECD's website [www.oecd.org](http://www.oecd.org).

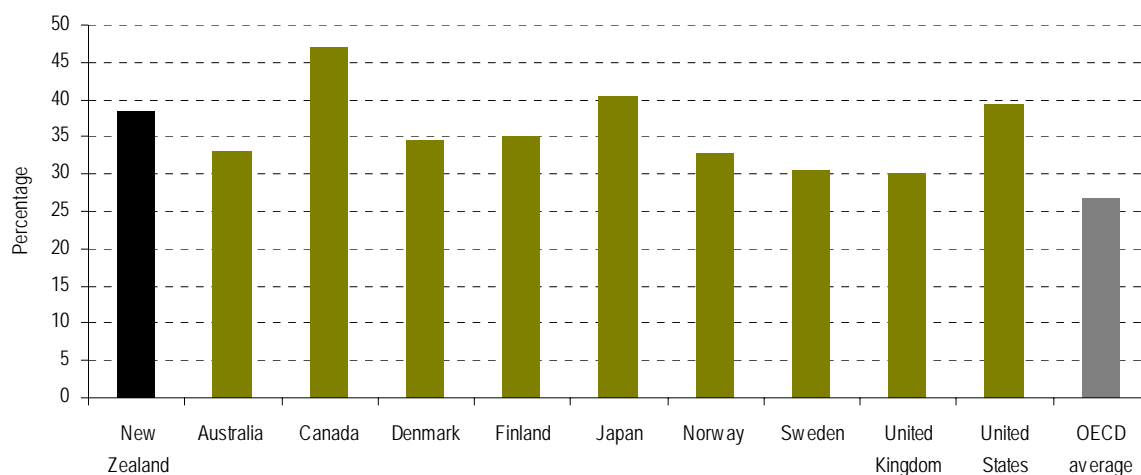
### 3 PART A: THE OUTPUT AND IMPACT OF EDUCATION

#### 3.1 The educational attainment of the adult population

The proportion of the New Zealand population aged 15 to 64 years who hold a tertiary qualification is relatively high. At 38 percent, that is above the OECD mean (27 percent), above Australia (33 percent), above the UK (30 percent) and equal to the US. It is lower than Canada where the figure is 47 percent.

**Figure 1**

Proportion of the adult population with a tertiary qualification (2006), New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A1.1a, p42.

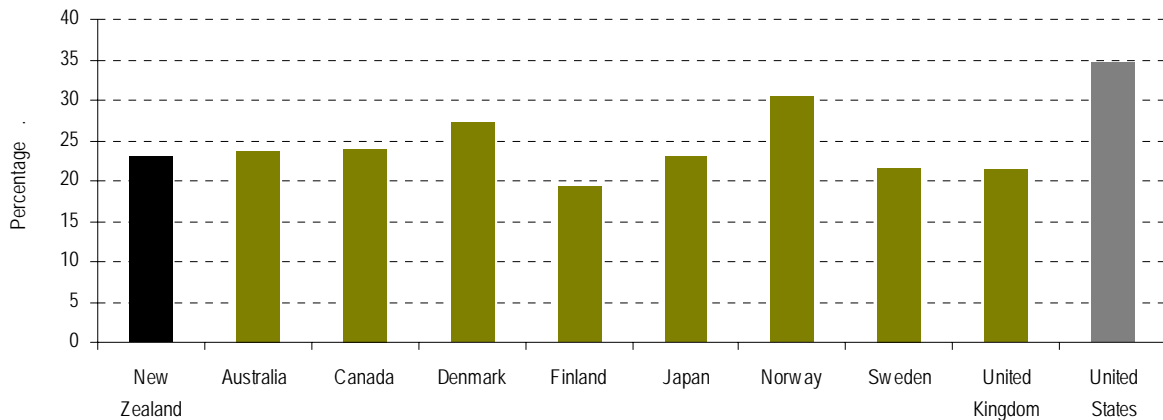
In *Education at a Glance 2007*, it was our upper secondary attainment that was above average, with tertiary education closer to the OECD average. The switch between upper secondary and tertiary in this indicator between 2007 and 2008 is due to an improvement in the classification of qualifications by Statistics New Zealand.

In the 25 to 34 year-old age group, New Zealand rates fifth of the participating countries, reflecting the expansion of participation and achievement that has occurred in the New Zealand tertiary system since the early 1990s.

However, while New Zealand rates very high on this indicator, we do not perform quite as well when one looks at degree-level qualifications, where we sit below the US, Australia and Canada.

**Figure 2**

Proportion of the adult population with a degree-level qualification or higher (2006), New Zealand and selected OECD countries



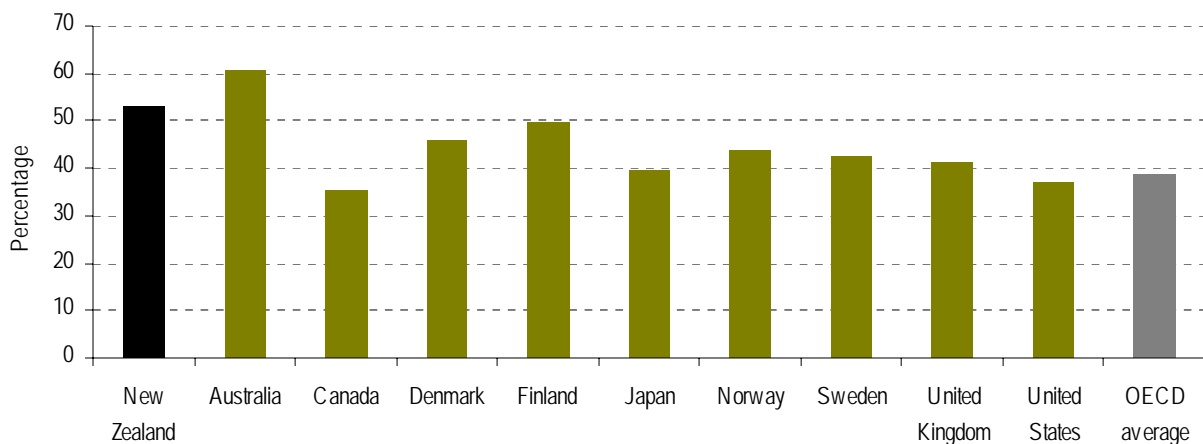
Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A1.1a, p42.

### 3.2 Graduation rate

The graduation rate in *Education at a Glance* represents the percentage the country's population completing a qualification for the first time that year. New Zealand has always rated high on this indicator. The OECD tables show as third (behind Japan and Ireland) at diploma level and third (behind Iceland and Australia) at degree level. We are also significantly ahead of the OECD mean on both measures. To some extent, this reading reflects higher tertiary participation in recent years. However, the indicator definition means that there are some biases in the reported graduation rates. The indicator overestimates graduation rates in countries with a high proportion of international students (like Australia and New Zealand). It also overestimates rates where a country has a high proportion of older students (like Iceland and New Zealand). Just under a quarter of New Zealand's graduation rate at 5A and 5B is attributable to mobile students, while a third of New Zealand's graduation rate at 5B is attributable to students aged 40 and over. Therefore, while New Zealand would probably still be above average if we were to adjust for these distortions, it is unwise to read too much into the country's high performance on this measure.

**Figure 3**

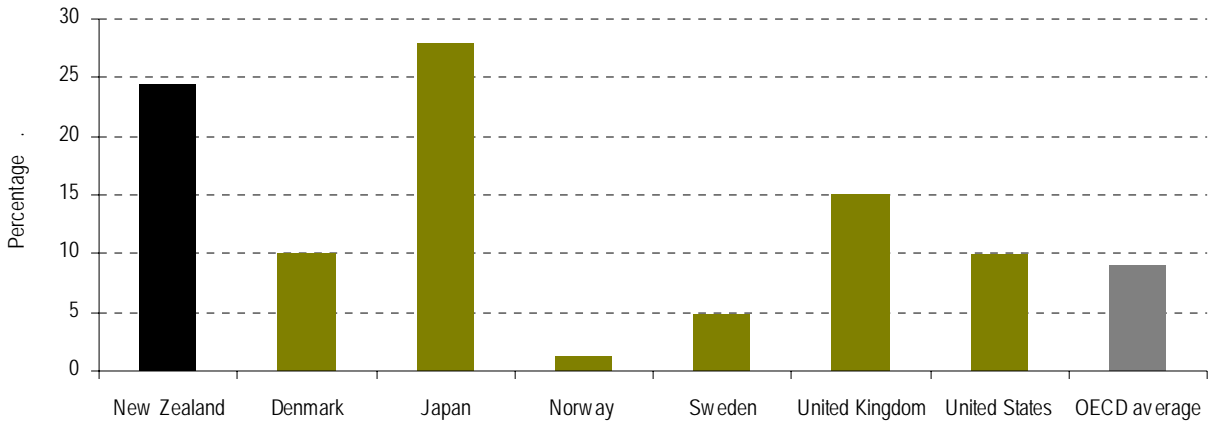
Graduation rate, degree-level and higher (2006), New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A3.1, p86.

**Figure 4**

Graduation rate, diploma-level (2006), New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A3.1, p86.

Recognising the potential distorting effect of international students in graduation rates, the OECD has included a new table that gives the proportion of international students in the number of graduates – although very few countries have supplied data for this table. At diploma level, New Zealand is the only country with a significant number of international students in its graduates – 21 percent. At bachelors degree level, Australia has the highest proportion of international graduates of the countries reporting (23 percent) with New Zealand second (18 percent). At masters/postgraduate level, Australia, the UK, Germany, Switzerland and Belgium all have higher proportions of international than New Zealand<sup>1</sup>.

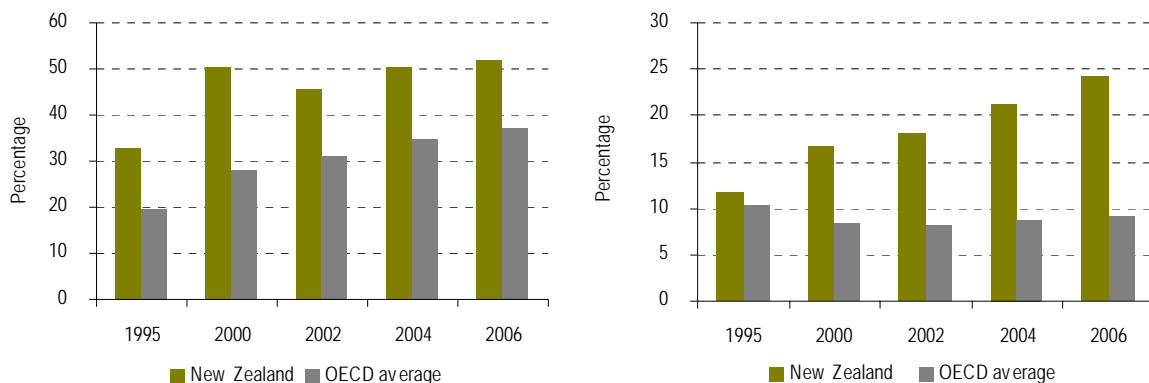
When looking at graduation rates, what may be more important is the trend. The two graphs below show the New Zealand graduation rates against the OECD mean at both diploma and degree levels over recent years.

**Figure 5**

Graduation rate for selected years, New Zealand and the OECD average

Degree level and higher

Diploma level



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A3.2, p87.

<sup>1</sup> Refer to Table A3.3, page 88. Note also high postgraduate fees for international students in NZ limited enrolments by international students at that level. This is now changing as a result of the policy change on fees for international doctoral students.

New Zealand was well above the OECD average in the proportion of graduates who were women (OECD 2008, Table A3.5a, p90).

It is also interesting to look at graduates' field of study. The OECD reports on the split by field of study for all degree-level and postgraduate qualifications awarded in 2000 and 2006. This shows that New Zealand was:

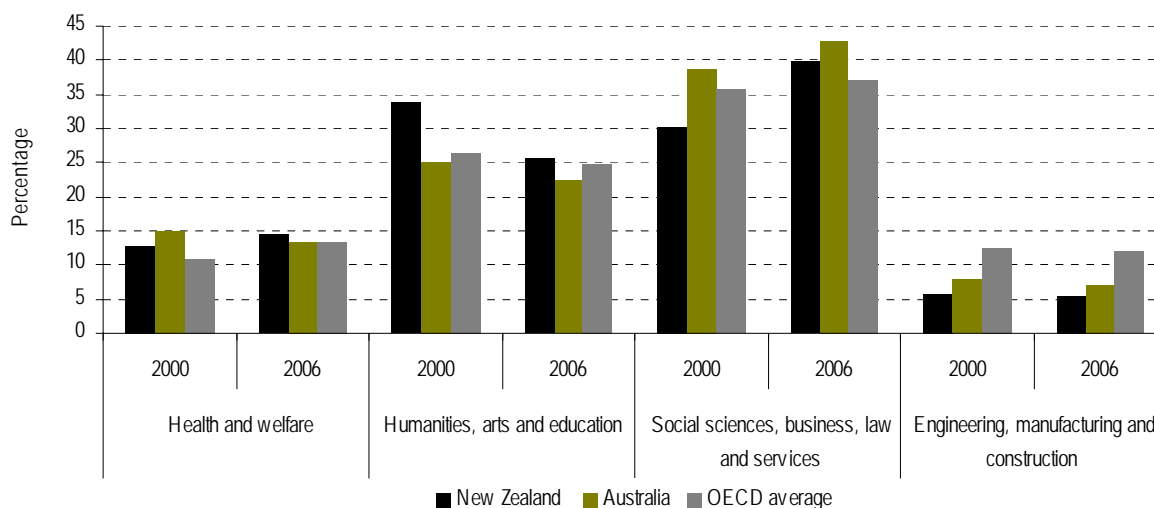
- above the OECD average in 2000 and 2006 in qualifications in health and welfare
- below the average in both years in graduations in social sciences, business and law
- well below the average in both years in completions in engineering, manufacturing and construction
- well below countries like Korea, Japan, Finland, Sweden and Switzerland in the proportion of graduates in engineering (OECD 2008, Table A3.4a, p89).

New Zealand was above the average in both years in life sciences, physical sciences and agriculture but appears in the OECD data to have had a substantial fall between 2000 and 2006 in qualifications in those fields. That fall reflects a change in reporting methodology and therefore is unlikely to be 'real'.

The graph below compares New Zealand with Australia and the OECD mean in the breakdown of graduates at degree level and above in 2000 and 2006 in selected fields. In engineering, both New Zealand and Australia lag behind the OECD mean. There has been a relative increase in New Zealand in graduations in social sciences, business and law between 2000 and 2006 at those levels.

**Figure 6**

Graduation rate, degree-level and higher, New Zealand, Australia and OECD average by selected fields of study



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A3.4a, p89.

Interestingly, the proportion of women graduating in fields like engineering, science and mathematics in New Zealand is above the OECD average, reflecting the high proportion of women among graduates (OECD 2008, Table A3.5a, p90).

While the number of graduations in some of the science and technology fields is relatively low in New Zealand, a relatively high proportion of our workforce holds qualifications in these fields (OECD 2008, Table A3.6, p91).

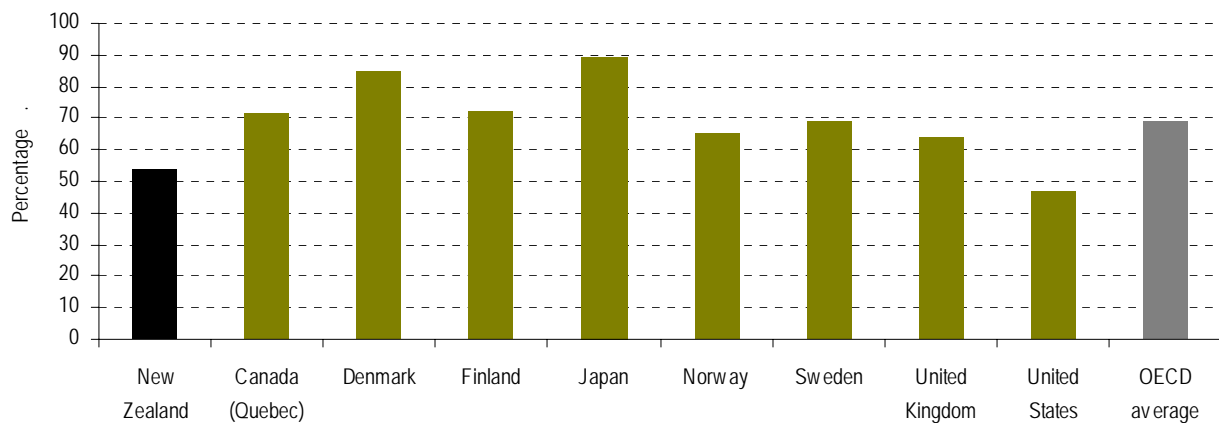
### 3.3 Completion of tertiary education

We have long known that New Zealand has relatively low rates of completion in tertiary education. We have always argued that this was due, in part, to the fact that we have a high proportion of part-timers in our student body. A new indicator published for the first time in *Education at a Glance 2008* provides objective evidence in support of that view.

On average, 31 percent of entrants to tertiary education in 19 OECD countries leave without completing a qualification. However, the figure for New Zealand is around 45 percent, the third worst of the 19 countries. Conversely, on average, 69 percent of those who start a degree complete on average in the 19 countries, whereas in New Zealand, 61 percent of degree starters complete a tertiary qualification after eight years.

**Figure 7**

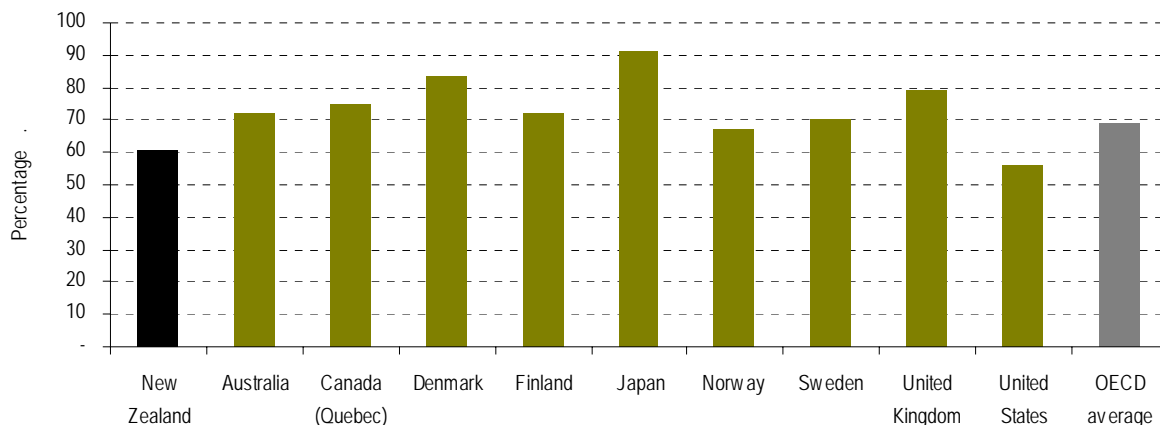
Completion rate, all tertiary education (2005), New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A2.4a, p89.

**Figure 8**

Completion rate, degree-level (2005), New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A2.4a, p89.

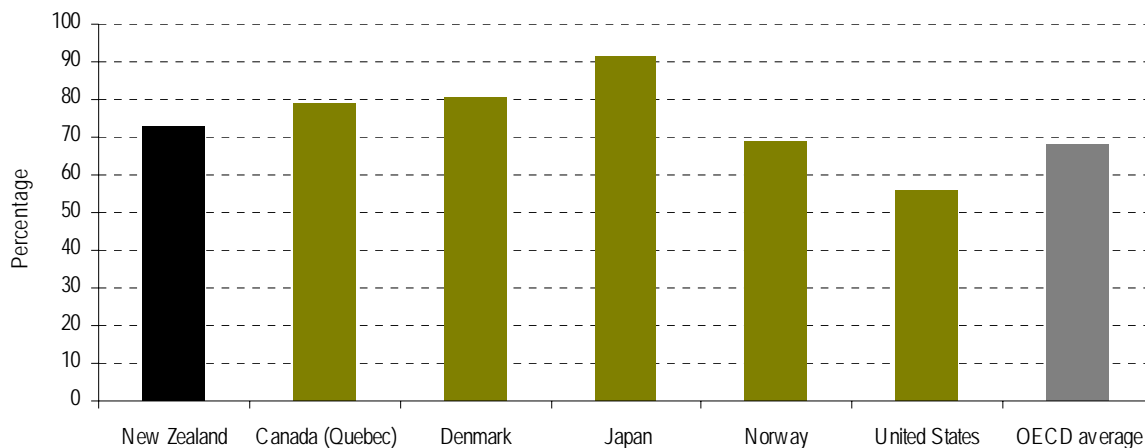
The OECD notes: 'Non-completion of a degree does not mean that the skills and competencies acquired will be lost and are not valued by the labour market .... This helps explain students' decisions to leave the education system before graduating' (page 93).

However, full-time students have better chances of completing qualifications than do part-time students. In the twelve OECD countries for which data are available, on average, 68 percent of full-time students at this level complete. This compares with 73 percent for New Zealand. New Zealand ranks fourth out of the twelve countries on this measure. Japan has the highest reading – 91 percent – reflecting the intensely competitive entry into universities in that country.

The OECD notes: ‘The largest differences between full-time and part-time students are observed in Canada (Quebec) and New Zealand where completion rates for full-time students that enter tertiary-type A education are at least 25 percentage points higher than for students with part-time status’ (page 93). The graph below shows the completion rates for full-time students in selected countries.

**Figure 9**

Completion rate of full-time degree-level students (2005), New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A4.2 p99

### 3.4 Tertiary education and employment

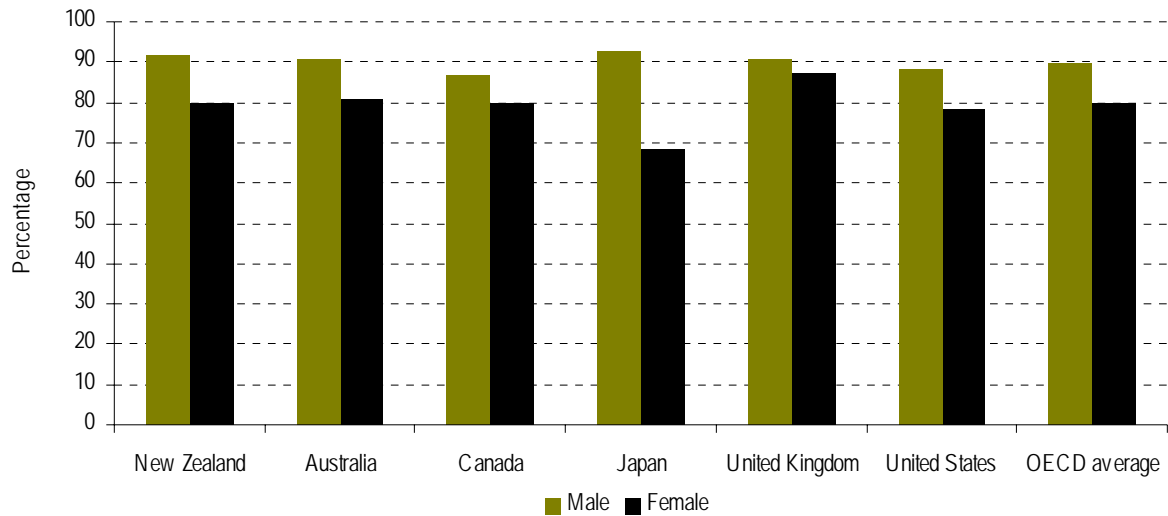
With its very low unemployment, New Zealand has reasonable results on the OECD’s employment indicators. However, as much of the recent growth in employment in New Zealand has been among those with low or no qualifications<sup>2</sup>, the level of qualifications held is a less powerful predictor of employment in this country than in some others.

At degree level and higher, the male employment rate is fifth in the OECD (behind Iceland, Switzerland, Japan and Ireland) and above the OECD mean. While New Zealand research shows that having a degree is significant in opening employment opportunities for women in our labour market, the employment rate of women with degrees or higher is around the OECD mean.

<sup>2</sup> Ministry of Education (2007) *Profile and Trends 2006 – New Zealand’s Tertiary Education Sector*, [www.educationcounts.govt.nz](http://www.educationcounts.govt.nz)

**Figure 10**

Employment rates at degree-level by gender (2006), New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A8.1a, p151.

However, New Zealand predictably performs better when all education levels are taken into account. In fact, the difference between the employment rate of New Zealanders with degrees and the employment rate of all New Zealanders is among the lowest in the OECD.

The OECD states: 'Variations among countries in the female employment rate are a primary factor in differences in overall employment rates. The countries with the highest overall rate of employment for 25-to-64-year-olds – Denmark, Iceland, New Zealand, Norway, Sweden, Switzerland and the United Kingdom – also have among the highest female employment rates'.

A similar picture emerges when one looks at unemployment rates. New Zealand has the second lowest unemployment in the OECD in 2006 (to Iceland) but, while unemployment is low among tertiary qualified people, the differences between New Zealand and other countries is less (OECD 2008, Table A8.2a p153-4).

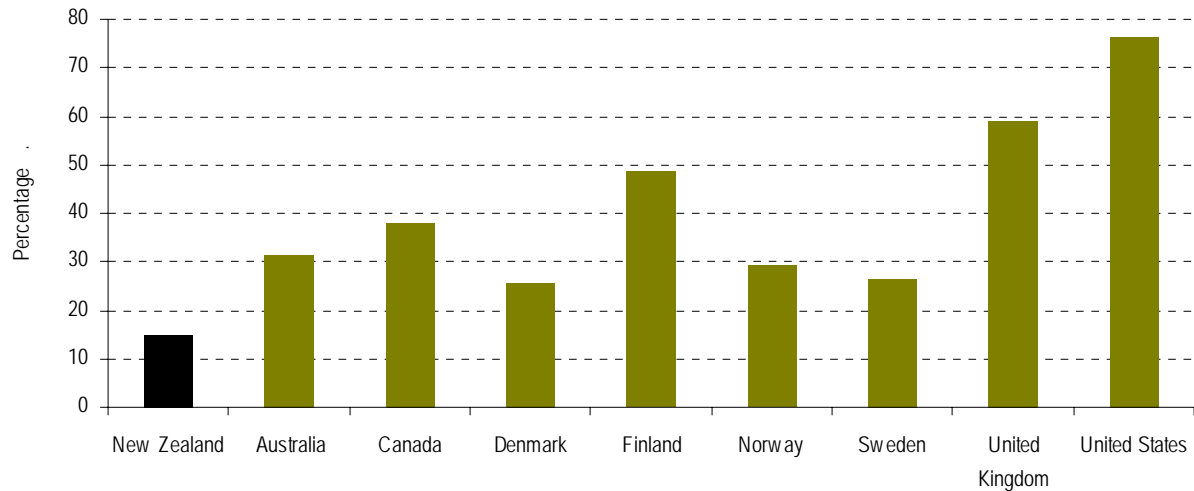
### 3.5 The economic benefits of education

People with higher qualifications earn more on average than those without. However, the low unemployment in New Zealand and the tradition of low disparities in earnings in this country means that employers pay a very low wage premium for tertiary qualifications. Among men, the earnings margin enjoyed by men with tertiary qualifications was the lowest in the OECD in 2006. Among women with a degree or higher, the premium was the fifth lowest in the OECD. (p165).



**Figure 11**

Earnings premium for holding a tertiary education qualification (2006), New Zealand and selected OECD countries



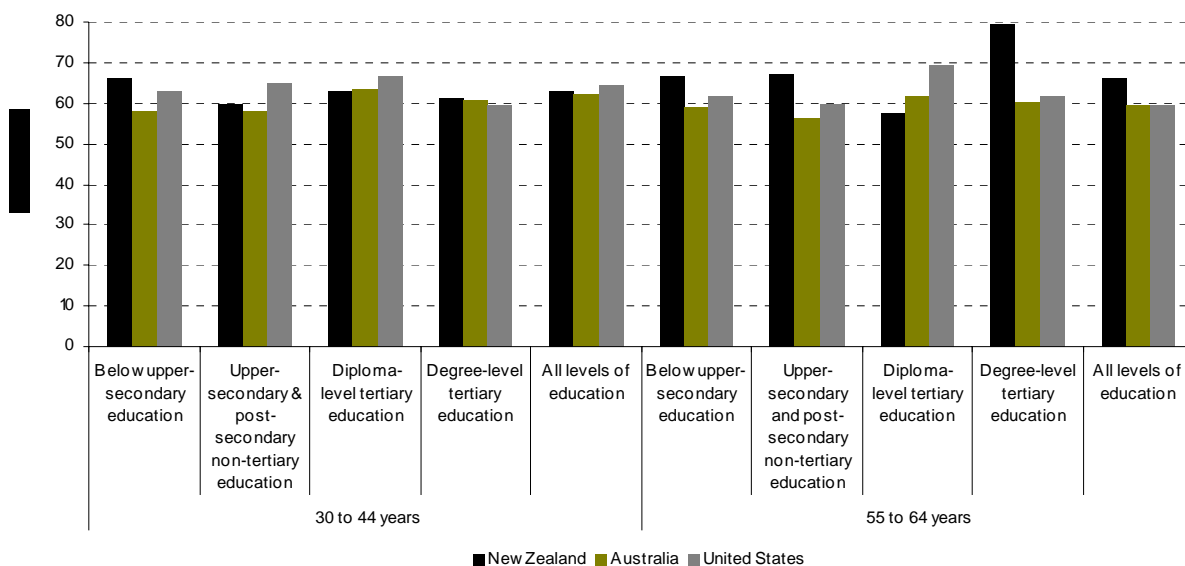
Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A9.1a, pp173-174.

Note: The graph shows the percentage margin in earnings held by a person with a tertiary education qualification, at diploma level (ISCED 5B) or higher. The population is people aged between 25 and 64.

The OECD data shows that in New Zealand, in higher age groups, higher qualifications tend to reduce the disparities between men and women in the labour market. Among 55 to 64 year olds, women with a degree or higher earn 80 percent of the earnings of men with comparable qualifications, compared with 58 percent for those with diplomas, 60 percent for those who completed secondary school and 67 percent for others. However, that is not the case among 30 to 44 year olds, where women with degrees or higher earn only 61 percent of men with the same qualification.

**Figure 12**

Earnings of women as a percentage of the earnings of men, by qualification level and selected age groups (2006), New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A9.1b, p175.

Note: The graph shows the average earnings of women as a percentage of average earnings by men, by education level.

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To some extent, the difference may reflect greater reliance by women on part-time work in the 30 to 44 year age group.

Trend data shows that the earnings gap between men and women began to reduce in 2006, after having grown among the tertiary qualified between 2001 and 2005 (Page 177).

### 3.6 Rates of return on investments in tertiary education

Since 2007, the OECD has been calculating rates of return on tertiary education. This entails their estimating the costs to government and to an individual student of undertaking a tertiary qualification and then putting that alongside the benefits – to the government in the form of additional tax receipts and to the individual in terms of extra earnings – that come over a graduate's expected life.

This is a complex calculation that requires the OECD analysts to make a number of assumptions and that depends on the quality of the data used to make estimates. And it is narrowly focussed on economic returns – the calculation makes no provision for the non-financial benefits, to individuals and to society, which research shows come from investing in tertiary education<sup>3</sup>.

Despite these limitations, this rate of return analysis is useful as a contribution to our understanding of the value we get from our investments in tertiary education.

The OECD analysis looks at:

- differences in the returns for men and women
- how returns differ between people who transition directly to tertiary education from school and people who complete tertiary education at age 40 years
- the returns for degree-level study, as opposed to post-secondary non-tertiary study and completion of secondary school
- the private rates of return – that is, the benefits that individuals get from their investment in tertiary education, and
- the public rate of return – that is, the benefits government gets.

The methodology used by the OECD generates an internal rate of return (internal rate of return) that attempts to take account of direct costs, such as tuition fees, and also indirect costs, such as the earnings foregone when an individual takes time out of the labour force to study. It also quantifies the benefit of reduced probability of unemployment and a social contribution effect. Essentially, an internal rate of return is an estimate of what the money spent on the education has returned. If the internal rate of return is above the risk-free government bond rate of interest, then the investment in education has paid a positive return.

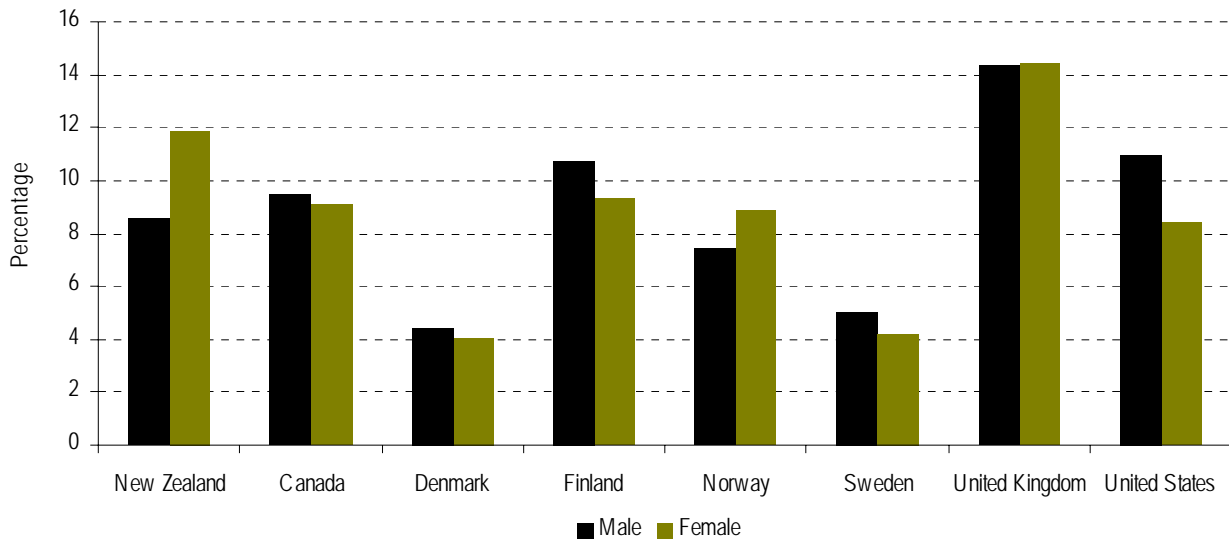
The private internal rate of return for a male who made a direct transition into tertiary education and completed a qualification in New Zealand in 2004 was 8.6 percent. For a woman, the internal rate of return was higher. The higher return for women reflects the fact that women without tertiary education qualifications experience greater disparities in the labour market.

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<sup>3</sup> For instance, research has shown that higher qualification levels are associated with better health outcomes. This benefits both the individuals concerned but also the government that funds health care.

**Figure 13**

Private internal rate of return on investment in obtaining a tertiary education qualification, for men and women entering tertiary education following schooling, New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A10.2, p196.

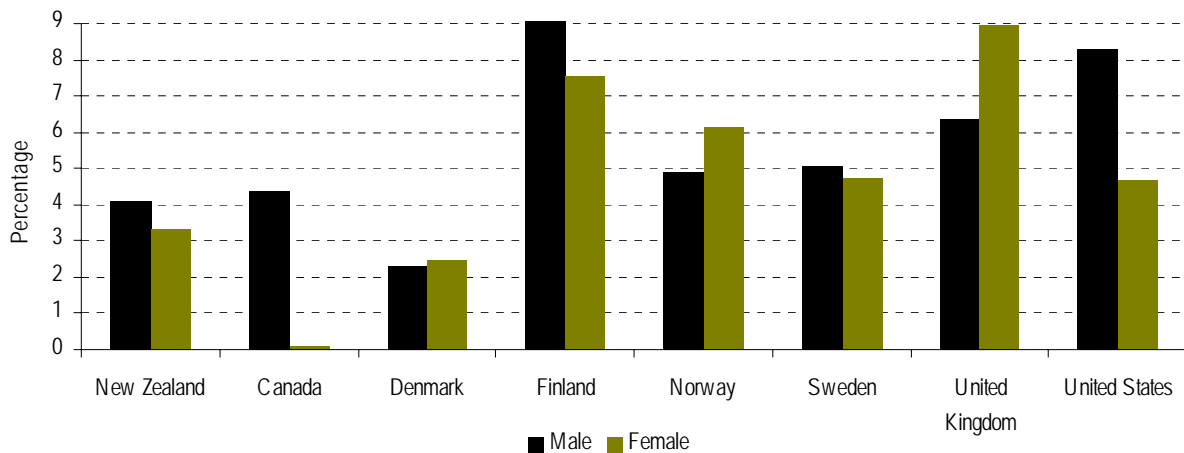
The internal rate of return to tertiary education for men in New Zealand is relatively low, reflecting the fairly compressed wage differentials in the New Zealand labour market. The highest internal rate of returns are found in countries where there is a relative shortage of graduates – the Czech Republic, Hungary, Poland and Portugal.

Interestingly, the private internal rate of return to completion of secondary school or of a post-secondary non-tertiary qualification in New Zealand is higher than the private internal rate of return to tertiary education – reflecting the lower cost of obtaining those qualifications and the compressed wage differentials. The same applies in the UK, the US and Sweden.

The private internal rate of return for those completing tertiary education at age 40 years are obviously lower – as most people re-entering education at an older age are foregoing higher earnings and because there are fewer years left for people to recoup their investment in education.

**Figure 14**

Private internal rate of return on investment in obtaining a tertiary education qualification at age 40 years, for men and women, New Zealand and selected OECD countries

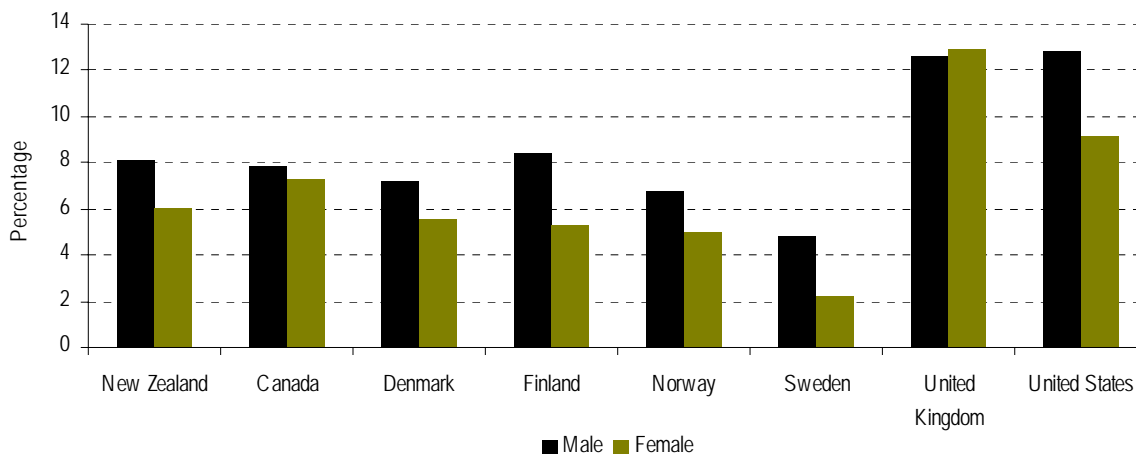


Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A10.4, p197.

The public internal rate of returns were set out in the graphs below. The public rate for men obtaining tertiary education at age 40 years is exceptionally high.

**Figure 15**

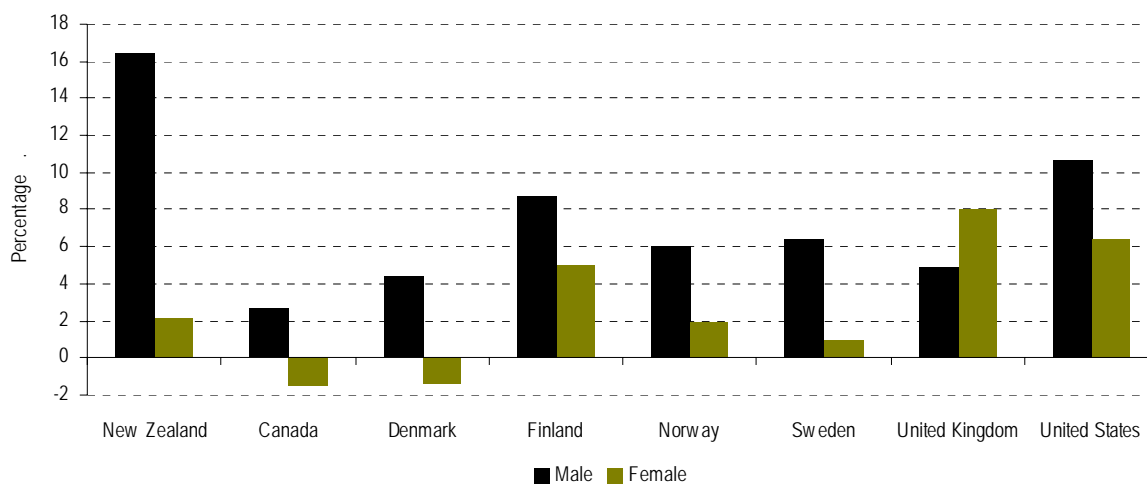
Public internal rate of return on investment in obtaining a tertiary education qualification, for men and women entering tertiary education following schooling, New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A10.5, p198.

**Figure 16**

Public internal rate of return on investment in obtaining a tertiary education qualification at age 40, for men and women, New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A10.6, p198.

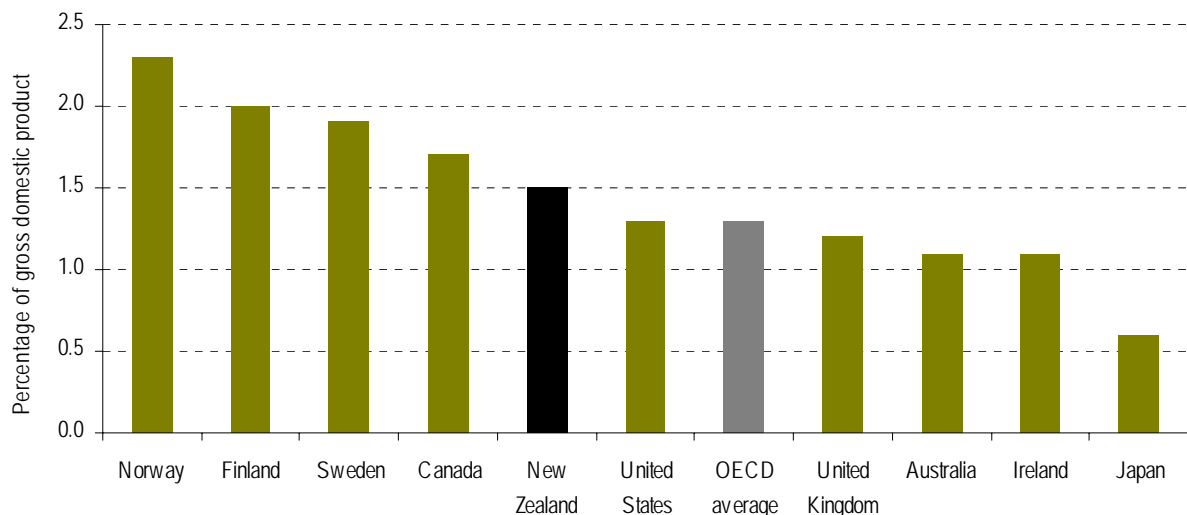
## 4. PART B: THE FINANCIAL AND HUMAN RESOURCES INVESTED IN EDUCATION

### 4.1 Government expenditure on tertiary education

The New Zealand government spends above the OECD average on tertiary education, expressed as a percentage of gross domestic product. New Zealand ranked sixth among OECD countries, with spending at 1.5 percent of gross domestic product in 2005. This compared with the OECD country average of 1.3 percent. As New Zealand has a high rate of participation in post-secondary, non-tertiary education, it is probable that its ranking would improve further if this was taken into account. The OECD country with the highest proportion of gross domestic product spent on tertiary education was Denmark (2.5 percent).

**Figure 17**

Government spending on tertiary education in 2005 for selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table B4.1.

Note: Government spending includes direct public expenditure on tertiary institutions plus public subsidies to households (including those for living costs).

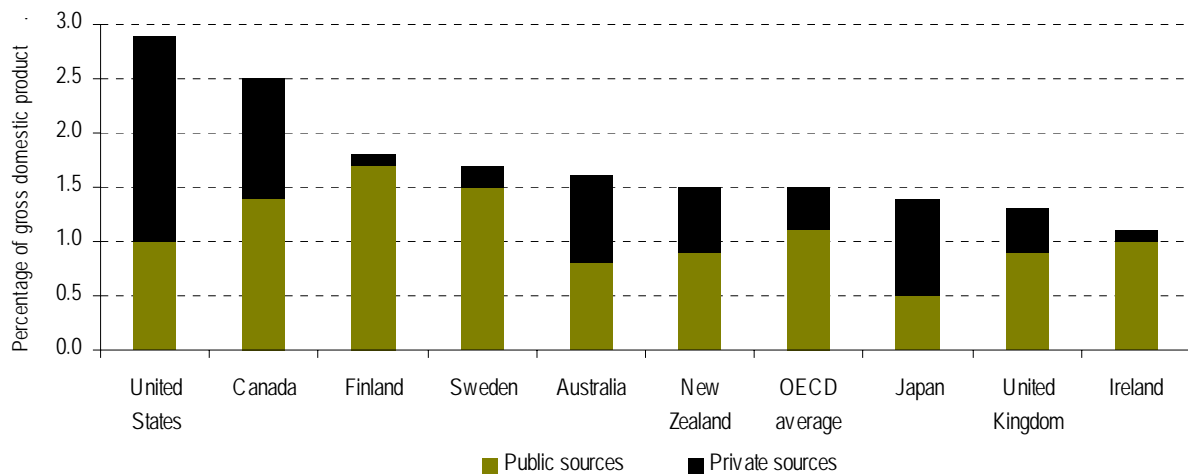
### 4.2 Total expenditure on tertiary education institutions

The government expenditure provided to fund tertiary education organisations<sup>4</sup> as a percentage of gross domestic product is below the OECD average. In 2005, the New Zealand government spent 0.9 percent of gross domestic product on tertiary education organisations compared with an OECD average of 1.1 percent. However, once student fees are added to government funding of tertiary education providers, the total funding to tertiary education organisations as a proportion of gross domestic product is equal to the OECD average.

<sup>4</sup> Note, the expenditure referred to here is the expenditure on tertiary education only, excluding post-secondary non-tertiary education.

**Figure 18**

Expenditure on educational institutions in 2005 for selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table B2.4.

This graph, showing tuition subsidies plus fees and including the fees from international students, is the best measure of the revenue of tertiary education institutions. At 1.5 percent of gross domestic product, this is in line with the OECD average.

This result shows the effect of cost-sharing between government and students – the money spent on tertiary education provision is about the OECD average, but a greater share of that money is attributable to students and their families. It needs to be noted, however, that much of the student contribution is paid through the Student Loan Scheme and hence, is subsidised by the government.

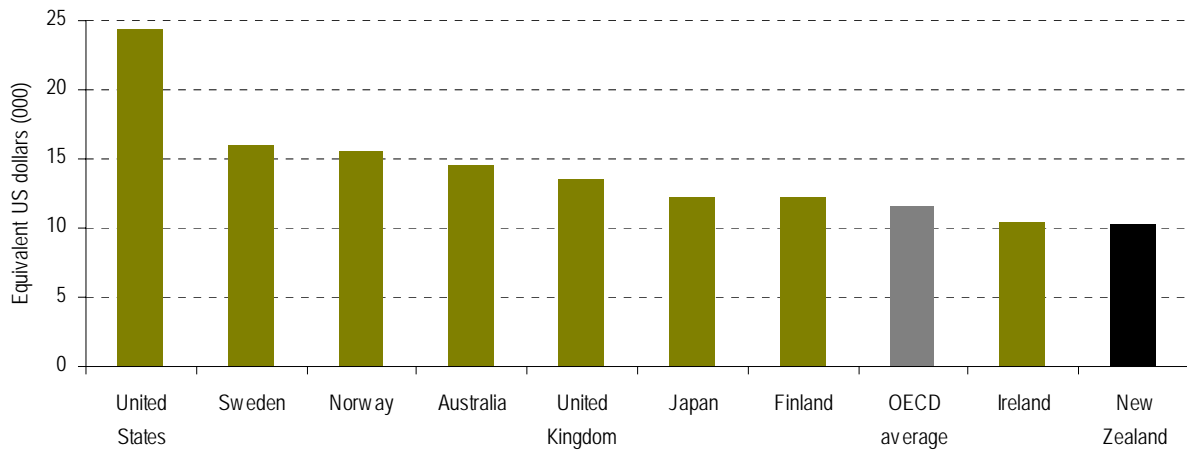
In New Zealand, 22.4 percent of total expenditure on educational institutions is at the tertiary level, against an OECD mean of 24.2 percent. This excludes money spent on 'post-secondary, non-tertiary' education and money spent on student support (OECD 2008, Table B1.2 p220).

### 4.3 Expenditure per student in tertiary education

A comparison of annual expenditure per student on tertiary institutions shows that New Zealand ranks 19th out of 27 OECD countries. This puts it below the United States, Australia and the United Kingdom. Annual government and private spending on tertiary institutions was US\$10,262 per student in 2005, on a purchasing power parity basis, compared with the OECD average of US\$11,512 per student. The purchasing power parity index used, however, is the gross domestic product purchasing power parity index. This reflects the cost structure of entire economies rather than the education costs faced by tertiary education providers in member countries. So caution should be exercised in viewing these results. In addition, lower annual expenditure does not necessarily lead to lower achievement as the efficiencies of the tertiary education system need to be taken into account.

**Figure 19**

Annual expenditure per student in tertiary education institutions in 2005 for selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table B1.1a.

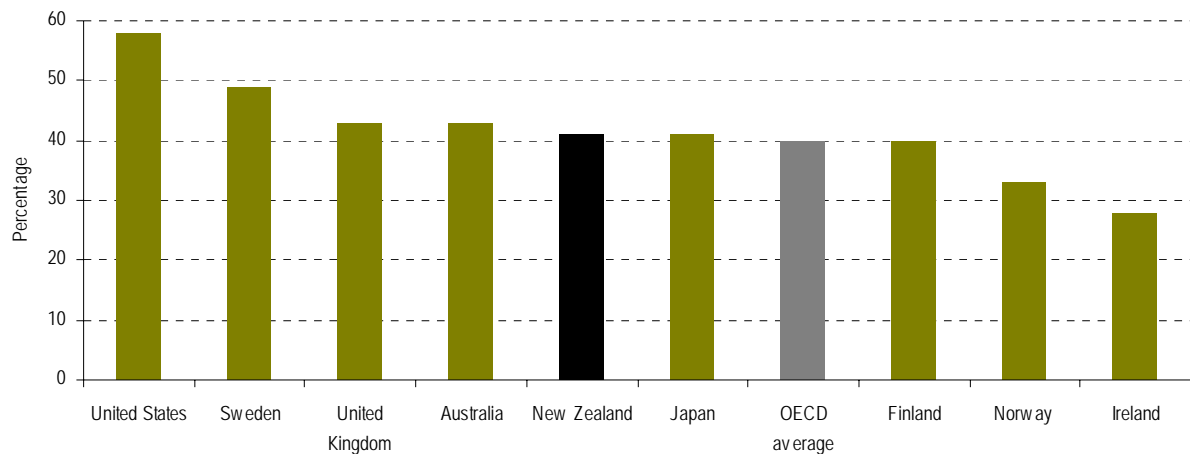
Notes:

1. This figure expresses annual expenditure on tertiary institutions per student in equivalent US dollars converted using purchasing power parities, based on full-time equivalents.
2. Annual expenditure includes government and private spending on tertiary institutions.

Expenditure per student, of course, needs to be seen in the light of national wealth. The graph below shows the ratio between expenditure per student and gross domestic product per capita.

**Figure 20**

Ratio of expenditure per student in tertiary education institutions in 2005 as a % of gross domestic product per capita, selected OECD countries



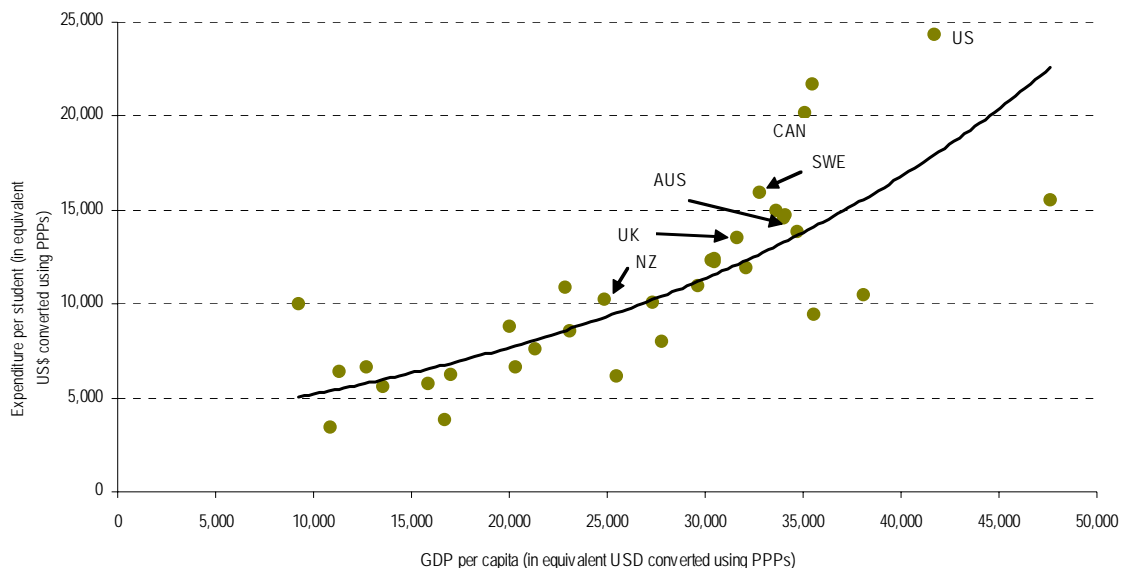
Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table B1.4, p223.

On that measure, New Zealand (ratio of 0.41) is slightly above the OECD mean of 0.40.

That is important because there is a reasonable correlation between national wealth and expenditure per student in tertiary education. By and large, the countries that can afford to spend more do so. This is illustrated in the graph below.

**Figure 21**

Ratio of expenditure per student in tertiary education institutions in 2005 and per capita GDP for selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Chart B1.6, p212.

Note: The  $R^2$  value is 0.65.

#### 4.4 Funding for students

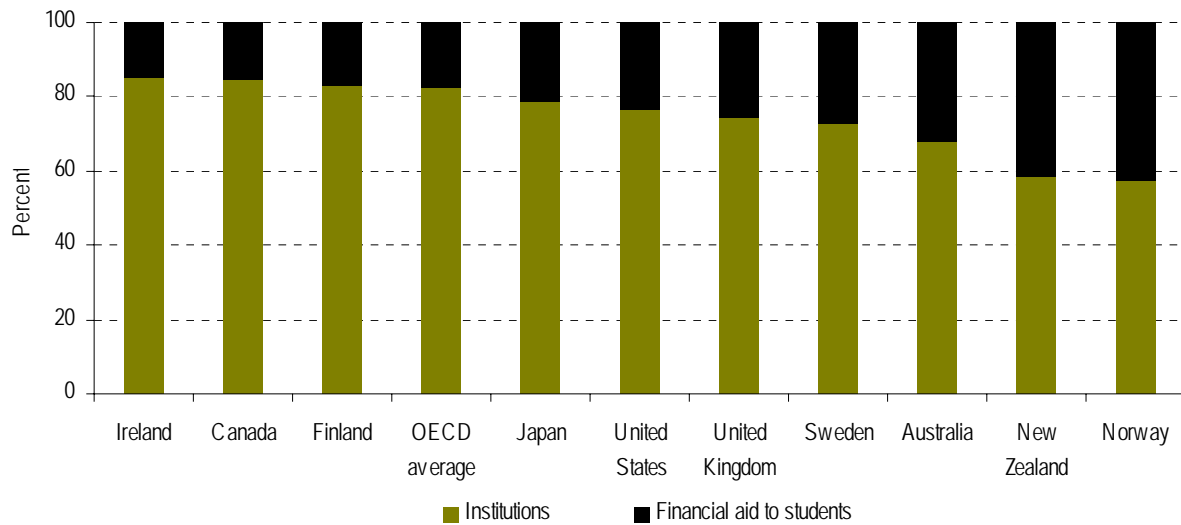
In 2005, subsidies to students accounted for 42 percent of government spending on tertiary education in New Zealand, the second highest of all OECD countries. OECD countries spend, on average, 18 percent of their public budgets for tertiary education on subsidies to students. This high proportion in New Zealand is intended to maintain the diversity and open access of the New Zealand tertiary education system. Subsidies to students are important, in order to provide students with access to tertiary education, regardless of their financial situation.

It should be noted that a proportion of the financial aid to students goes directly to institutions. In particular, the tuition fees paid through student loan borrowing is in effect a tuition subsidy directed through students. Adjusting for this effect and treating the money borrowed for fees as part of the funding for institutions, not funding for students, shifts the share of the whole paid to students and their families to around 23 percent of the total.



**Figure 22**

Distribution of government spending on tertiary education in 2005 for selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table B5.2.

Note: Financial aid to students includes the following categories: grants/scholarships; public student loans; family or child allowances contingent on student status; public subsidies in cash or in kind, specifically for housing, transportation, medical expenses, books and supplies, and social, recreational and other purposes; and interest-related subsidies for private loans.

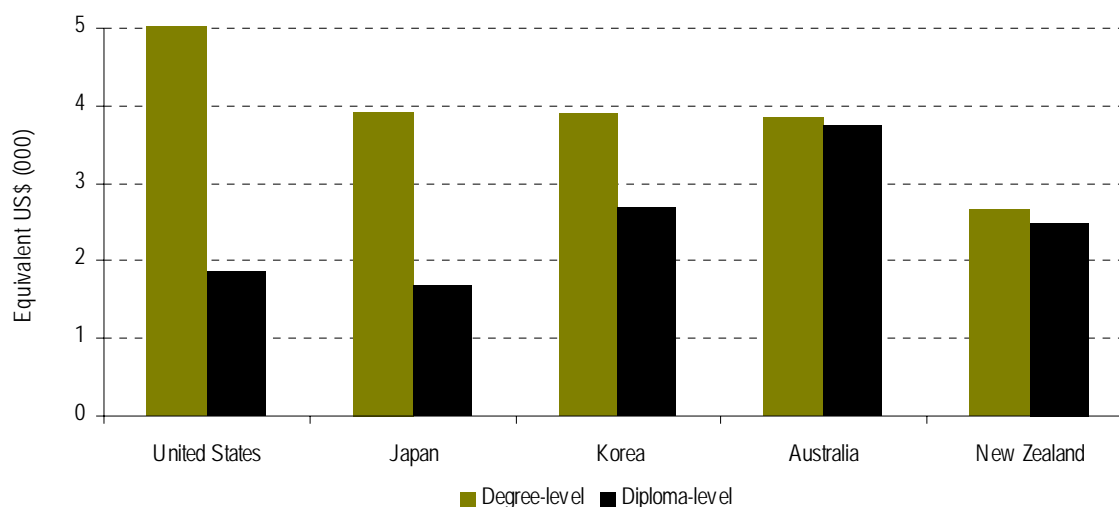
#### 4.5 How much do students pay?

Large differences can be observed among OECD countries in the average tuition fees charged by tertiary institutions in 2005. For degree-level programmes, New Zealand tertiary education institutions charged an average annual fee of US\$2,671, adjusted for purchasing power parity. There were no tuition fees charged for degree level qualifications by public institutions in eight OECD countries. The United States had the highest fee for degree programmes, US\$5,027.

The average fee charged for diploma-level programmes by New Zealand tertiary education institutions was US\$2,489. There were no tuition fees charged for tertiary-type B programmes by public institutions in six OECD countries. Australia had the highest fee for tertiary-type B programmes, US\$3,734.

**Figure 23**

Annual average domestic tuition fees in 2005 for selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table B5.1.

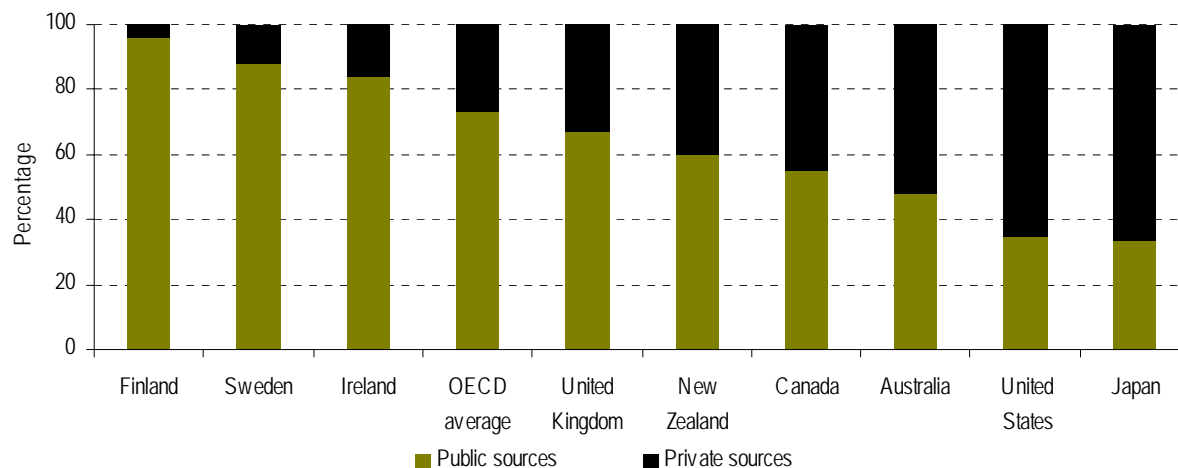
Notes:

1. This figure expresses annual average tuition fees per student in equivalent US dollars converted using purchasing power parities.
2. Amounts of tuition fees should be interpreted with caution as they result from the weighted average of the main tertiary-type A and tertiary-type-B programmes and do not cover all institutions.
3. Fees are for public institutions only.

In New Zealand, private expenditure accounted for 40 percent of total expenditure on tertiary education institutions in 2005. Private expenditure accounts for, on average, 27 percent of total expenditure on tertiary education institutions in OECD countries.

**Figure 24**

Proportions of public and private expenditure on education institutions in 2005 for selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table B3.2b.

Note: Private spending includes all direct expenditure on educational institutions, whether partially covered by public subsidies or not.

Note that expenditure from private sources includes tuition fees paid by international students. If we look at the balance between the fees paid by domestic students and subsidies paid by government, the student share of the full cost is around 30 percent. And of that 30 percent, much is paid by way of the compulsory fee entitlement in the Student Loan Scheme and hence, has a government subsidy. Allowing for that effect, and given that the government expects to pay for 40 cents in each dollar borrowed, the actual share of full cost borne by students reduces to around 21 percent.

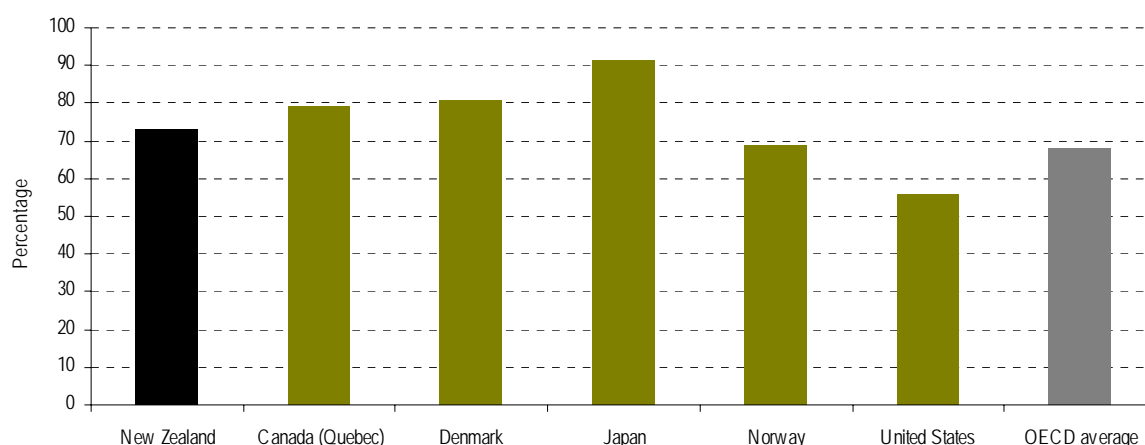
## 5. PART C: ACCESS TO EDUCATION, PARTICIPATION AND PROGRESSION

### 5.1 Access to tertiary education

The OECD's entry rate indicator places New Zealand very high for access to tertiary education. We rate highest in the OECD for our entry rate to diploma-level tertiary education and a little behind only Australia, Iceland and Sweden in the rate of entry to degrees<sup>5</sup>. However, the way the indicator is constructed means that countries that have a high proportion of older students and a high proportion of international students rate unrealistically high on this indicator. To illustrate the effects of these distortions, Iceland, one of the leading countries on entry to degrees, has a high proportion of older students and its student body the highest median age in the OECD<sup>6</sup>, while Australia, which has the highest entry rate, has a large percentage of international students. In the New Zealand data, when international students are removed, the entry rate to degrees falls from 72 percent to 58 percent.

**Figure 25**

Net entry rate to degree-level study, 2006, New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table A2.4 p68.

### 5.2 Enrolment rates in post-school education

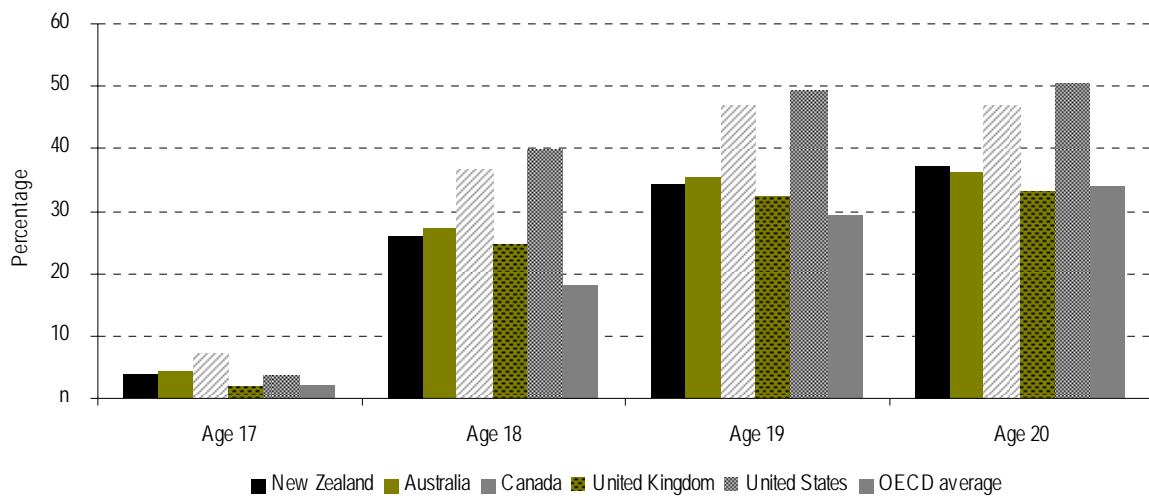
New Zealand has relatively high rates of enrolment in post-secondary education at all ages. The graph below compares our tertiary enrolment rates at ages 17, 18, 19 and 20 with other countries and with OECD means.

<sup>5</sup> Refer to table A2.4 and A2.5, pp 68-69.

<sup>6</sup> Table A2.4.

**Figure 26**

Enrolment rates in tertiary education in 2006 at ages 17, 18, 19 and 20 years, New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table C2.3, p345.

New Zealand is above the OECD mean at all ages, close to Australia, slightly ahead of the UK but below Canada and, except at age 17, the US.

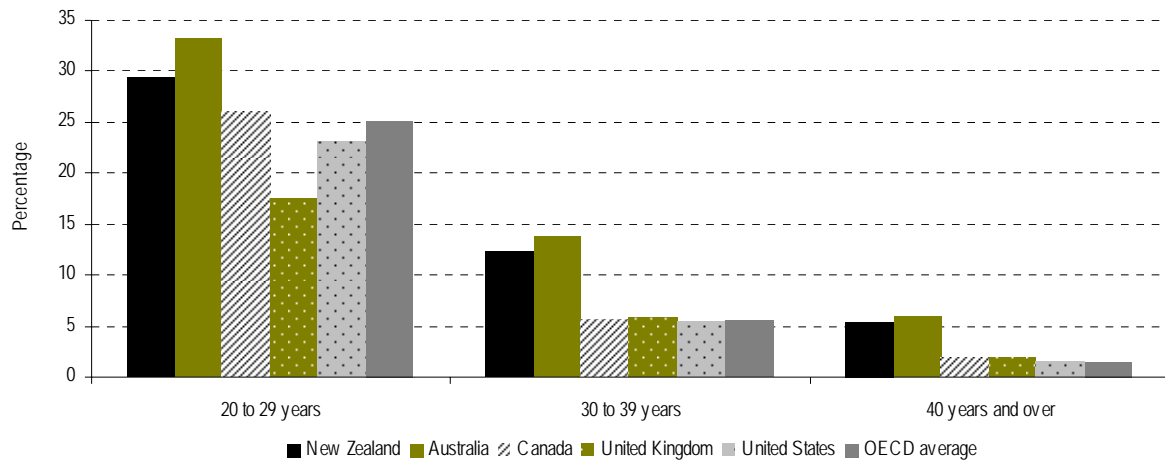
Likewise, in postsecondary, non-tertiary education, New Zealand's enrolment rate is ahead of the OECD mean at all of those ages.

However, in part, the reason for this apparent better than average performance is the higher propensity of people in New Zealand in 2006 to leave school at younger ages and, in many cases, to undertake post-school education instead. When one looks at the proportion of the population at those ages in secondary school, New Zealand is below the OECD mean. (Table C2.3).

At ages beyond 20, New Zealand's enrolment rates are also above the OECD average and slightly below Australia.

**Figure 27**

Enrolment rates in tertiary education in 2006 at ages 20 years and over, New Zealand and selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*.

New Zealand, like Australia, has a high proportion of part-timers among its students. (Table C2.5, page 347).

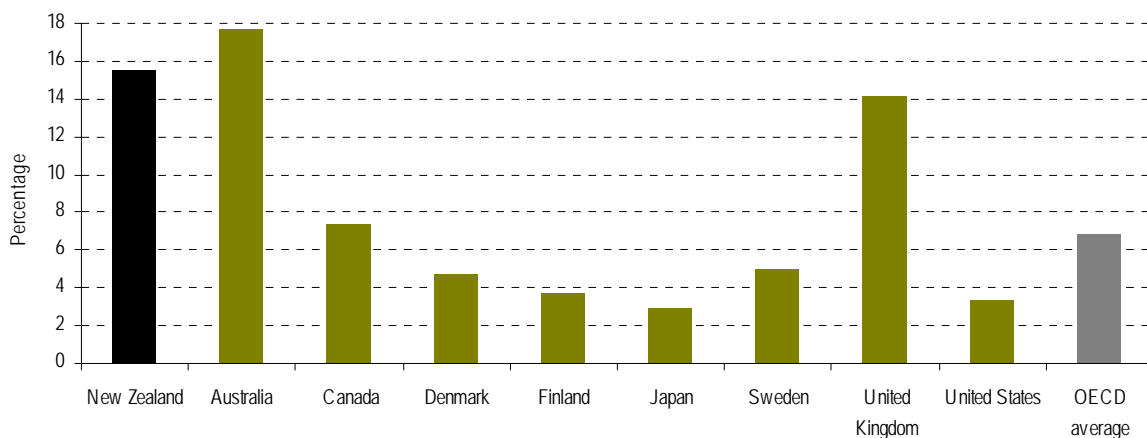
### 5.3 International students

At 15.5 percent, New Zealand was second only to Australia in 2006 in the percentage of tertiary students who are international students. Comparing 2006 with 2000, New Zealand had the highest growth rate in this indicator. Relatively, a high proportion of international students were studying at diploma level. (Table C3.4, page 371).

A relatively low number of New Zealanders are studying abroad as international students in other OECD and partner countries. (Table C3.2, page 367, 368). Unsurprisingly, nearly half of those who do so are studying in Australia, with the UK and the US between them accounting for more than a third. (Table C3.3, page 369,370).

**Figure 28**

Percentage of international students in tertiary education in 2006, selected OECD countries



Source: OECD (2008) *Education at a glance: 2008 OECD indicators*, Table C3.1, p366.



**MINISTRY OF EDUCATION**

*Te Tāhuhu o te Mātauranga*