

**Motu Note 50**

# How do childcare access issues affect mothers' work in the long term?

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## **Document information**

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### **Disclaimer**

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## **Abstract**

This is the final report in a series of five reports that together use the Growing Up in New Zealand (GUiNZ) longitudinal survey data to explore how the inability to access affordable childcare affects the long run labour market outcomes of mothers. This report investigates the relationship between issues with access to childcare in the child's first two years and mothers' paid work when the child is nearly school-aged.

Thirteen percent of GUiNZ mothers report at either 9 months or 2 years that their child is not in childcare because of access issues; this rises to 16% of Māori mothers and 21% of Pasifika mothers. Mothers with a history of access issues have weaker labour market outcomes at 54 months than do mothers who always used childcare even after we control for a wide range of personal and antenatal work characteristics. Specifically, they are less likely to want to work, less likely to have a job, less likely to have a high-skill job, and less likely to work full time. However, mothers who experienced access issues have similar work outcomes to mothers who did not use childcare for other reasons. These results are consistent with a weak work history, no matter its cause, making it more difficult for a mother to get a good job. However, we can't rule out unobservable differences between mothers with different childcare histories driving some of the results.

When we make varying assumptions about how childcare use would change if childcare access issues were eliminated, we estimate removing access issues in children's first two years could increase the proportion of mothers with jobs at 54 months by between 0 and 2 percentage points overall, between 0 and 3 percentage points for Māori mothers, and between 0 and 4.5 percentage points for Pasifika mothers.

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## **1 Introduction**

When New Zealand parents are unable to find suitable, affordable childcare, it is disproportionately the mothers who take time out of the labour force to care for the children. This inevitably reduces mothers' labour supply, and has the potential to negatively affect their careers in the long term, for instance, if their human capital erodes while they are not working.

This is the final report in a series of five reports that together use Growing Up in New Zealand data to explore how the inability to access affordable childcare affects the long run labour market outcomes of mothers. The first two reports investigated how common issues with access to childcare are, who experiences such issues, and how persistent these issues are. The third report showed how use of and experiences with childcare differ by ethnicity and for families that previously had trouble accessing affordable childcare. The fourth report investigated how mothers' work status and work characteristics differ by their childcare situation, particularly by whether they are unable to access affordable childcare, and estimated the cost to the economy in terms of lost earnings of a lack of access to affordable childcare. This final report investigates how access to childcare issues are related to mothers' labour market outcomes in the long term.

Throughout this report, our focus is on mothers' paid work and its relationship with childcare. For conciseness, we refer to this as "work", while acknowledging that parenting is also real and valuable work, though unpaid.

The next section outlines the policy environment faced by the cohort of children studied. Section 3 gives a brief description of the data, construction of the sample used in this report, and the main variables of interest. Section 4 describes our empirical approach to estimating how lack of access to childcare affects mothers' work outcomes in the long run and the limitations of this approach. Section 5 presents two sets of analysis. The first explores for the full population how the mother's work situation at 54 months differs by whether she experienced childcare access issues at 9 months or 2 years. The second repeats a subset of the analysis separately for each major ethnic grouping. The final section discusses the interpretation of the findings.

## **2 Policy setting**

The children studied in this report were born between April 2009 and March 2010. The focuses of the report are their childcare situations at 9 months old, which was approximately during the 2010 calendar year, and 2 years old, which was between April 2011 and March 2012, and their

mothers' work statuses at 54 months old, which was between October 2013 and September 2014.

The parents of these children were eligible for a maximum of 14 weeks of paid parental leave (PPL), the value of which was equal to their pre-birth weekly earnings, capped at the average New Zealand wage.<sup>1</sup> PPL has subsequently increased, reaching 26 weeks in June 2020.<sup>2</sup> These changes may have affected the parental leave decisions of later cohorts of mothers, but because PPL is still only 6 months, their effects on mothers' work and childcare at 9 months and 2 years are likely to be limited.

At both 9 months and 2 years, the children were too young to be receiving the universal 20 Hours ECE subsidy for attending early learning services, but they could have been receiving it at 54 months; this subsidy is available for children aged three to five only. Additionally, low income parents in the cohort studied could have been eligible for the Ministry of Social Development's (MSD) Childcare Subsidy, which is administered through Work and Income. This income-tested subsidy is available for children who are not yet of school age who attend an approved early childhood programme for at least three hours per week.<sup>3</sup> While the 20 Hours ECE subsidy is automatically applied, parents must know about the MSD Childcare Subsidy and manually apply for it. Prior studies show not all eligible parents know about this subsidy, and among those who do, the bureaucracy that must be dealt with to get it can be a major barrier.<sup>4</sup>

### **3 Data**

#### **3.1 Growing Up in New Zealand longitudinal survey**

This report uses data from the Growing Up in New Zealand (GUiNZ) survey run out of the University of Auckland. This longitudinal survey focuses on 6,846 children born in the Auckland, Waikato, and Counties-Manukau regions in April 2009 to March 2010 and their families. The participating families were selected to be roughly ethnically and socioeconomically representative of the overall New Zealand population. Further details of the study can be found in Morton et al. (2013).

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<sup>1</sup> Forbes (2009).

<sup>2</sup> <https://www.business.govt.nz/news/paid-parental-leave-changing-2020/> accessed 21 September 2021.

<sup>3</sup> <https://www.workandincome.govt.nz/products/a-z-benefits/childcare-subsidy.html> accessed 21 September 2021.

<sup>4</sup> Statistics New Zealand (2017).

## 3.2 Sample construction

Because the focus of this research is mothers, all analysis is at the family level, meaning multiple births to one mother are combined into one observation. Analysis is limited to the sample of families that meet several criteria:

- the mother was present in the antenatal survey (conducted approximately 3 months before the child's due date);
- the same mother was present in the antenatal, 9-month, 2-year, and 54-month surveys;
- the childcare situation at 9 months, 2 years, and 54 months is fully known (whether the child was in regular childcare, if so then the number of hours of care each week, and if not then the main reason why not);
- the mother's work situation at 54 months (whether the mother was working, and if not then the main reason why not);
- whether the mother worked antenatally and if so the number of hours per week she worked are known.

Table 1 compares the characteristics of all GUiNZ mothers (first column), those present in the first three surveys plus the 54-month survey (second column), and the analysis sample as described above (third column). The 6,821 mothers in the full GUiNZ sample fall by 1,097 to 5,724 mothers who are present in the first three survey waves plus the 54-month survey, and by another 673 to the analysis sample of 5,051 for whom sufficient information on childcare and work situations is available.

Table 1 shows mothers in the analysis sample are relatively similar to the full GUiNZ population in terms of age, whether the GUiNZ child was their first child, and deprivation index. However, the ethnic breakdown of the samples is quite different. Mothers who identify most strongly as European constitute 52.9% of the full GUiNZ population compared with 59.9% of the analysis sample, those who identify as Māori constitute 13.9% of all GUiNZ mothers and 12.4% of analysis mothers, and those who identify as Pasifika constitute 14.7% of all GUiNZ mothers and 12.9% of analysis mothers. Mothers in the analysis sample are also disproportionately likely to live with a partner, 91.7% compared with 90.4% of the full population.

Table 1: Characteristics of full GUiNZ population and analysis sample

	All GUiNZ mothers	Mothers present in antenatal, 9-month, 2-year, and 54-month surveys	
		All	With non-missing childcare and work information
Mother's age	30.0	30.5	30.5
First child	41.8%	42.2%	42.1%
Mother's self-prioritised ethnicity:			
European	52.9%	58.5%	59.9%
Maori	13.9%	12.8%	12.4%
Pasifika	14.7%	11.9%	11.4%
Asian	14.7%	13.3%	12.9%
MELAA	2.1%	1.8%	1.8%
Other ethnicity	0.2%	0.2%	0.2%
New Zealander	1.2%	1.3%	1.3%
Missing ethnicity	0.3%	0.3%	0.1%
Mother lives with a partner	90.4%	91.8%	91.7%
Partnership status missing	9.6%	9.6%	0.3%
Deprivation Index	6.0	5.8	5.8
Observations	6,821	5,724	5,051

Notes: Antenatal characteristics of mothers in the full GUiNZ sample, sample linked between first three survey waves and 54-month wave, and analysis sample.

Some of the analysis restricts the analysis sample further to mothers who were working antenatally in a known occupation.

### 3.3 Main variables of interest

#### 3.3.1 Childcare situation at 9 months and 2 years

One of the main variables of interest in this report is childcare situation at 9 months and at 2 years. In each of the 9-month and 2-year survey waves, children are classified by whether they are in regular childcare, and if they are not in regular childcare then whether this is due to cost or access issues. The regular childcare can be formal or informal, and includes care by relatives or friends. It excludes only care by the mother or her partner.

At 9 months, a child is classified as not being in care due to access issues if their main reason for not being in regular childcare is (i) cost, (ii) no spare places, (iii) not available when I need it, (iv) transport difficulties, (v) not available locally, (vi) poor quality of care, or (vii) does

not suit our beliefs. At 2 years, the wordings on some of these options have been cosmetically altered, and health concerns is an additional option.

Childcare situation at these two ages is summarised using three categories:

- 1) Not in childcare due to cost or access issues at 9 months and/or 2 years;
- 2) Never out of childcare due to cost or access issues, but not in childcare at 9 months and/or 2 years; and
- 3) In childcare at both 9 months and 2 years.

Categories 1 and 2 combined constitute all children who were out of childcare at either 9 months or 2 years.

### 3.3.2 *Mother's work situation at 54 months*

We analyse as outcomes a number of characteristics of the mother's work situation at 54 months.

**Mother wants (or has) a job at 54 months:** A mother might be not working either because she doesn't want to work or is not available to do so, or because she wants and is available to work but can't find a job. Her earlier childcare situation could affect both her desire to work and her ability to work. To examine how earlier childcare access issues affect a mother's desire to work, we first examine the relationship between access issues and whether a mother has or wants a job. We classify mothers as wanting a job if they a) are working, b) are searching for a job, or c) do not have a job and state the main reason for this that there are no jobs available, they can't find a job that interests them, or they can't find a job with enough flexibility. Discouraged jobseekers are thus classified as wanting a job but not working.

**Mother has a job at 54 months:** A basic measure of a mother's success in the labour market is whether she can find a job. We thus examine the relationship between earlier childcare access issues and the mother having a job at 54 months. Note this measure abstracts from the fact a person might be offered a job but not take it because it is unsuitable or undesirable in some way.

**Mother has a job at 54 months that is of equal or higher occupational rank compared with her antenatal job:** If a mother is out of work for an extended period of time, her human capital may depreciate, or employers might interpret the gap in her work as a signal of low commitment to the labour force. Either of these factors may limit her ability to get as high-skill a job as she had previously. To test whether childcare access issues affect a mother's ability to get a *good* job, we compare the occupational rank of the mother's job at 54 months, if any, with the

occupational rank of her antenatal job.<sup>5</sup> Both antenatally and at 54 months, the GUiNZ survey provides information on the mother's occupation, the options being: managers; professionals; technicians and trades workers; community and personal service workers; clerical and administrative workers; sales workers; machinery operators and drivers; and labourers. Based on average earnings of mothers in each occupation antenatally, we first rank the occupations. Highest ranked are managers, followed by professionals. Equal next are technicians and trades workers, community and personal service workers, clerical and administrative workers, sales workers, and machinery operators and drivers, and lowest ranked are labourers. We then compare the occupational rank of the mother's antenatal job with that of her job at 54 months. This variable is defined only for mothers who had a job antenatally. Those who do not have a job at 54 months are considered to not have a job of equal or higher occupational rank as antenatally.

**Mother works 30 or more hours per week at 54 months:** Mothers may work part time because this fits better with their preferences or parental responsibilities, or because they can't find a full-time job that accommodates raising a child. In either case, part time work results in lower weekly earnings, which raises the risk of material deprivation and low wellbeing.

## **4 Empirical strategy**

Our research question asks how a lack of access to affordable childcare when a child is young affects the work status of their mother when they are nearly school aged. A mother with childcare access issues may not be able to work for some time, which could cause her human capital to depreciate. Even if she can work, the type of work she can do may be limited, reducing her access to high-skill jobs, desirable employers, or career advancement. A long period out of work may be taken as a signal of low attachment to the labour market, again limiting a mother's future job prospects. Besides affecting a mother's ability to secure paid employment, taking time away from work may affect her desire to work, for instance, if she discovers the satisfaction of staying home to raise children.

The causal effect of a lack of access to affordable childcare is challenging to identify because a lack of childcare access does not strike mothers randomly; rather, those who are already disadvantaged in certain ways are more likely to experience access issues. We regress characteristics of mothers' work at 54 months on childcare access issues at 9 months and 2 years, and address the identification challenge primarily by progressively adding controls for a

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<sup>5</sup> Information on personal income is available antenatally but not at 54 months, so we can't examine changes in earnings.

wide range of mother's characteristics, including detailed information about her antenatal work situation. We repeat some of the regression analysis separately by ethnic grouping to verify whether similar relationships hold for the different ethnicities.

Some of our specifications control for a limited range of characteristics of the mother's situation at 9 months and 2 years. We do not include a wide range of characteristics here because of the risk that maternal circumstances at these ages could be affected by a contemporaneous lack of access to childcare.

We do not control for the mother's work situation at 9 months or 2 years. A major way we expect a lack of access to childcare to affect a mother's work in the long run is through affecting her work in the short run, so controlling for work at 9 months or 2 years would cause us to underestimate the relationship between a lack of access to childcare and long term work outcomes.

As explained in Section 3.3.1, we categorise mothers by whether their children are ever not in childcare due to access issues at 9 months or 2 years, and if not whether they are ever not in childcare for other reasons at either of these ages. Our first set of regressions compares mothers of children ever not in childcare due to access issues with all others; our second set compares these same mothers with mothers of children who are ever not in childcare for other reasons, and with mothers of those who are always in childcare.

Interim report 3 showed that mothers who experience childcare access issues at 9 months or 2 years have different average use of and experience with childcare at 54 months to observably similar mothers who did not have childcare access issues. This could suggest unobservable factors that caused the access issues in early years are still present and affecting the mother's options in later years. We can't fully disentangle such effects from the effects of childcare access issues early on.

Another limitation of this analysis is that we know only the main reason a child is not in childcare. This means some children who are categorised as not in childcare for non-access reasons also have access issues, though we cannot observe these. Similarly, some children categorised as not in care due to access issues would not be in care even if these issues were resolved, because there are additional reasons they are not in childcare. Caution must therefore be taken in interpretation of the results.

## **5 Results**

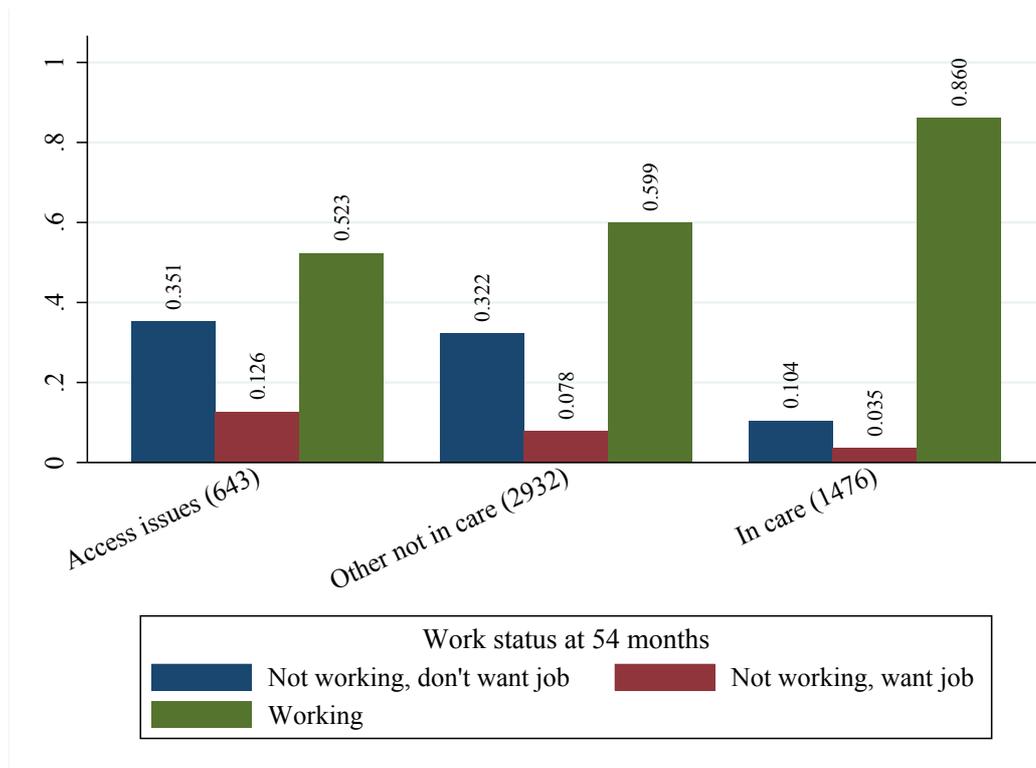
In section 5.1 we use graphs and regression analysis to show how mother's work situation at 54 months differs with earlier childcare access issues for the full population. In section 5.2 we

replicate a subset of the analysis separately for mothers who report belonging to each common ethnic grouping.

### 5.1 Full population

Figure 1 shows the distribution across work statuses at 54 months of mothers who were previously in different childcare situations. The left hand set of bars show that 643 mothers had a child not in care due to access issues at 9 months, 2 years, or both. Among these mothers, at 54 months 35% were not working because they did not want a job, 13% wanted a job but did not have one, and 52% were working.<sup>6</sup>

Figure 1: Mother's work status at 54 months by childcare situation at 9 months and 2 years



Notes: This figure shows, among mothers in each childcare situation at 9 months or 2 years (described under the horizontal axis along with the number of mothers), the proportion in each work situation at 54 months (explained in the legend, with the proportion given above each bar). Mothers are categorised as having “access issues” if their child was not in care due to access issues at 9 months, 2 years, or both; they are categorised as “other not in care” if their child was not out of care due to access issues at either 9 months or 2 years, but was out of care for other reasons in at least one of these survey waves; and they are categorised as “in care” if their child was in childcare at both 9 months and 2 years.

<sup>6</sup> Wanting is a job but not working is not the same as being unemployed because mothers who want a job are not required to be searching for and available to start work.

The central set of bars in Figure 1 show that 2,932 mothers never declared having childcare access issues, but had a child not in care for other reasons at 9 months, 2 years, or both. Compared with mothers with a history of childcare access issues, these mothers were similarly likely to not want a job (32%), somewhat less likely to want a job but not have one (8%), and more likely to be working (60%).

The final set of bars in the figure describes the 1,476 mothers whose children were always in childcare. These mothers were less likely at 54 months to be not working for either reason (10% of these mothers did not want a job and 4% did but didn't have one) and much more likely to be working (86%).

Overall, this figure suggests substantial differences in work outcomes between mothers who experienced childcare access issues and those whose children were always in care, but relatively small differences between those with access issues and those who kept their children out of childcare for other reasons. However, these differences and similarities could result from the different characteristics of the mothers who found themselves in these childcare situations, rather than from the childcare situations themselves. We next explore this possibility through regressions that control for a wide range of maternal and family characteristics.

Panel A of Table 2 presents the results of ordinary least squares (OLS) regressions of a dummy variable for the mother wanting (or having) a job at 54 months on her earlier childcare situation. The table shows that 74.6% of mothers had or wanted a job at this stage. In the first column, we compare mothers who previously experienced childcare issues with all those who did not and do not include any additional controls. We see mothers who had access issues are 9.6 percentage points less likely than other mothers to want to be working at 54 months, and this difference is statistically significant. As we add controls in columns (2) to (4), this difference decreases to 2.8 percentage points and becomes statistically insignificant.

However, this comparison doesn't distinguish between mothers who didn't use childcare for reasons unrelated to access and those who did use childcare. In columns (5) to (8) we compare all three types of mother. In the column (5) specification with no additional controls, we see mothers whose children were out of childcare at 9 months or 2 years are substantially and significantly less likely to want to work at 54 months. The regression also shows mothers whose children were out of childcare due to access issues are not significantly different to those whose children were out of childcare for other reasons.

**Table 2: Mothers are less likely to work at 54 months if they previously didn't use childcare**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Panel A</b>								
<b>Dependent variable: Mother has or wants a job at 54 months</b>								
Child out of care at 9 months or 2 yrs due to cost/access	-0.096*** (0.018)	-0.034* (0.018)	-0.031* (0.018)	-0.028 (0.018)	-0.024 (0.018)	0.000 (0.018)	0.002 (0.018)	0.006 (0.018)
Child out of care at 9 months or 2 yrs					-0.214*** (0.014)	-0.128*** (0.014)	-0.123*** (0.014)	-0.124*** (0.014)
Additional controls as shown below								
R-Squared	0.005	0.130	0.162	0.174	0.052	0.144	0.175	0.187
Observations	5,051	5,051	5,051	5,051	5,051	5,051	5,051	5,051
% where dependent variable takes value 1	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6
<b>Panel B</b>								
<b>Dependent variable: Mother has a job at 54 months</b>								
Child out of care at 9 months or 2 yrs due to cost/access	-0.164*** (0.020)	-0.062*** (0.018)	-0.051*** (0.019)	-0.049*** (0.019)	-0.077*** (0.020)	-0.022 (0.019)	-0.012 (0.019)	-0.008 (0.019)
Child out of care at 9 months or 2 yrs					-0.261*** (0.014)	-0.148*** (0.014)	-0.145*** (0.014)	-0.148*** (0.015)
Additional controls as shown below								
R-Squared	0.013	0.195	0.226	0.238	0.073	0.212	0.242	0.254
Observations	5,051	5,051	5,051	5,051	5,051	5,051	5,051	5,051
% where dependent variable takes value 1	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6
<b>Panel C</b>								
<b>Additional controls in each column</b>								
Mother's antenatal work controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Partner's antenatal work controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Antenatal characteristics	No	No	Yes	Yes	No	No	Yes	Yes
9-month characteristics	No	No	No	Yes	No	No	No	Yes
2-year characteristics	No	No	No	Yes	No	No	No	Yes

Panels A and B each present the results of OLS regressions of mother's work at 54 months on childcare situation at 9 months and 2 years and additional controls as detailed in Panel C. Descriptions of these controls are in Table 4. Asterisks denote: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

**Table 3: Mothers are less likely to work in high-skill jobs or full time at 54 months if they previously didn't use childcare**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Panel A</b>								
<i>Dependent variable: Mother has a job of equal or higher occupational rank at 54 months compared with antenatal job</i>								
Child out of care at 9 months or 2 yrs due to cost/access	-0.203*** (0.023)	-0.037** (0.018)	-0.033* (0.019)	-0.032* (0.019)	-0.099*** (0.023)	-0.005 (0.019)	-0.001 (0.019)	0.001 (0.019)
Child out of care at 9 months or 2 yrs					-0.294*** (0.016)	-0.117*** (0.014)	-0.115*** (0.014)	-0.121*** (0.014)
Additional controls as shown below								
R-Squared	0.018	0.431	0.449	0.456	0.087	0.441	0.458	0.466
Observations	4,276	4,276	4,276	4,276	4,276	4,276	4,276	4,276
% where dependent variable takes value 1	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8
<b>Panel B</b>								
<i>Dependent variable: Mother works 30+ hours/week at 54 months</i>								
Child out of care at 9 months or 2 yrs due to cost/access	-0.125*** (0.020)	-0.049** (0.019)	-0.066*** (0.019)	-0.064*** (0.019)	-0.022 (0.020)	0.003 (0.019)	-0.016 (0.019)	-0.014 (0.019)
Child out of care at 9 months or 2 yrs					-0.308*** (0.015)	-0.193*** (0.015)	-0.183*** (0.015)	-0.183*** (0.015)
Additional controls as shown below								
R-Squared	0.007	0.191	0.238	0.247	0.086	0.219	0.261	0.270
Observations	5,051	5,051	5,051	5,051	5,051	5,051	5,051	5,051
% where dependent variable takes value 1	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3
<b>Panel C</b>								
<i>Additional controls in each column</i>								
Mother's antenatal work controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Partner's antenatal work controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Antenatal characteristics	No	No	Yes	Yes	No	No	Yes	Yes
9-month characteristics	No	No	No	Yes	No	No	No	Yes
2-year characteristics	No	No	No	Yes	No	No	No	Yes

Panels A and B each present the results of OLS regressions of mother's work at 54 months on childcare situation at 9 months and 2 years and additional controls as detailed in Panel C. In Panel A the sample is restricted to mothers who worked antenatally in a known occupation. Descriptions of these controls are in Table 4. Asterisks denote: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

**Table 4: Additional controls in Tables 2 and 3**

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**Mother's antenatal work controls include:** hours worked (0, <15, 15-29, 30-39, 40+), and with missing dummies: whether the mother had a job while pregnant, her personal income (<\$20k, 20-30k, 30-50k, 50-70k, 70-100k, 100-150k, 150k+), whether she received a benefit, whether she earned self-employment income, whether she held multiple jobs, her occupation, her labour force status (employed, unemployed, student, NILF), whether the child was her first, and the interaction between hours worked and first child.

**Partner's antenatal work controls include:** hours worked (0, <15, 15-29, 30-39, 40+), and with missing categories: their personal income (<\$20k, 20-30k, 30-50k, 50-70k, 70-100k, 100-150k, 150k+), whether they received a benefit, whether they earned self-employment income whether they held multiple jobs, their occupation, and their labour force status (employed, unemployed, student, NILF).

**Antenatal characteristics include:** mother's age (<25, 25-34, 34+), whether the pregnancy was planned, mother's self-prioritised ethnicity, her highest qualification (none, school, post-school, bachelor's higher degree), whether she lives with a partner, whether she is NZ born, if a migrant, whether she moved to NZ aged under 18, deprivation index, rurality, household income (<\$20k, 20-30k, 30-50k, 50-70k, 70-100k, 100-150k, 150+), mother's health before pregnancy (poor, fair, good, very good, excellent), whether she has a disability lasting 6+ months, household structure (parent alone, two parents, parent(s) with extended family only, parent(s) living with non-kin), number of other people in the household (categories 0-5, 6+) number of brothers and sisters who are whanau (0, 1, 2-3, 4-6, 7-9, 10+), number of parents who are whanau (cats 0-4, 5+), number of grandparents who are whanau (categories 0-4, 5+), number of aunts/uncles who are whanau (0, 1-5, 6-10, 11+), number of nieces/nephews who are whanau (0, 1-5, 6-10, 11+), number of cousins who are whanau (0, 1-5, 6-10, 11+), number of children who are whanau (0, 1, 2, 3+), and country of birth (NZ, Australia, Other Oceania, Asia, Europe, Africa, The Americas, Middle East). Missing dummies also included.

**9-month characteristics include:** mother's health (poor, fair, good, very good, excellent), whether mother has a disability lasting 6+ months, whether she has a partner, rurality, deprivation index, number of adults living in household (categories 0-5, 6+), number of children living in household (categories 0-5, 6+), and whether mother has an illness lasting 6+ months. Missing dummies included.

**2-year characteristics include:** whether mother has a partner, rurality, deprivation index, and the child's number of siblings at 16 months (categories 0-10, 11+). Missing dummies included.

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As controls are added in subsequent columns, the difference between mothers who used childcare and those who did not decreases, and the two types of mother who did not use childcare become even more similar. These results are consistent with mothers being much more likely to work if their child is in childcare, and not working leading to less of a desire to work in the long run, but it is also likely that mothers with less of an inherent preference for paid employment are more likely to keep their child out of childcare.

Panel B of Table 2 replicates these regressions for an alternative dependent variable, a dummy variable for the mother having a job at 54 months. The table shows 67% of mothers had a job at 54 months. The raw difference in having a job between mothers with access issues and all others is minus 16 percentage points; this decreases to minus 4.9 percentage points when all the controls are added, and remains statistically significant. That is, mothers who previously had access issues are significantly less likely to be working at 54 months than similar mothers who did not.

Column (5) of Panel B shows that in raw terms mothers who previously did not use childcare for non-access reasons are 26 percentage points less likely to be working at 54 months than are those who did use childcare, and mothers who had access issues are a further 7.7 percentage points less likely to be working. However, subsequent columns show that this latter difference is fully explained by the background characteristics of mothers with access issues. That is, mothers who had access issues are less likely to be working than mothers who did not use childcare for other reasons, but this is only because they have characteristics that make them less likely to be working regardless of their childcare history.

The first two panels of Table 3 repeat these regressions for two additional dependent variables: at 54 months the mother has a job with occupational rank at least as high as the rank of her antenatal occupation, and at 54 months the mother works at least 30 hours per week. The table shows 54% of mothers who worked antenatally have a job with at least as high an occupational rank at 54 months, and 38% of all mothers work at least 30 hours per week at 54 months. Occupational rank is explained in Section 3.3.2.

In each case, the overall comparisons between mothers with different childcare histories are similar. Mothers who ever had childcare access issues are 3.2 percentage points less likely than observably similar mothers who never had childcare access issues to have a job with as high occupational rank as antenatally, and 6.4 percentage points less likely to work full time. However, when compared just to mothers who did not use childcare for other reasons, in both dimensions mothers with access issues are very similar.

All four dependent variables tell a similar story: after controlling for a wide range of parental characteristics, mothers with a history of childcare access issues have weaker labour market outcomes at 54 months than do mothers who always used childcare, but have similar outcomes to mothers who did not use childcare for other reasons. This could suggest a weaker work history makes it more difficult for a mother to find a good job regardless of whether the weaker work history was a choice or the result of a lack of access to childcare. However, we cannot rule out that mothers who experience childcare access issues and those who don't use childcare for other reasons are just different in unobservable ways from those who do use childcare.

## 5.2 By ethnic grouping

In this section we examine the relationship between a history of childcare access issues and whether a mother has a job at 54 months separately for each common ethnic grouping. Mothers are included in an ethnic grouping if they report having an ethnicity in the group either alone or in combination with other ethnicities.

The top left panel of Table 5 focuses on Māori mothers, the top right panel on Pasifika mothers, the lower left panel on European mothers, and the lower right panel on Asian mothers. All four ethnic groupings are similar in several ways. In the uncontrolled regressions that compare mothers who ever had access issues with all other mothers, for every ethnicity mothers with access issues are significantly less likely to have a job than are other mothers. The difference is largest for Māori, at 21 percentage points, and smallest for Asians, at 9.0 percentage points. When controls are added the differences between the groups decrease for every ethnicity. For Europeans the difference remains negative and significant, for Māori and Pasifika it remains negative but loses significance, and for Asians it reverses sign (though does not become significant).

**Table 5: Mothers of all ethnicities are less likely to work at 54 months if they previously didn't use childcare**

*Dependent variable: Mother has a job at 54 months*

	Māori				Pasifika			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Child out of care at 9 months or 2 yrs due to cost/access	-0.209*** (0.045)	-0.074 (0.049)	-0.111** (0.046)	-0.025 (0.050)	-0.151*** (0.047)	-0.035 (0.049)	-0.042 (0.046)	0.003 (0.049)
Child out of care at 9 months or 2 yrs			-0.272*** (0.036)	-0.170*** (0.040)			-0.408*** (0.046)	-0.215*** (0.057)
Additional controls	No	Yes	No	Yes	No	Yes	No	Yes
R-Squared	0.024	0.405	0.085	0.421	0.015	0.465	0.118	0.481
Observations	861	861	861	861	679	679	679	679
% where dependent variable takes value 1	60.6	60.6	60.6	60.6	50.8	50.8	50.8	50.8
% ever with cost/access issues	15.7	15.7	15.7	15.7	21.2	21.2	21.2	21.2
	Europeans				Asians			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Child out of care at 9 months or 2 yrs due to cost/access	-0.123*** (0.026)	-0.053** (0.025)	-0.050* (0.026)	-0.016 (0.025)	-0.090* (0.046)	0.048 (0.050)	0.000 (0.046)	0.073 (0.051)
Child is out of care at 9 months or 2 years			-0.219*** (0.017)	-0.131*** (0.017)			-0.260*** (0.036)	-0.094** (0.042)
Additional controls	No	Yes	No	Yes	No	Yes	No	Yes
R-Squared	0.006	0.217	0.052	0.231	0.005	0.432	0.073	0.437
Observations	3,477	3,477	3,477	3,477	715	715	715	715
% where dependent variable takes value 1	69.9	69.9	69.9	69.9	73.7	73.7	73.7	73.7
% ever with cost/access issues	9.9	9.9	9.9	9.9	14.8	14.8	14.8	14.8

This table presents the results of OLS regressions of whether the mother has a job at 54 months on childcare situation at 9 months and 2 years, run separately for each common ethnic group. Additional controls are mother's antenatal work controls, partner's antenatal work controls, antenatal characteristics, 9-month characteristics, and 2-year characteristics as described in Table 4. Asterisks denote: \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

In the fully controlled specification that distinguishes mothers with three different childcare histories, for every ethnicity mothers who never had access issues but didn't use childcare for other reasons are substantially and significantly less likely to work than are mothers who always used childcare. For Māori, Pasifika, and European mothers, those who did have access issues are similar to others who didn't use childcare.<sup>7</sup> For Asian mothers, those who had access issues are 7 percentage points more likely to work than are observably similar mothers whose did not use childcare for other reasons, though this difference is not statistically significant.

These common patterns across ethnicities again suggest a weaker work history may make finding a job harder for every ethnicity regardless of the reason for that history, but the magnitude of this disadvantage seems larger for Pasifika and Māori, smaller for Europeans, and smallest for Asians. However, we can't rule out other differences between ethnicities contributing to the differences in magnitudes.

## **6 Discussion and implications**

In this report we investigated how a mother's work situation when her child is 54 months old differs if she lacked access to childcare at 9 months or 2 years. We controlled for a large range of maternal and family characteristics, particularly mother's antenatal work characteristics and other antenatal characteristics, and compared mothers with a history of access issues both with all other mothers and separately with mothers who did not use childcare for other reasons and with those who always used childcare.

We found mothers with access issues have similar work outcomes at 54 months to mothers who did not use childcare for other reasons, and both these types of mothers have significant weaker work outcomes than observably similar mothers who always used childcare. For instance, both types of mothers who did not use childcare are around 15 percentage points less likely to have a job at 54 months than are mothers who always used childcare. This same pattern holds across ethnic groups, although the magnitude of the difference varies by ethnicity, being larger for Pasifika and Māori than for Europeans and being smallest for Asians.

This suggests mothers with a weak work history due to childcare access issues when their child is young have more trouble securing a high-skill job later on. However, the full difference observed between the groups is unlikely to be entirely causal for two main reasons. First,

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<sup>7</sup> The coefficients on having a history of access issues range from -0.025 for Māori to 0.003 for Pasifika, and none are statistically significant. That is, we estimate the employment of mothers with a history of access issues differs from that of similar other mothers who did not use childcare by up to a few percentage points.

mothers who have access issues may differ from mothers without such issues in various unobservable ways that make them less likely to have good jobs at 54 months. Although we control for a large collection of personal characteristics, we can't control for everything because we don't have measures of some relevant factors such as how devoted mothers are to their work. Despite this limitation, the fact the coefficients on the different types of mothers decrease only slowly as additional controls after the first set are added suggests the importance of omitted factors may be modest and a substantial part of this estimated relationship may be causal.

Second, we do not know whether the mothers with a history of access issues would have used childcare when their children were 9 months or 2 years old if those access issues had not been present. This is due to data limitations: mothers whose children are not in childcare are asked for only the *main* reason for this, not for all reasons.

In thinking about how much mothers' work at 54 months could be increased if childcare access issues were eliminated, it is informative to address this second concern by considering two different possibilities at opposite ends of the spectrum. One possibility is that none of the mothers with childcare access issues would have used childcare even if those issues had been absent. This would mean their work outcomes would have been the same as those whose children were not in care for non-access reasons. Because the two types of mothers who did not use childcare have very similar work outcomes at 54 months once we control for their characteristics, in this scenario we would expect the elimination of access issues to have very little effect on mothers' work at 54 months.

The possibility at the other extreme is that all the mothers with childcare access issues would have used childcare had these issues been absent. This would mean their work outcomes would have been the same as those whose children were always in childcare. This corresponds to such mothers at 54 months being 11.8 percentage points more likely to want a job, 15.6 percentage points more likely to have a job, 12.0 percentage points more likely to have a job that's at least as high-skill as their antenatal job, and 19.7 percentage points more likely to be working at least 30 hours per week. Because mothers who ever had access issues make up 12.7% of the overall population, this scenario would mean eliminating access issues could increase the percentage of mothers who have a job at 54 months by 2 percentage points.<sup>8</sup>

The true impact of eliminating childcare access issues likely falls between these two scenarios. That is, some but not all mothers with access issues would likely have used childcare had those issues not been present. Also, some but not all of the estimated relationship is likely

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<sup>8</sup> 12.7% of 15.6 percentage points is 2 percentage points.

to be causal. Overall, eliminating childcare access issues would likely increase mothers' employment at 54 months by between 0 and 2 percentage points.

If we consider the same two scenarios for each of the major ethnic groups, we similarly estimate that the proportion of Māori mothers with a history of childcare access issues who have a job at 54 months could increase by up to 20 percentage points if access issues were eliminated. This number is 21 percentage points for Pasifika, 15 percentage points for Europeans, and 2 percentage points for Asians. When expressed as a difference in employment for the full population of the ethnicity, we estimate eliminating access issues could increase the proportion of all Māori mothers who have a job at 54 months by up to 3.1 percentage points, that of Pasifika mothers by up to 4.5 percentage points, that of European mothers by up to 1.5 percentage points, and that of Asian mothers by up to 0.3 percentage points.<sup>9</sup>

This analysis suggests a lack of access to affordable childcare is only one factor that contributes to the long-term labour market outcomes of mothers. However, Māori and Pasifika mothers are disproportionately affected by access issues and their long term work costs. This is concerning because the decreases in income that result may substantially reduce the material wellbeing of the affected families.

Interim Report 1 also showed that households with low income are disproportionately likely to experience childcare access issues; households with antenatal income below \$70,000 are substantially more likely than higher-income households to report both childcare access issues related to cost and those related to other factors at both 9 months and 2 years, and by 2 years cost dominates as a barrier to access. This suggests the effect on mothers' labour market outcomes of access issues may compound existing socioeconomic inequality. However, it also means that a substantial proportion of socioeconomic differences in access to childcare may be amenable to elimination through subsidies that make childcare more affordable for low-income families.

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<sup>9</sup> These values are calculated by multiplying the potential percentage point increase in having a job for mothers with a history of access issues by the fraction of the population with a history of access issues.

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