



**MINISTRY OF SOCIAL
DEVELOPMENT**

TE MANATŪ WHAKAHIATO ORA

Estimating the impact of the introduction of the Families Package early-years changes

- Summary of findings

March 2021

Authors

Moira Wilson, Senior Analyst, Insights MSD (Research and Evaluation)

Keith McLeod, Keith McLeod Consulting

Acknowledgements

This study was prepared as part of a research collaboration between MSD and Oranga Tamariki–Ministry for Children. We are grateful to colleagues at Oranga Tamariki, Treasury, Inland Revenue and MSD for advice on data, helpful comments, and review of code, and to members of the MSD Research Ethics Panel for their advice. We are also grateful to Professor Tracey McIntosh (University of Auckland and MSD Chief Science Advisor), Associate Professor Taryn Morrissey (American University, Washington DC), Dr Nichola Shackleton (Social Wellbeing Agency and University of Auckland), Professor Tim Maloney (AUT and MSD Chief Economist), and Dr Dean Hyslop (Motu Economic and Public Policy Research) who provided expert peer review and comments that helped shape the analysis and interpretation. Thanks are also due to members of MSD and cross-agency reference groups for their input and feedback.

Disclaimer

These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) which is carefully managed by Stats NZ. For more information about the IDI please visit <https://www.stats.govt.nz/integrated-data/>.

The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

The views, opinions, findings, and recommendations in this report are those of the authors. They do not necessarily reflect the views of MSD, Oranga Tamariki or other organisations involved in the study, or people involved in the peer review process. Any errors or omissions are our own.

Published

Ministry of Social Development

PO Box 1556

Wellington 6140

www.msd.govt.nz

www.msd.govt.nz/insights

March 2021

Code developed for this study is available on request by emailing research@msd.govt.nz.

ISBN (online)

978-1-99-002335-4

Key findings

Early-years changes in the Families Package introduced a new 'Best Start' tax credit and a four-week extension of paid parental leave entitlement, from July 2018.

We estimate that in the first six months post-birth, mothers and first parents in the first cohort to qualify for these changes gained an additional \$55 per week as a result of being in that cohort. This is equivalent to a 10 percent increase in their income. It is on top of income gains from other parts of the Families Package.

Mothers and first parents eligible for paid parental leave gained the most in the six-month follow-up (\$72 per week on average). Once we are able to look at a three-year follow-up we expect mothers and first parents supported by benefit to gain the most. However, within the first six months their income gains were lower on average. This was partly due to offsetting losses of Temporary Additional Support and Parental Tax Credit income.

Average estimated income gains were broadly similar across ethnic groups. Most of the additional income for non-Māori, non-Pacific mothers and first parents came from increased paid parental leave income. Māori and Pacific mothers and first parents benefitted in equal measure from additional paid parental leave income and Best Start.

We look at months with no wages and salaries post-birth as a proxy for time parents spent at home with their infants. This measure increased as intended by the policy. Mothers and first parents eligible for paid parental leave spent seven months with no wages and salaries in the first 12 months post-birth on average. We estimate that being in the first cohort to qualify for the early-years changes increased this time by just under a week, on average.

The size of the effect on months with no wages and salaries appears small relative to the four-week extension in paid parental leave made available to parents in 2018. One possible explanation is that recent inflation in house prices and rents worked in opposition to the policy reform. This may have constrained the amount of additional leave parents were financially able to take. Other research suggests financial constraints are an important factor. Other research also suggests that one of the ways people may have responded to increased paid parental leave is by taking less unpaid leave or less annual leave.

Across ethnic groups, the estimated increase in time with no wages and salaries was only statistically significant for non-Māori, non-Pacific mothers and first parents. This is consistent with their higher representation among those eligible for paid parental leave. A result is a narrowing of ethnic differences in months with no wages and salaries post-birth. This is because non-Māori, non-Pacific mothers/first parents had the shortest average length of time with no wages and salaries prior to the reform.

We apply a range of statistical tests and conclude that any effect on birth timing was very small. This contrasts with the Australian 'Baby Bonus' experience. It possibly reflects differences in the way in which Best Start was designed and implemented. Results remained robust when we applied other sensitivity tests.

A next study will extend the follow-up, and estimate the impacts of the early-years changes incomes on selected measures of children's health and wellbeing.

Introduction

The 2018 Families Package included a number of changes to social assistance payments designed to improve the incomes of low- and middle-income families (New Zealand Government, 2017). It formed part of a programme of action to improve child and youth wellbeing (Department of Prime Minister and Cabinet, 2019).

Financial assistance for families was increased. This happened mainly through an increase in the Accommodation Supplement (from April 2018) and Family Tax Credit entitlements (from July 2018), and a new Winter Energy Payment for families supported by a benefit (from July 2018).

Changes to early-years entitlements saw the introduction of four-week extensions to the maximum length of paid parental leave in July 2018 and July 2020, and a new Best Start tax credit of \$60 per week. A Parental Tax Credit ended. Best Start was paid to the primary caregiver in weeks when paid parental leave was not received, from July 2018. It was available regardless of income in the first year of a child's life, and then available to low- and middle-income families on an income-tested basis until a child turned three (Arnesen & Wilson, 2019).

Overseas studies suggest the changes could have a range of positive effects (Momsen, 2021). These include increasing the amount of time mothers spend at home with their new-born children, increasing their attachment to paid employment over the longer term, and reducing stress on mothers. Other positive effects found in overseas studies include improvements in children's development, educational outcomes, and health, especially in families with lower incomes (Cooper & Stewart, 2020; Ministry of Social Development, 2018; Heymann et al., 2017; Nandi et al., 2018).

Policies that improve financial assistance are also important to the wellbeing of whānau, hapū and iwi (MSD, 2020), and of Pacific peoples, families and communities (MSD, 2019), and to reducing inequalities.

However, the actual effects are not certain. They depend on a range of factors. These include policy interactions that might offset some income gains, levels of awareness and ease of take-up of entitlements, labour supply responses and spending behaviours, and debt repayments.

The way in which the early-years changes in the Families Package were implemented offers a unique opportunity for research to build the evidence base on the impacts of increasing financial assistance for families and children in the Aotearoa New Zealand context. This is because only families with a child born on or after 1 July 2018 were able to receive the four-week extension of paid parental leave and the new Best Start tax credit.¹ As a result, cohorts with births in close proximity qualified for very different levels of early-years financial support.

In contrast, if they met eligibility requirements, all families were able to receive the increases to Accommodation Supplement and Family Tax Credit entitlements and the new Winter Energy Payment.

¹ Families could also qualify for Best Start if their child was due on or after 1 July but born before that date.

Study aims and methods

The aim of this study is to document the Families Package early-years changes, and to demonstrate a research approach that can be used to estimate the causal effects of the additional financial assistance available to families with children born on or after 1 July 2018.² Our intention is to provide a resource that can encourage further research. A full technical report documenting the reform, the study methods, and findings is available (Wilson & McLeod, 2021).

Because the focus is on narrowly defined birth cohorts, the study is limited to exploring impacts on outcomes that can be measured or proxied using administrative data.

We use linked administrative data in the Statistics New Zealand Integrated Data Infrastructure, and estimate impacts on two outcomes:

- the incomes of parents with infants in the first six months post-birth
- months with no wages and salaries in the first six and 12 months post-birth, as a proxy for time parents spent at home with their infants.

The approach used to estimate impacts involves:

- examining the difference in outcomes comparing the first three-month cohort with births on or after 1 July 2018 (and able to qualify for the early-years changes) with the three-month cohort with births just prior to the July 2018 implementation (and not eligible)
- comparing this difference with the equivalent difference for cohorts with births either side of 1 July in previous years (differences might generally occur every year due, for example, to differences in parents' earnings and leave-taking decisions depending on the season in which the child is born)
- adjusting to take account of slight changes in the composition of the cohorts over time and in their recent employment and income history.

If there was a common pattern to differences for cohorts born either side of 1 July in the previous years and this was significantly altered in 2018 (after controlling for the slight changes in the composition of the cohorts), this 'difference-in-differences' approach can provide an estimate of the causal impact of the additional increase in financial support provided by the early-years changes,³ over and above the effects of the more general income gains that occurred as a result of the Families Package.

² Following the methods used in an analysis conducted by Deutscher & Breunig (2018) examining the introduction of the Australian Baby Bonus that was payable between 2004 and 2014.

³ This approach is favoured over methods that estimate discontinuities in outcomes depending on the birth date because, due to de-identification processes that apply to data held in the Integrated Data Infrastructure, birth year and month are available for analysis, but not birthdate.

Findings

Increases in income occurred for families with children born in 2018 overall. This reflected the broader Families Package income gains and increased income from employment

Descriptive data for the three-month cohort with births pre-1 July in 2018 (who did not generally qualify for Best Start⁴ and did not qualify for the extended paid parental leave) compared with pre-1 July cohorts in previous years show that even without the early-years changes there were particularly large increases in the gross incomes⁵ of parents with new-borns between 2017 and 2018:

- for mothers and first parents recorded on children's birth certificates, average income was around \$74 per week higher in the six months following the birth for the pre-1 July 2018 birth cohort than for the pre-1 July 2017 birth cohort, a 17 percent increase
- for fathers and second parents, the average income increase was like that of mothers and first parents in absolute terms, but much smaller in relative terms (a seven percent increase) and was driven almost entirely by increases in employment income.

A key driver of the increase in average income for mothers/first parents was more income from Working for Families tax credits and benefit payments, consistent with the Families Package increases to Family Tax Credit and Accommodation Supplement. There was also higher income from paid parental leave post-birth. This reflects higher levels of employment before the child's birth among those having children in 2018 compared to those having children in 2017. Table 1 shows the average gain in income from Working for Families tax credits, paid parental leave and benefit payments combined was \$49 per week, a 16 percent increase in income from these payments.

Those on the lowest incomes gained the most. Mothers/first parents in the pre-1 July cohort who were receiving a benefit in the month before the birth had large gains in income comparing 2017 and 2018. Income from Working for Families tax credits, paid parental leave and benefit payments that was almost \$110 per week higher in the six months following the birth for the 2018 birth cohort than for the 2017 cohort on average (a 22 percent increase) (Table 1).

Another contributor to the increase in income comparing 2017 and 2018 cohorts was higher employment income post-birth.

⁴ Families could qualify for Best Start if their child was due on or after 1 July but born before that date.

⁵ In the reporting that follows, 'income' is gross nominal income unless otherwise specified. Adjustment for consumer price index changes will be a useful enhancement in planned extensions of this study. However, it would make only a very slight difference to the figures presented in this report as price inflation over the period was low. The outcome periods of interest for the impact estimates that are the main focus of this study partly overlap and differ by three months on average. Outcome periods for descriptive estimates (comparing 2017 and 2018) presented in this section are one year apart.

Table 1: Descriptive data comparing income from Working for Families tax credits, paid parental leave and benefit payments for the three-month cohorts with births pre-1 July in 2018 and 2017

	Average increase in gross income from these payments in the first six months post-birth	
	\$ per week	% change
All mothers/first parents	\$49	16%
Mothers/first parents on benefit in the month before the birth	\$110	22%
Mothers/first parents eligible for paid parental leave	\$36	11%
Mothers/first parents not eligible for paid parental leave	\$31	26%
All mothers/first parents - Māori ethnicity	\$77	18%
All mothers/first parents - Pacific ethnicity	\$65	17%
All mothers/first parents - Non-Māori, non-Pacific ethnicity	\$37	14%

We estimate that mothers/first parents in the first cohort eligible for the early-years changes had additional income gains as a result that averaged \$55 per week in the first six months post-birth

Turning to our causal impact estimates, we estimate that being in the three-month birth cohort that was the first to be eligible for the early-years changes increased mothers/first parents' incomes by an average of over \$55 per week in the first six months after the birth of their child. This is equivalent to a 10 percent increase in income (Table 2). It is in addition to income gains from other parts of the Families Package.

Table 2: Estimated impact of being in the first cohort eligible for the early-years changes on total gross income

	Estimated average impact on gross total income in the first six months post birth	
	\$ per week	% change
All mothers/first parents	\$55**	10%
Mothers/first parents on benefit in the month before the birth	\$31**	5%
Mothers/first parents eligible for paid parental leave	\$72**	11%
Mothers/first parents not eligible for paid parental leave	\$40**	19%
All mothers/first parents - Māori ethnicity	\$55**	9%
All mothers/first parents - Pacific ethnicity	\$50**	9%
All mothers/first parents - Non-Māori, non-Pacific ethnicity	\$56**	10%

Note: * = significant at the 5 percent level, ** = significant at the 1 percent level.

The increase was mostly driven by an increase in income from paid parental leave and from the new Best Start tax credit, partly offset by a drop in employment income and in income from Parental Tax Credit. Total income from Working for Families tax credits, paid parental leave and benefit payments increased by \$70 per week on average.

Income gains as a result of being in the first cohort eligible for the early-years changes were largest for mothers/first parents eligible for paid parental leave

The size of the estimated average income gains from the early-years changes in the first six months varied depending on mothers/first parents' circumstances. Three groups potentially affected in different ways are approximated as follows:

- mothers/first parents supported by a benefit in the month before the child was born
- mothers/first parents eligible for paid parental leave (estimated based on pre-birth earnings) and not supported by a benefit in the month before the birth
- mothers/first parents not eligible for paid parental leave and not supported by a benefit in the month before the birth.

While mothers/first parents supported by a benefit in the month before the birth received the largest gains from other parts of the Families Package (Table 1), they had the smallest estimated additional average increase in income as a result of the early-years changes in the first six months post-birth (Table 2), an additional \$31 per week on average, representing a five percent increase.

Mothers/first parents eligible for paid parental leave had the largest estimated additional average increase in income as a result of the early-years changes, an additional \$72 per week on average, representing an 11 percent increase.

Mothers/first parents not eligible for paid parental leave received \$40 per week in additional income on average. This group tended to comprise mothers/first parents with little recent employment prior to having the child, who did not qualify for a main benefit due to their partner having earnings. The group had a comparatively high representation of families who did not meet residence requirements for Best Start and other Working for Families tax credits (making up eight percent of the group). The \$40 per week average income gain represented a large relative increase in their personal income of 19 percent (but because many are likely to have a working partner, the percentage increase is likely to represent a smaller share of their family income).

That the early-years changes benefited mothers/first parents who were eligible to receive paid parental leave the most in the first six months is consistent with the way the package was designed and implemented. There were sizeable potential income gains from lengthened paid parental leave within the first six months. However, Best Start offered the larger potential total financial gains overall, spread over a longer period. In time, we expect mothers/first parents supported by benefit and other low-income mothers/first parents to have the largest total income gains.

Income gains as a result of being in the first cohort eligible for the early-years changes were broadly similar across Māori, Pacific, and non-Māori, non-Pacific mothers/first parents

We looked at differences in income gains for mothers/first parents in each of three ethnic groups: Māori, Pacific, and non-Māori, non-Pacific. The first two of these groups overlap, as people may report being both Māori and Pacific, while the third group only includes people not in the first two groups.

Mothers/first parents from the three ethnic groups had different probabilities of being in different financial situations. Māori and Pacific mothers/first parents were more likely than other mothers/first parents to be supported by benefit before the birth of their child. They were also more likely to meet residence requirements for Best Start and other Working for Families tax credits, and less likely to be eligible for paid parental leave. This impacted on the way and extent to which these groups benefited from the early-years changes.

Estimated additional income as a result of being in the first cohort eligible for the early-years changes ranged from around \$50 per week for Pacific mothers/first parents, to around \$56 per week for non-Māori, non-Pacific mothers/first parents. Māori mothers/first parents gained around \$55 per week.

These increases reflected estimated total gross income gains of 9.3 percent for Māori and Pacific mothers/first parents, and 10.5 percent for non-Māori, non-Pacific mothers/first parents. Partnered parents are the dominant family form for infants across all ethnic groups. But Māori and to a lesser extent Pacific mothers with infants are more likely than Non-Māori, non-Pacific mothers to be in a sole parent family (MSD, 2018a, p. 36). As a result, we expect the income gains were larger as a proportion of total family income for Māori and Pacific women.

While the majority of additional income for non-Māori, non-Pacific mothers/first parents came from increases in paid parental leave income, Māori and Pacific mothers/first parents benefitted in equal measure from paid parental leave income and Best Start.

Income gains were partially offset by the loss of some other financial assistance payments, particularly for lower income families

Offsets occurred due to the loss of income from some other payments:

- low- and middle-income families not receiving a benefit and not receiving paid parental leave lost access to Parental Tax Credit which had provided \$200 per week in the first 10 weeks of the child's life – this payment was discontinued when Best Start was introduced (around 14 percent of earlier study cohorts had received Parental Tax Credit in the six months post-birth)
- some families receiving a benefit or with a low income lost Temporary Additional Support – this is a payment of last resort that is withdrawn dollar-for-dollar as income from other sources, including Best Start and other Working for Families tax credits, increases
- some families appear to have also lost Accommodation Supplement income – reasons for this are less clear, but gains in income from other sources may have reduced the likelihood that families went through the claims process for this payment, and gains in income from paid parental leave and increased employment income of fathers/second parents may have reduced Accommodation Supplement entitlement in some cases.

The result was more modest additional income gains from the early-years changes in the first six months (over and above income gains from other parts of the Families Package) for some of the families for whom increased financial assistance around the time of birth

might have resulted in the greatest impacts on wellbeing. Further study to estimate the scale and distribution of impacts on income and child wellbeing with a longer follow-up will be an important next step.

For fathers/second parents in the first cohort eligible for the early-years changes, overall additional income gains were not statistically significant

The estimated increase in income for fathers/second parents as a result of the early-years changes was not statistically significant at an aggregate level, although there was a small statistically significant increase in Best Start income, partly offset by a small statistically significant decrease in Parental Tax Credit income.

The small increase in Best Start income for fathers/second parents highlights that for the most part this payment, and additional paid parental leave income, was received by mothers/first parents. As a result, our estimated absolute dollar gains in income for mothers/first parents are likely to largely represent the extent of the gains in family incomes.

Mothers/first parents eligible for the extended paid parental leave are estimated to have spent more time off work in their child's first year as a result of the early-years changes, consistent with the policy intent

Mothers/first parents estimated to be eligible for paid parental leave spent seven months with no wages and salaries in the first 12 months post-birth on average. Being in the first cohort to qualify for the Families Package early-years changes is estimated to have increased this time by 0.21 of a month, close to a week, on average (Table 3).

Across ethnic groups, the effect on months with no wages and salaries was only statistically significant for non-Māori, non-Pacific mothers/first parents. This is consistent with their higher representation among those eligible for the extended paid parental leave. Because non-Māori, non-Pacific mothers/first parents had less time with no wages and salaries post-birth on average before the early-years changes, the increase in months with no wages and salaries appears to have resulted in a slight reduction in ethnic differences in time mothers/first parents spend at home with an infant after the birth.

Table 3: Estimated impact of being in the first cohort eligible for the early-years changes on months with no wages and salaries in the first 12 months post birth

	Estimated average impact on months with no wages and salaries in the first 12 months post birth	
	months	% change
All mothers/first parents	0.14**	1.6%
Mothers/first parents on benefit in the month before the birth	0.04	0.3%
Mothers/first parents eligible for paid parental leave	0.21**	3.0%
Mothers/first parents not eligible for paid parental leave	0.08	0.7%
All mothers/first parents - Māori ethnicity	0.07	0.8%
All mothers/first parents - Pacific ethnicity	-0.19	-2.0%
All mothers/first parents - Non-Māori, non-Pacific ethnicity	0.21**	2.5%

Note: * = significant at the 5 percent level, ** = significant at the 1 percent level.

Findings from the *Growing Up in New Zealand* (GUiNZ) longitudinal study suggest most mothers use a combination of different types of leave to be home with their babies in the first few months after their child’s birth. Close to nine in ten of the GUiNZ mothers who took leave received paid parental leave, half took unpaid leave, and one-third used annual leave (Morton et al., 2012). This suggests that increased weeks in receipt of paid parental leave would not necessarily have been matched by reduced weeks in paid employment. Instead, some of the effect may have been to reduce use of unpaid leave or annual leave.

Overall, the size of the effect on months with no wages and salaries appears small. When we looked at just the *first six months* post-birth, the number of months that these mothers/first parents had no earnings from wages and salaries increased by an estimated 0.12 of a month on average, around four days. Employment income reduced in the first six months by almost \$790. This amount equates to 4.6 percent of expected employment income over the six months post-birth in the absence of reform, and just under a third of the \$2,255 maximum possible income gain as a result of the four-week extension in the maximum length of paid parental leave.

One possible explanation for the small increase in time with no wages and salaries is that recent inflation in house prices and rents worked in opposition to the policy reform, and constrained the amount of additional leave working parents were financially able to take. Another is that leave taking is limited by concerns that employment opportunities and career pathways may be negatively impacted, and by employer preferences and practices (Costantini, Dickert, Sartori, & Ceschi, 2020; Nowak, Naude, & Thomas, 2013). Attitudes and practices may have still been adjusting in the period we focus on. Qualitative research would be useful in this area.

GUiNZ research suggests financial constraints are a factor. At their ante-natal interview, 95 percent of the GUiNZ mothers who were in paid employment said they intended to take parental leave. The average anticipated leave period was eight to nine. However, when interviewed when their child was around nine months old, only 30 percent of mothers who took some form of leave remained on leave (Morton et al., 2012). Almost three-quarters of the mothers who were in paid employment when their child was nine

months old reported 'needing the money' as a reason for why they returned to work before their child reached nine months (Peterson et al., 2018).

Results remain robust after considering the possible influence of small birth shifting effects

We assessed the degree to which cohorts with children born just before and just after the 1 July 2018 implementation date can be viewed as reliable comparison groups for difference-in-differences estimation of impacts. To do this we examined whether the introduction of the early-years changes was accompanied by any shift in the timing or recording of births that might have altered the composition and comparability of the 2018 study cohorts relative to previous years. Such effects have been found when post-natal payments have been introduced elsewhere (Momsen, 2021).

The results were remarkably consistent. There appear to have been around 80, and at most around 120, births shifted to after the eligibility date for the Families Package. This represents around 1.5 to 2.5 percent of the 5,000 typical monthly births. This would only have the potential to have a very small effect on the impact estimation. When we excluded births in June and July 2018 (which would potentially have been affected by birth shifting), our results remained robust.

Results also remained robust when we applied a range of other sensitivity and robustness tests, including tests to check that there was a common pattern to differences for cohorts born either side of 1 July in the previous years we used as a basis for comparison.

Strengths and limitations

A strength of this study is that it exploits a change in entitlements which occurred in such a way as to create a natural experiment. It uses a control group – earlier years' cohorts with births either side of 1 July – who appear to be otherwise similar but unaffected by the change (in that there were common patterns to differences in the outcomes for those with births either side of 1 July before the Families Package).

Basing the study on linked administrative data in the IDI has the strength of allowing a focus on a narrowly defined population – new-borns and their parents – and allowing examination of sub-groups within this population in a way that would not be possible using survey data.

Against these strengths, several limitations need to be borne in mind.

- IDI data linking is generally probabilistic and some errors and missed links are inevitable in this process (Milne et al., 2019).
- The IDI data we use are collected or generated in the process of administering government services, and inevitably will also embody any errors in measurement, reporting and recording that occur in those processes.
- Reliance on administrative data also does not enable us to look at a range of outcomes of importance to Māori and Pacific communities. At the time of writing, the administrative data in the IDI offered no measures of whānau, or whānau wellbeing, for example (Kukutai, Sporle, & Roskrug, 2017).
- The simple count of months with no wages and salaries we use as a proxy for time at home with an infant may not be sufficiently sensitive to identify increased time not in paid employment, and alternative specifications could be explored in future research.
- We are unable to examine family incomes, and need to impute the flow of Working for Families tax credit income across the year. We also take no account of recouping of overpayments of tax credits or paid parental leave.
- The nature of the research opportunity we examine means that we will be unable to say whether impacts changed over time as families learned more about the changes in entitlements.
- Adjustment for consumer price index changes will be a useful enhancement in planned extensions of this study. It would make only a very slight difference to the impact estimates presented in this report, however.
- Only one main analytical approach is applied, and others could be explored. Future studies could be enhanced by also including an estimate of the effect of other income gains from the Families Package (while noting that it is the income gains from the early-years changes that offer the best basis for causal inference).

Areas for future research

IDI data are a new resource for building evidence about what works (Connelly et al., 2016; Milne et al., 2019), but there is a need for greater transparency about their existence, use, and limitations (Gulliver et al., 2018). This paper demonstrates the application of quasi-experimental methods to IDI data to help begin to address an important policy question – *what difference does increased financial assistance make to children and their families?*

A longer follow-up is required before drawing conclusions about the success of the Families Package early-years changes in achieving their aims. Low- and middle-income families are yet to receive the full amount of the additional income provided by Best Start.

Our next study will enhance and extend the analysis presented here to examine the increase in financial assistance in the ante-natal period that occurred as a result of the Families Package, and to estimate the combined effects of the increased ante-natal and post-natal financial assistance on selected measures of children's health and wellbeing in their early years.

There is considerable scope for other research teams to also build on this initial study. Further analysis to explore effects on parental leave-taking and employment could be undertaken. This could include, for example, estimating impacts on the fraction of each month that is worked (based on estimated hourly earnings), or estimating impacts on time to return to substantive earnings (disregarding months when small levels of earnings might be associated with 'keeping in touch days' worked within a period of paid parental leave). Longer-term effects on maternal employment and earnings, and the impact on the 'parenthood penalty' experienced by mothers, will also be of policy and research interest.

Results presented here focus on the difference made by the *introduction* of the Families Package changes. Another area for future research is the impact of the complete *withdrawal* of Best Start when children turn three and qualify for 20 hours of funding for early childhood education services. This aspect of Best Start's design balances a range of policy considerations and assumptions about parents' employment responses (Boston & Chapple, 2014). Evidence on what actually occurs will be important.

The natural experiment also provides an opportunity to provide policy makers with evidence on the difference additional financial assistance provided through Best Start made to families with young children during the 2020 COVID-19 crisis and beyond.

Going forwards, further research with a longer follow-up and examining effects on a wider set of administratively recorded outcomes will be useful. Studies could look at effects of the additional income on a range of outcomes for children, parents and siblings as the first cohort to qualify for the Families Package early-years changes moves through childhood and adolescence.

Finally, supplementing the research through additional data collection from families in the different cohorts could be contemplated. This could help build understanding of causal pathways, and impacts on self-reported and culturally informed measures of wellbeing.

References

- Arnesen, L., & Wilson, M. (2019). *Families Package Monitoring Report - 2019 - Trends in receipt of Families Package payment*. Retrieved from <https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/evaluation/family-packages/families-package-monitoring-report-2019-main-report-nov.pdf>
- Boston, J., & Chapple, C. (2014). *Child Poverty in New Zealand*. Wellington, New Zealand: Bridget Williams Books Limited.
- Connelly, R., Playford, C. J., Gayle, V., & Dibben, C. (2016). The role of administrative data in the big data revolution in social science research. *Social Science Research*, 59, 1–12. <https://doi.org/10.1016/j.ssresearch.2016.04.015>
- Cooper, K., & Stewart, K. (2020). Does Household Income Affect children's Outcomes? A Systematic Review of the Evidence. *Child Indicators Research*. <https://doi.org/10.1007/s12187-020-09782-0>
- Costantini, A., Dickert, S., Sartori, R., & Ceschi, A. (2020). Return to work after maternity leave: the role of support policies on work attitudes of women in management positions. *Gender in Management: An International Journal*, ahead-of-p(ahead-of-print). <https://doi.org/10.1108/GM-06-2019-0085>
- Deutscher, N., & Breunig, R. (2018). Baby Bonuses: Natural Experiments in Cash Transfers, Birth Timing and Child Outcomes. *Economic Record*, 94(304), 1–24. <https://doi.org/10.1111/1475-4932.12382>
- DPMC. (2019). *Child and Youth Wellbeing Current Programme of Action*. Retrieved from Department of Prime Minister and Cabinet
- New Zealand Government (2017). Fact Sheet – Families Package. Retrieved from <https://www.beehive.govt.nz/sites/default/files/2017-12/Families Package Factsheet.pdf>
- Gulliver, P., Jonas, M., Fanslow, J., McIntosh, T., & Waayer, D. (2018). Surveys, Social licence and the Integrated Data Infrastructure. *Aotearoa New Zealand Social Work*, 30(3), 57–71.
- Heymann, J., Sprague, A. R., Nandi, A., Earle, A., Batra, P., Schickedanz, A., ... Raub, A. (2017). Paid parental leave and family wellbeing in the sustainable development era. *Public Health Reviews*. BioMed Central Ltd. <https://doi.org/10.1186/s40985-017-0067-2>
- Kukutai, T., Sporle, A., & Roskrige, M. (2017). *Subjective whānau wellbeing in Te Kupenga*. Wellington: Superu. Wellington. Retrieved from <https://thehub.swa.govt.nz/assets/Uploads/Subjective-whanau-wellbeing-report.pdf>
- Milne, B. J., Atkinson, J., Blakely, T., Day, H., Douwes, J., Gibb, S., ... Teng, A. (2019). Data Resource Profile: The New Zealand Integrated Data Infrastructure (IDI). *International Journal of Epidemiology*, 48(3), 677-677E. <https://doi.org/10.1093/ije/dyz014>
- Momsen, K. (2021). *Possible Effects of the Best Start Tax Credit – A Rapid Review of International Evidence*. Retrieved from <https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/evaluation/families-package-reports/families-package.html>
- Morton, S. M. B., Atatoa Carr, P. E., Grant, C. C., Lee, A. C., Bandara, D. K., Mohal, J., ... Wall, C. R. (2012). *Growing Up in New Zealand: A longitudinal study of New Zealand children and their families. Report 2: Now we are born*. Auckland. Retrieved from <https://www.growingup.co.nz/sites/growingup.co.nz/files/2019-10/report02.pdf>

- MSD. (2018a). *Families and whānau and the benefit system – A high-level initial briefing*. Retrieved from <https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/information-releases/weag-report-release/families-and-whanau-and-the-benefit-system-a-high-level-initial-briefing.pdf>
- MSD. (2018b). *Rapid Evidence Review : The impact of poverty on life course outcomes for children , and the likely effect of increasing the adequacy of welfare benefits*. Wellington, New Zealand. Retrieved from <https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/information-releases/weag-report-release/rapid-evidence-review-the-impact-of-poverty-on-life-course-outcomes-for-children-and-the-likely-effect-of-increasing-the-adequacy-of-w>
- MSD. (2019). *Pacific Prosperity Our People, Our Solutions, Our Future*. Retrieved from <https://www.msd.govt.nz/documents/about-msd-and-our-work/about-msd/strategies/pacific-strategy/pacific-prosperity-our-people-our-solutions-our-future-english-version.pdf>
- MSD. (2020). *Te Pae Tata Māori Strategy and Action Plan*. Retrieved from <https://www.msd.govt.nz/documents/about-msd-and-our-work/about-msd/strategies/te-pae-tata/te-pae-tata-maori-strategy-and-action-plan-single.pdf>
- Nandi, A., Jahagirdar, D., Dimitris, M. C., Labrecque, J. A., Strumpf, E. C., Kaufman, J. S., ... Heymann, S. J. (2018). The Impact of Parental and Medical Leave Policies on Socioeconomic and Health Outcomes in OECD Countries: A Systematic Review of the Empirical Literature. *Milbank Quarterly*, 96(3), 434–471. <https://doi.org/10.1111/1468-0009.12340>
- Nowak, M. J., Naude, M., & Thomas, G. (2013). Returning to Work After Maternity Leave: Childcare and Workplace Flexibility. *Journal of Industrial Relations*, 55(1), 118–135. <https://doi.org/10.1177/0022185612465530>
- Peterson, E. R., Andrejic, N., Corkin, M. T., Waldie, K. E., Reese, E., & Morton, S. M. B. (2018). I hardly see my baby: challenges and highlights of being a New Zealand working mother of an infant. *Kotuitui*, 13(1), 4–28. <https://doi.org/10.1080/1177083X.2017.1391852>
- Wilson, M., & McLeod, K. (2021). *Estimating the impact of the introduction of the 2018 Families Package early-years changes – Technical report*. Retrieved from <https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/evaluation/families-package-reports/families-package.html>