



NEW ZEALAND  
**WORK RESEARCH INSTITUTE**  
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## The cost of poor transitions for youth

**Report prepared by Gail Pacheco\***

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## Introduction

The unemployment rate for young people aged 15-19 in New Zealand (NZ) is 23.6 per cent (as at June 2012)<sup>1</sup>. This is more than four times the unemployment rate for older workers, and more than three times the national unemployment rate of 6.6%. NZ also has a high rate of young people not in education, employment or training (collectively known as NEETs). There are 95,100 young people aged 15-24 who are NEET (as at March 2012), and this has grown 44% since data for this group was first collected by Statistics NZ in March 2004. NZ also has a youth NEET rate which is slightly higher than the OECD average (12.5% versus 12.2%), based on the most recent comparison available (2011). Since then, the NZ youth NEET rate has risen to 14.9% (March 2012)<sup>2</sup>.

There has been growing interest in the labour market issues that youth face and this has led to increased research on young NEET. Furthermore, the large numbers of young people who are NEET is a serious social and economic problem, as it signals the increasing number of youth that are struggling to make the transition from education into the labour market. Youth exclusion, disengagement, and overall underutilisation in the labour market may have both short term costs to the economy, and long term impacts on society – with fears of a ‘lost generation’ being the label placed on the increased NEET resulting from the recent global financial and economic crises (Statistics NZ, 2011). To address this problem, we first need to understand the scale of this issue in NZ (making use of available Statistics NZ data to ascertain the numbers of youth that are NEET<sup>3</sup>, and their characteristics), and the potential associated costs (both to the individual and to the economy). Some analysis of NEETs use the 16-18 age range, however we employ the broader definition of 15-24 year olds, as this captures the transition into the labour market at different points in an individual’s timeline. This is similar to analysis done by Sissons and Jones (2012), who focus on the 16-24 year bracket for the UK economy.

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<sup>1</sup> Source: Household Labour Force Survey. Series HLF031AA.

<sup>2</sup> Source: Household Labour Force Survey. Series HLF148AA.

<sup>3</sup> The NEET measure may be slightly overestimated if it includes individuals that are ‘in between’ activities for a short time period (e.g. having a holiday from study or employment, or just returned from or about to leave overseas). Nevertheless it is a very useful indicator of youth disengagement, and youth thought to be ‘lost in transition’.

This report is divided into two parts and attempts to answer following questions:

## **PART I:**

- (i) Are a growing number of young people NEET?
- (ii) What are the potential negative consequences of young people being NEET?

## **PART II:**

What is the estimated cost of young people lost in transition, in terms of:

- (iii) Youth NEET that are unemployed.
- (iv) Youth NEET that are inactive (i.e. neither employed nor in education).
- (v) Youth NEET that don't reach their educational potential and underachieve

[In all circumstances, the expected outcomes of the NEET group are compared to the comparable expectations of their non-NEET counterparts.]

To answer these five questions, this report makes use of data from Statistics NZ, who in 2011 recognised the need to construct NEET figures due to perceived limitations if only focussing on traditional youth labour-market indicators or unemployment, employment, and labour force participation rates. Statistics NZ construct relevant NEET figures for youth aged 15-19 and 20-24 from March 2004 onwards, with the most recent data available at the time of this research being March 2012.

While this report focuses on the issue of young people who are NEET, and their potential cost to the economy, it is important to note that this is not the only group that faces difficulties in transitioning from education to the labour market. Other research (e.g. Stillman & Maré, 2009; Department of Labour, 2011; Algan, et al, 2010) shows that migrants also have the potential to be excluded and experience a slow transition into the labour market. In particular, migrant workers appear to suffer an initial entry disadvantage into the workforce, and for those that successfully enter the labour market, wages take a long time to increase to the level of non-migrants (with comparable skill levels), if they ever do equate. For example, NZ research by Stillman & Maré (2009) compared the average real wage of migrants with no qualifications with natives between 2001 and 2006. Over this time, the average wage of a native increased by 7%, but there was no change for the average wage of a migrant that had lived in NZ for more than 10 years. Recent migrants (less than 10 years) did experience a 4% rise, but this sub-group still earned less than older migrants (\$14.16 compared to \$15.12 per hour).

## PART I

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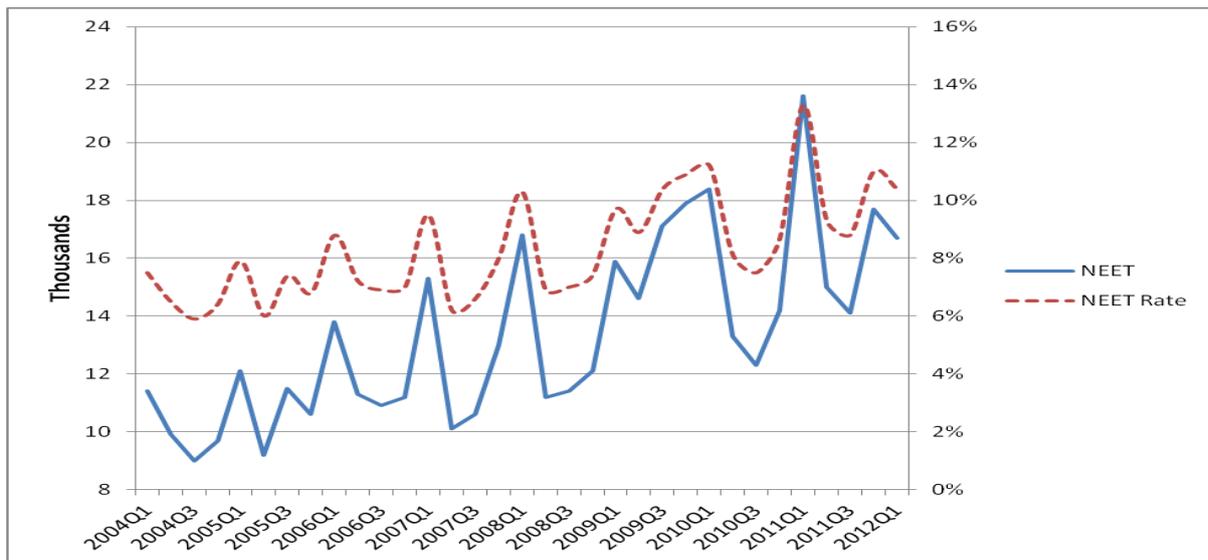
### Section 1.1 15-24 year old NEETs

NEET rates are a common measure of non-utilised youth labour market potential. The Department of Labour (2009) describes these rates as “*an indicator of youth disengagement from formal learning or employment*”, and that these individuals are “*missing the opportunity to develop their potential at an age that heavily influences future outcomes*”. The implication being that these young people face a higher probability of becoming disadvantaged or marginalised in both the medium and long term future.

NEETs and youth unemployment are related concepts, but there are some clear differences that need to be recognised, prior to the analysis of NEET trends in NZ. A person is officially unemployed in NZ if they do not have a paid job, were available for work, and had been actively looking for work in the previous four weeks. Therefore, the unemployment rate is a percentage of the economically active that are ready to work, but unable to find work in the last four weeks. This can therefore include individuals participating in education. In contrast, the definition of NEET is individuals who are not in employment, education or training, and may include some of the economically inactive.

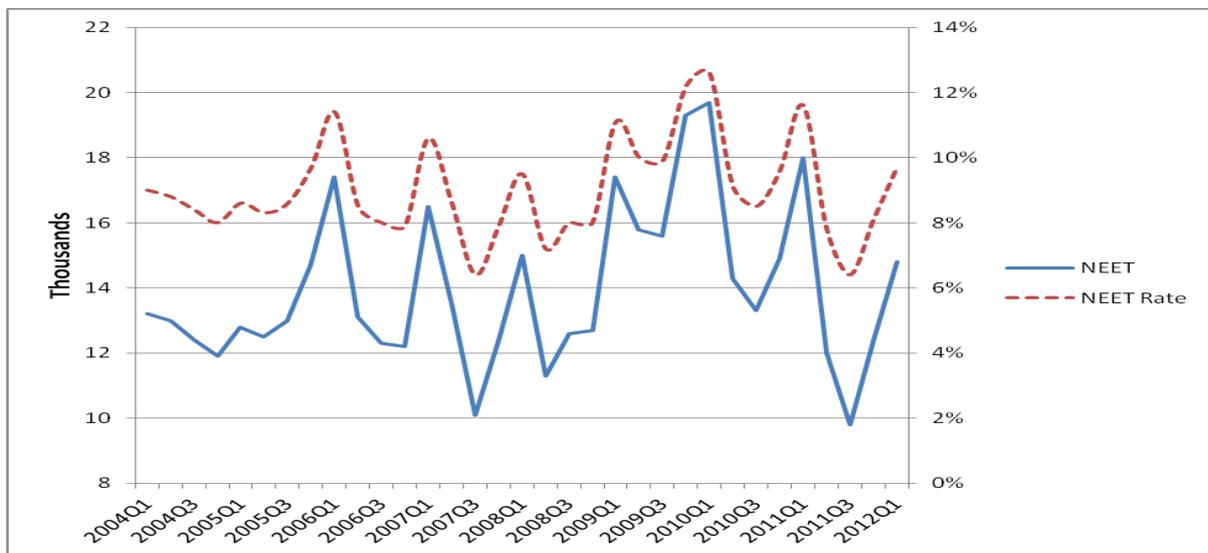
The overall group of 15-24 year olds that are NEET has increased by 44% between March 2004 and 2012 (from 65,900 to 95,100). While there appears to be a rise in the number of NEETs in times of recession, it is also clear that the upward trend in NEETs began well in advance of the recession that was instigated by the global financial crisis. The following figures (Figures 1 – 4) disaggregate 15-24 year old youth by age and gender to investigate any distinctive patterns over the sample period of 2004-2012.

Figure 1: Number of Male NEETs, 15-19 year olds.



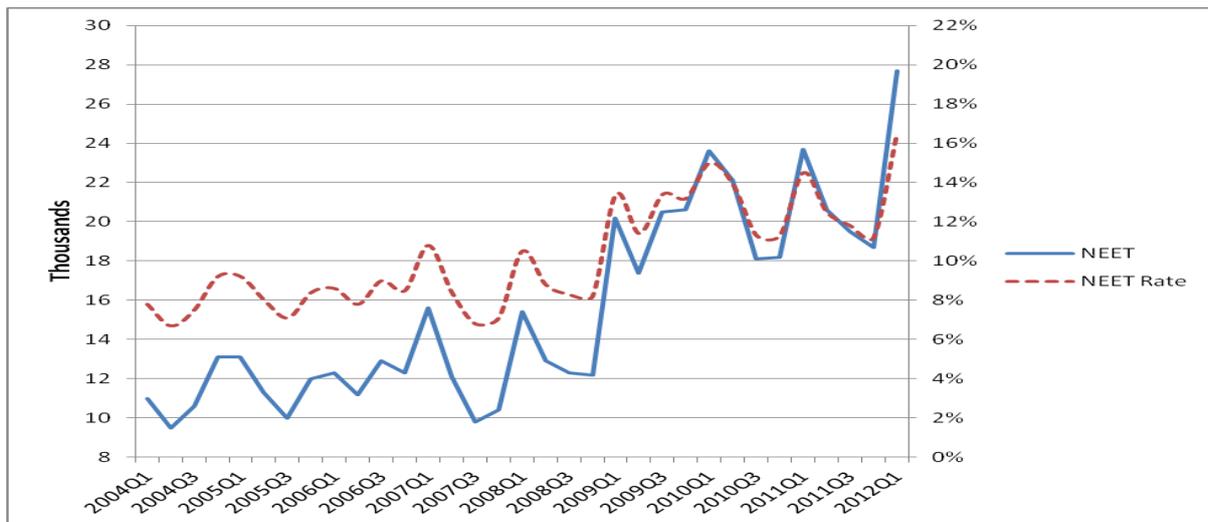
Source: Household Labour Force Survey.

Figure 2: Number of Female NEETs, 15-19 year olds.



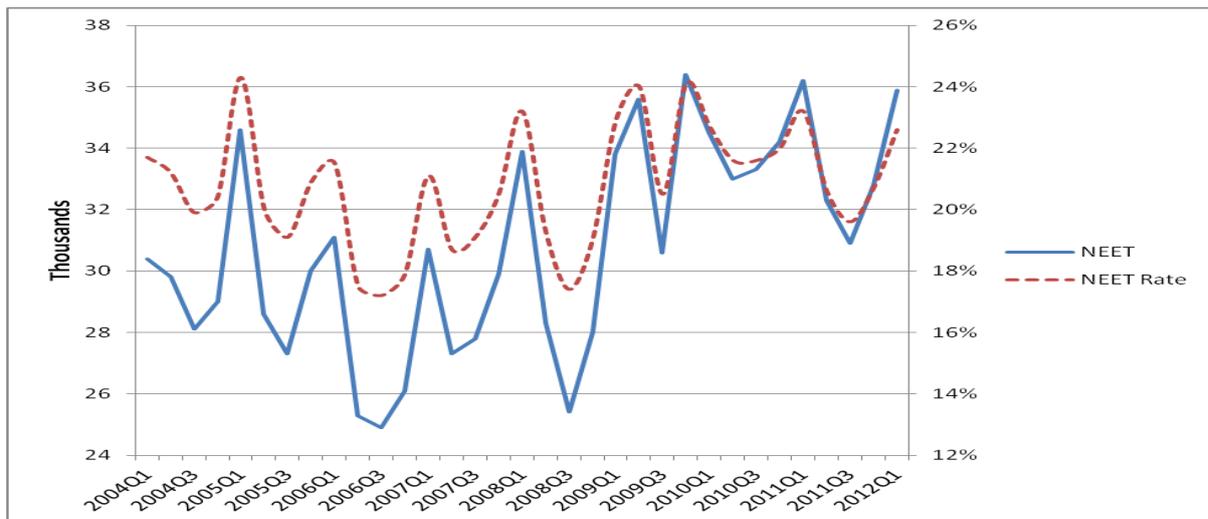
Source: Household Labour Force Survey.

**Figure 3: Number of Male NEETs, 20-24 year olds.**



Source: Household Labour Force Survey.

**Figure 4: Number of Female NEETs, 20-24 year olds.**



Source: Household Labour Force Survey.

All four figures point to seasonal fluctuations in NEET numbers – with drops in the NEET rate in quarter 4 (December) each year, and rises in quarter 1 (March) in many years. This is expected, given the rise in part-time and contract employment during the Christmas and summer season.

There are three key findings when viewing the analysis disaggregated by age and gender. Firstly, females appear to have a higher proportion of NEETs consistently over the sample period (the difference being greater for 20-24 year olds, versus 15-19 year olds), but the proportion has not

increased markedly over this time. The NEET rate for 15-19 and 20-24 year old females was 9% and 21.7% respectively at the start of 2004, and this increased marginally to 9.7% and 22.6% by March 2012. Secondly, and in contrast, the NEET rate for males is lower, but has experienced sizeable gains over the last eight years. For example, the NEET rate for 20-24 year old males has increased from 7.8% to 16.5% over this time period. Thirdly, it is important to note here that the NEET rate is usually lower for 15-19 year olds, relative to 20-24 year olds, as this age group will be more likely to have individuals participating in the education sector – especially since the compulsory school leaving age in NZ is 16. Unfortunately, Statistics NZ does not collect information on individuals that are NEET for the 16-19 age bracket.

## Section 1.2 Potential consequences of growing numbers of NEET

Major life transitions, such as that from education to the labour market, are known to be sensitive phases in an individual's lifetime. According to Heckhausen (2002), transition periods have the potential to amplify the effects of a range of socio-structural, institutional and individual forces, and that “*this is even more true for the transition from school to work*” (p. 174). While a period of no employment or education and training for young people will no doubt have costs borne by the individual themselves, there are also costs to society in terms of lost productivity, and wider social implications to also consider.

With respect to the young individual that is NEET, costs broadly include:

- (i) **Scarring** (in terms of future wage and employment prospects) – Gregg and Tominey (2005) find evidence in the UK of scarring in the form of persistently reduced wages stemming from an individual's youth unemployment experience. They find a sizeable wage scar for males and females at age 23, followed by a ten year recovery period, as long as no further unemployment spells are experienced. They also find evidence of a smaller residual wage scar of 8% that can persist for up to 20 years, even if there are no further unemployment experiences. Similar qualitative findings are in evidence from research in other countries, e.g. Cruces, Ham and Viollaz (2012) find strong and significant scarring effects for experiences of youth unemployment, as well as informality in the adult labour market (in Argentina and Brazil). In terms of NZ, Maloney (2004) finds clear

evidence of path dependence, in that indications of inactivity at an earlier age are associated with higher probabilities of inactivity at a later age.

- (ii) **Increased crime** – Higher rates of youth inactivity and unemployment are often seen as precursors to rising crime rates. Carmichael and Ward (2000) found a systematic positive relationship between burglary rates and male unemployment rates in England and Wales. While their results were irrespective of age, they did find a consistent and positive relationship between youth unemployment and criminal damage, and robbery rates. Additionally, Fergusson, Lynskey & Horwood (2006) made use of a NZ birth cohort sample (up to the age of 18), and found that an increase in the duration of unemployment was significantly associated with rises in youth offending.
  
- (iii) **Reduced quality of life** – Early research by Feather (1982) showed that unemployed individuals have higher depression scores and were lower in self-esteem. The impact of these psychological attitudes places an increasing burden on the immediate family of unemployed youth. For example, in a recent UK survey of young individuals, more than a quarter of those that had been unemployed said unemployment was a cause for arguments with family, and 10% said it drove them to drugs or alcohol<sup>4</sup>.

There is also ample evidence in NZ that links unemployment with a lower quality of life. For example, Fergusson, Horwood, and Lynskey (1997) examine the association between exposure to unemployment following school leaving and rates of psychiatric disorder using a NZ birth cohort (up to the age 18). They found that young people exposed to unemployment had higher rates of substance use and anxiety disorder. Additionally, Blakely, Collings, and Atkinson (2003) used census data from 1991 and found that being unemployed was associated with between a two to three-fold increase in the relative risk of suicide, compared with being employed.

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<sup>4</sup> The Prince's Trust (2010) YouGov Youth Index, The Prince's Trust.

## PART II

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The aim of this part of the report is to make use of available research and data to compute estimates of the associated costs for young people who are not in education, employment or training. As explained earlier, these individuals are lost in transition between their participation in education and the workforce. The focus of this section will be on **short term costs over a 1 to 3 year period**, although we will also draw on international estimates of what proportion short-term costs account for, relative to long-term impacts of the growing NEET problem. The following analysis will investigate both sides of the equation – lost productivity (proxied via foregone earnings), and the strain on the nation’s public finances. There are clearly other costs that are much harder to quantify, such as the impact on health, and crime. Therefore, the following estimated costs can be seen as a conservative figure.

Following Godfrey, et al. (2002), costs are defined as the excess cost of being in the NEET group compared to the hypothetical situation that these young New Zealanders had been able to experience lives as their non-NEET counterparts aged 15-24.

In the first quarter of 2012 there were **31,500 (63,600)** 15-19 (20-24) year olds classified as NEET. Based on estimates from the Household Labour Force Survey, 42.5% (43.9%) in the 15-19 (20-24) group were unemployed, 49.5% (25.6%) inactive and not engaged in caregiving, and 7.6% (30.5%) inactive and caregiving (of these almost all were women)<sup>5</sup>.

The structure of the remainder of this section is to therefore consider the costs for the different groups within youth that are NEET. Specifically, the groups are:

- (i) Unemployed,
- (ii) Inactive/not currently in the workforce, and
- (iii) Educational underachievement.

For each of these circumstances, we identify a list of potential costs incurred, and opportunity costs for foregone productivity. Wherever possible, we have drawn on relevant recent NZ estimates, and where this was not possible, extracted comparable figures from overseas research, and stated these assumptions.

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<sup>5</sup> Source: Household Labour Force Survey. Series HLF148AA. The percentages for the 15-19 age category don’t quite add to a 100% (specifically 99.68%), and we assume these are the result of rounding by Statistics NZ.

## Section 2.1 Unemployment

As at March 2012, unemployment accounted for 42.5% (43.9%) of NEET youths aged 15-19 (20-24). Unemployment is associated with a raft of potential negative consequences including poor health (e.g. Beland, et al., 2002; Gerdtham & Johannesson, 2003), depression (e.g. Dooley & Catalano, 1988; Dew, et al., 1992; Mathers & Schofield, 1998), and increased incidence of crime (e.g. Chiricos, 1987; Wu & Wu, 2012). There is also evidence to suggest that NEET young people remain in unemployment longer than others (e.g. Payne, 2000). Therefore, to estimate the cost of unemployed NEET young people in terms of foregone earnings and public finance costs, we need to estimate the excess length of time they are unemployed.

The average duration of unemployment in New Zealand is 25.5 weeks<sup>6</sup>. We assume that unemployed NEET individuals remain unemployed for 50% longer than the average (as followed by Godfrey, et al., 2002). We also assume that non-NEET 15-19 year olds do not experience unemployment, while 20-24 non-NEETs experience the average duration of unemployment. This gives excess durations (comparing NEET with non-NEET) in unemployment of 38.25 (12.75) weeks for 15-19 (20-24) year olds.

- 1) **Productivity Cost:** Average weekly earnings for men and women aged 15-19 (20-24) is \$96 (\$383)<sup>7</sup>.

### Foregone Earnings:

15-19 year olds: (38.25weeks @ \$96) \* (31,500\*0.425) = \$49,158,900

20-24 year olds: (12.75weeks @ \$383) \* (63,600\*0.439) = \$136,342,293

**Unemployed: Foregone Earnings Total: \$185,501,193**

<sup>6</sup> Source: Household Labour Force Survey. Series HLF076AA (March, 2012). It is the average duration of unemployment for the unemployed of all ages as data by age group is unfortunately not available.

<sup>7</sup> Source: Household Labour Force Survey – Income Supplement (June, 2012).

2) **Public Finance Costs:** As a result of lower earnings there is a loss in tax revenue (both income tax and indirect tax). A marginal income tax rate of 10.5cents (17.5cents)<sup>8</sup> per \$1 is assumed for foregone earnings for 15-19 (20-24) year olds. There are also lost ACC contributions<sup>9</sup> from the employee (employer) of 1.70% (1.15%) of every \$1 of taxable income not earned<sup>10</sup>. Davidson (2005) illustrates that indirect taxes account for approximately 15% of disposable income, on average, for household income deciles 1-5. We apply this to the earnings after income tax and ACC contribution deductions.

Unemployment benefit payments also need to be taken into account. We assume that the average net unemployment benefit received by individuals aged 18-19 is \$153.72<sup>11</sup>, while that for 20-24 year olds is \$170.80. Note that this analysis is only focussing on the unemployment benefit, and cannot include any additional supplementary benefits available to those unemployed, due to the lack of information on the number of NEET receiving additional benefits. Therefore, this serves as a useful juncture in this study to remember that the figures being estimated for cost associated with youth that are NEET are conservative in nature.

<b>Public Finance Cost Calculations:</b>	
Income Tax Revenue:	$(0.105 * 49,158,900) + (0.175 * 136,342,293) = \$29,021,586$
Lost ACC contributions:	$2.85\% \text{ of } \$185,501,193 = \$5,286,784$
Indirect Tax Revenue:	$15\% \text{ of } \$151,192,823 = \$22,678,923$
Benefit Payments:	
<u>15-19 Year Olds:</u>	$(38.25 \text{ weeks @ } \$153.72) * (31,500 * 0.425) = \$78,715,689$
<u>20-24 Year Olds:</u>	$(12.75 \text{ weeks @ } \$170.80) * (63,600 * 0.439) = \$60,802,255$
<b>Unemployed: Public Finance Cost Total: \$196,505,237</b>	

<sup>8</sup> These are the applicable marginal tax rates for the 2012/13 tax year for the income brackets of 'up to \$14,000', and 'from \$14,000 to \$48,000'.

<sup>9</sup> We assume that the ACC payouts (from the government) for workers and non-workers are equal. This assumption could of course be relaxed to test the robustness of our findings. For example, if we assume that the employer side of contributions to ACC account for the extra injuries and payouts by ACC for workers (relative to non-workers), then the lost ACC contributions would be \$5,360,899 rather than \$8,987,340. This is a difference of \$38.14 per capita in associated cost over the 1 to 3 year period.

<sup>10</sup> ACC levy charges are as at April 2012.

<sup>11</sup> This is the average of the 2012 net benefit rates for single 18-19 year olds at home and not at home with no children.

## Section 2.2 Inactive/Not in the Workforce

As indicated earlier, the proportion of NEET youth that don't fall into the unemployed category are inactive. This is split into those that are (i) engaged in caregiving (mostly women), and (ii) those that are inactive and not caregivers. The percentage of 15-29 (20-24) year old NEET youth that fall into these two categories are 49.5% (25.6%) and 7.6% (30.5%) respectively.

- 1) **Productivity Cost:** As shown in Section 2.1, not being employed is estimated to result in foregone earnings of \$96 (\$383) for 15-19 (20-24) year olds, when comparing NEET youth, with their non-NEET counterparts. Furthermore, as in Godfrey, et al. (2002), we assume that young parents that are NEET will be out of the workforce and education sector for 1.5 years (regardless of age group). We also assume that for other inactive youth (excluding NEET parents), that they will be out of the labour market for 1 year.

### Foregone Earnings:

#### Inactive, not engaged in caregiving:

15-19 year olds: (52 weeks @ \$96) \* (31,500\*0.495) = \$77,837,760

20-24 year olds: (52 weeks @ \$383) \* (63,600\*0.256) = \$324,264,346

#### Inactive, engaged in caregiving:

15-19 year olds: (78weeks @ \$96) \* (31,500\*0.076) = \$17,926,272

20-24 year olds: (78weeks @ 383) \* (63,600\*0.305) = \$579,495,852

**Inactive: Foregone Earnings Total: \$999,524,230**

- 2) **Public Finance Costs:** As with unemployment, foregone earnings results in lost income and indirect tax revenue, including ACC levies. The same assumptions as outlined in Section 2.1 are employed here, with regard to the relative direct and indirect fiscal incidence rates. We also assume that the net unemployment benefit received by young parents is the 2012 net benefit payable to solo parents of \$293.58<sup>12</sup>.

<sup>12</sup> Source: Work and Income NZ (See <http://www.workandincome.govt.nz/individuals/forms-and-brochures/unemployment-benefit.html#Payments5>)

**Public Finance Cost Calculations:**

Income Tax Revenue:  $(0.105 \times 95,764,032) + (0.175 \times 903,760,198) = \$168,213,258$

Lost ACC contributions:  $2.85\%$  of  $\$999,524,230 = \$28,486,441$

Indirect Tax Revenue:  $15\%$  of  $\$802,824,531 = \$120,423,680$

Benefit Payments:

15-19 year olds:  $(78 \text{ weeks @ } \$293.58) * (31,500 * 0.076) = \$54,820,781$

20-24 year olds:  $(78 \text{ weeks @ } \$293.58) * (63,600 * 0.305) = \$444,199,458$

**Inactive: Public Finance Cost Total: \$816,143,621**

## Section 2.3 Educational Underachievement

Sections 2.1 and 2.2 conducted cost analysis for the two categories of NEET youth (unemployed and inactive). However, it has only focussed on the lost earnings and associated public finance cost for the individual while unemployed or inactive. It is also necessary to factor in the lost productivity in educational underachievement, and interrupted work histories, which are the likely consequence of a period of unemployment and/or inactivity. When these individuals do return to the labour market, they may find work of a lower skill level than their non-NEET counterparts. This will result in reduced income, and a wage differential between youth workers that have had a period of being NEET (i.e. a long transition period into the labour market), versus those that have no NEET history (i.e. had a relatively smooth transition into the labour market). This wage differential can also be thought of in terms of lost economic output (i.e. productivity).

Evidence on the returns to education in terms of higher wages are well documented. Reviewing the international literature, Psacharopoulos and Patrinos (2004) find that the average rate of return for another year of schooling is slightly more than 6% per year in OECD countries. Examining annual wage differentials in New Zealand, Gibson (2000) shows a high return to academic credentials, particularly for ethnic minorities such as Maori and Pacifica<sup>13</sup>. He hypothesises that this wage effect is attributable to credentials signalling worker productivity to employers.

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<sup>13</sup> Additional NZ evidence confirming this relationship include studies by Brosnan (1984), Maani (1999), and Maani (2000).

- 1) **Productivity Cost:** Recent information from the Household Labour Force Survey (September 2011) indicates that 36.3% of NEET individuals aged 15-24 have no qualification, and an additional 32.3% have school only qualifications<sup>14</sup>. Therefore, we estimate 11,435 (10,175) individuals in the 15-19 NEET group have no (school only) qualifications, while analogous figures for those in the 20-24 NEET group are 23,087 (20,543) for no (school only) qualifications respectively. As indicated earlier based on information from the Household Labour Force Survey (March 2012), 42.5% (43.9%) of those in the 15-19 (20-24) NEET group are unemployed and the remainder are inactive (i.e. 57.5% and 56.1% respectively).

When comparing NEET across both age categories, we need to make assumptions regarding the average level of qualifications for each age group, and the likely qualifications for their non-NEET counterparts. For example, for those with a qualification in the 15-19 year old NEET group, we assume this is 5<sup>th</sup> form, and that their relative counterparts in the non-NEET group have at least sixth-form school certificate<sup>15</sup>. Making a realistic assumption about the highest qualification of the 20-24 non-NEET group is more difficult. Consequently, we base wage differential calculations for 20-24 NEET individuals with at least school qualification relative to average national wages<sup>16</sup>. As with the 15-19 year old NEETs, no qualification is compared relative to those with 6<sup>th</sup> form.

As shown in Section 2.1, unemployment is estimated to result in foregone earnings of \$96 (\$383) per week for 15-19 (20-24) year olds. Individuals with no qualification earn 68% of the average wage of individuals with 6<sup>th</sup> form (i.e. a 32% differential). Those with school qualifications are expected to have an 8% differential for 15-19 year olds, and 24% differential for 20-24 year olds<sup>17</sup>.

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<sup>14</sup> Figures obtained from the Household Labour Force Survey, September 2011. Retrieved from [http://www.stats.govt.nz/browse\\_for\\_stats/income-and-work/employment\\_and\\_unemployment/NEET-paper.aspx](http://www.stats.govt.nz/browse_for_stats/income-and-work/employment_and_unemployment/NEET-paper.aspx)

<sup>15</sup> While there are no publicly available official statistics on the age breakdown of 15-19 year old NEETs, it is unlikely that there will be a lot of 15 year olds, given the compulsory school leaving age of 16 in NZ. A Department of Labour (2009) report indicates the approximate NEET rate for 15 year olds is 1%.

<sup>16</sup> Average wage is based on an aggregate of all individuals across the educational qualification spectrum.

<sup>17</sup> The 8% differential for 15-19 year olds is based on the fact that those with 5<sup>th</sup> form each 92% of the average wage of those with 6<sup>th</sup> form; and the 24% wage differential for 20-24 year olds is based on the fact that individuals with a school qualification has their highest level of education achieved earn on average 76% of the average national wage (Information from the 2012 Income Survey, Statistics NZ).

Finally, we assume that those who are NEET and unemployed in the 15-19 (20-24) age group experience the wage differential for 18(12) months, while those that are NEET and inactive experience the differential for 21(15) months<sup>18</sup>.

### **15-19 Wage Differentials:**

No Qualification: 32% of \$96 = \$30.72

Unemployed: 18 months (78 weeks @ \$30.72) = \$2,396

Number of NEET unemployed =  $(11,435 * 0.425) = 4,860$

4,860 people \* \$2,396 = **\$11,644,560**

Inactive: 21 months (91 weeks @ \$30.72) = \$2,796

Number of NEET inactive =  $11,435 * 0.575 = 6,575$

6,575 people \* \$2,796 = **\$18,383,700**

School Qualification: 8% of \$96 = \$7.68

Unemployed: 18 months (78 weeks @ \$7.68) = \$599

Number of NEET unemployed =  $10,175 * 0.425 = 4,324$

4,324 people \* \$599 = **\$2,590,076**

Inactive: 21 months (91 weeks @ \$7.68) = \$699

Number of NEET inactive =  $10,175 * 0.575 = 5,851$

5,851 people \* \$699 = **\$4,089,849**

### **20-24 Wage Differentials:**

No qualification: 32% of \$383 = \$122.56

Unemployed: 12 months (52 weeks @ \$122.56) = \$6,373

Number of NEET unemployed =  $23,087 * 0.439 = 10,135$

10,135 people \* \$6,373 = **\$64,590,355**

Inactive: 15 months (65 weeks @ \$122.56) = \$7,966

Number of NEET inactive =  $23,087 * 0.561 = 12,952$

12,952 people \* \$7,966 = **\$103,175,632**

School Qualification: 24% of \$383 = \$91.92

Unemployed: 12 months (52 weeks @ \$91.92) = \$4,780

Number of NEET unemployed =  $20,543 * 0.439 = 9,018$

9,018 people \* \$4,780 = **\$43,106,040**

Inactive: 15 months (65 weeks @ \$91.92) = \$5,975

Number of NEET inactive =  $20,543 * 0.561 = 11,525$

11,525 people \* \$5,975 = **\$68,861,875**

**Underachievement: Foregone Earnings Total: \$316,442,087**

<sup>18</sup> Godfrey, et al (2002) employ comparable figures in their analysis of 16-18 year old NEET in the UK.

- 2) **Public Finance Cost:** As with educational underachievement, unemployment results in lost income and indirect tax revenue, including ACC levies. The same assumptions outlined for underachievement are used here.

**Public Finance Cost Calculations:**

Income Tax Revenue:  $(0.105 \times 36,708,185) + (0.175 \times 279,733,902) = \$52,807,792$

Lost ACC contributions:  $2.85\% \text{ of } \$316,442,087 = \$9,018,599$

Lost Indirect Tax Revenue:  $15\% \text{ of } \$254,615,696 = \$38,192,354$

**Underachievement: Public Finance Cost Total: \$100,018,745**

## Section 2.4 Total Cost & Conclusions

Given the figures computed in Sections 2.1 through to 2.3, we project that the loss to productivity (measured via foregone expected earnings) of the current youth NEET cohort in the short term (over the next 1 to 3 years) is \$1,501,467,510. Further, the expected cost to public finances for this NEET group is \$1,112,667,603 over the same short term time frame.

The sum of these figures equates to a **per capita cost of \$27,488.28** (based on the current sample of 95,100 NEET youth) over the next 1-3 years.

This study has not estimated the medium or long term costs of this NEET group. For example, Godfrey, et al (2002) computes associated costs (for NEET youth aged 16-18 in the UK) for the medium term of 40 years, and long term costs in terms of pension differentials. It is interesting to note that the present value of these future costs calculated was approximately nine times that of short term costs (with respect to both the productivity cost and the public finance cost). If we assume the same differential, then the present value of life time costs per capita of NEET youth is just under a quarter of a million (at \$247,394).

It is imperative to note a couple of caveats in this conclusion. Firstly, when calculating public finance costs for each circumstance within the youth NEET group, we need to assume that there is no overall loss of tax revenue to the NZ Inland Revenue Department, i.e. that the value of employer tax deductions associated with additional salary/wage cost (incurred when some NEET become employed) is equal to the value of additional taxable income (generated from

additional revenue earned by employers from the productive economy). Secondly, this study does not include additional costs from the impacts of potentially higher crime rates, poorer health outcomes, etc. For example, Godfrey, et al (2002) estimate these costs for both the short and medium term, including the potential cost of increased substance abuse. Such additional costs are possible future directions for this research.

Another future research avenue is to conduct such analysis for particular ethnic groupings, when such data is made available by Statistics NZ. A report by the Department of Labour (2009) indicates that NEET rates are considerably higher for Maori and Pacific Islander youth, relative to youth that are Pakeha. Another possible future research exercise is to investigate predictors of becoming NEET when aged 15-19 or 20-24. Such analysis would require appropriate panel data from a cohort, but would be useful to designing early policy interventions.

In conclusion, the research carried out in this study has estimated the expected costs of youth disengagement, for NEET aged 15-24. It has revealed the sizeable cost associated with poor transition between education and the labour market. Future work could directly cost any policy interventions to help youth at this stage in their lifetime, as well as assess the capacity in the economy for youth to become non-NEET.

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