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TE MANATŪ WHAKAHIATO ORA

Estimates of the change in family incomes after the introduction of the Families Package

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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.

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Key findings

This paper uses linked data held in the Stats NZ Integrated Data Infrastructure (IDI) to estimate the change in families' incomes that occurred following the introduction of the Families Package in 2018.

Based on our results:

- 332,700 families, over half of all families with children, are estimated to have received income from the Families Package in 2018/19
- these 332,700 families received an average of \$55 more a week from Families Package payments in 2018/19 than in 2017/18
- our \$55 estimate takes into account the loss of income due to flow-on effects on Temporary Additional Support entitlements
- families who received Families Package payments in 2018/19 had a six percent increase in average gross and net total income between 2017/18 and 2018/19
- the six percent increase is similar in percentage change terms to the average income gains from 2017/18 to 2018/19 for families that did not receive Families Package payments – because of gains in employment income for this second group of families
- strong growth in employment income between 2017/18 and 2018/19 will have resulted in lower first-year numbers of recipient families and smaller average payments from the Families Package than were expected prior to its implementation
- three quarters of the increase in average Families Package income for families receiving payments came from Family Tax Credit and Accommodation Supplement
- the next largest gains were from paid parental leave and In-work Tax Credit, while Best Start, the Winter Energy Payment and Orphan's Benefit / Unsupported Child Benefit contributed smaller amounts to the overall average gains
- more than two thirds of families with a Māori or Pacific parent or caregiver are estimated to have had income from the Families Package in 2018/19, compared with just under half of families without a Māori or Pacific parent or caregiver
- the increase in Families Package income for recipient families varied across ethnic groups, with an average gain of \$66 per week for families with a Pacific parent or caregiver, \$59 per week for families with a Māori parent or caregiver, and \$51 per week for families without a Māori or Pacific parent or caregiver.

These estimates only cover the initial implementation period and do not capture the full effects of the package. The 2018/19 period we look at precedes the full effects of Best Start (which was fully implemented when the first cohort eligible turned three in mid-2021), the Winter Energy Payment (which was paid for a shorter period in 2018 than in subsequent years), and the 2020 paid parental leave extension.

Introduction

The Families Package included changes to social assistance payments aimed at improving the incomes of low- and middle-income families. The level of financial assistance was increased mainly through:

- an increase in Accommodation Supplement (from April 2018)
- an increase in Family Tax Credit and other Working for Families tax credit entitlements, and matching increases to Orphan's Benefit and Unsupported Child Benefit (from July 2018)
- a new Winter Energy Payment for families supported by benefit (from July 2018) (Arnesen & Wilson, 2019).

Through the Families Package, early-years entitlements also saw a series of changes. These changes were generally only available to families with children born from July 2018 onwards. They were:

- four-week extensions to the maximum length of paid parental leave (one in July 2018 and one in July 2020)
- introduction of a new 'Best Start' tax credit of up to \$60 per week until children reach the age of three
- removal of Parental Tax Credit (Wilson & McLeod, 2021).

Prior to its introduction, The Treasury modelled the impact of the Families Package on family incomes using its Tax and Welfare Analysis microsimulation model (TAWA). This involved comparing simulated incomes under pre-reform policy settings with simulated incomes under Families Package policy settings for each of the tax years 2018/19, 2019/20 and 2020/21.

It was estimated that, relative to pre-reform policy settings, the Families Package would make 385,000 families with children better off by an average of \$66 a week in 2018/19, and by an average of \$75 a week once it was fully implemented in 2020/21.¹ The estimate of 385,000 families with income gains was equivalent to 66 percent of all families.

These estimates gave a 'static' set of simulated expectations prior to the implementation of the Families Package. However, changing economic conditions and parental employment, possible behavioural responses to the package, and varying package take-up, could have impacted on the amount of financial assistance families actually received.

In addition, TAWA simulations assume the policy settings modelled are in place for an entire tax year. This means the number of families modelled as gaining income in the first year will have been greater in the TAWA simulations than would actually occur, as some increases in financial assistance were only introduced part-way through the year, or only for families with births after the implementation.

The purpose of this paper is to estimate the change in family incomes that actually occurred in 2018/19 taking a different approach to the TAWA simulations.

Where the TAWA simulations estimate the change in incomes compared with pre-reform simulated incomes for the same year, the approach taken in this paper compares actual incomes in the year before the Families Package was introduced with the year after the

¹ The Treasury – Families Package Information Release – Release Document March 2018. <https://www.treasury.govt.nz/sites/default/files/2018-04/fp-3817438.pdf>.

introduction. The paper also estimates how different groups in the population were affected.

Our estimation approach is based on linked data held in the Stats NZ Integrated Data Infrastructure (IDI).

Using linked data in the IDI lets us fill several important evidence gaps. It lets us provide:

- a picture of families' total income from Families Package payments
- information by ethnic group
- estimates of the proportion of families that gained income.

We are not able to provide this information using data held separately by Inland Revenue and the Ministry of Social Development (MSD) because:

- delivery of the payments is spread across the two agencies
- ethnicity is not recorded for recipients of most of the payments administered by Inland Revenue
- families who do not receive payments are not able to be counted.

The following sections provide details of our estimation approach and results, strengths and limitations, and reasons for differences between these results and TAWA estimates.

Estimation approach

Our analysis is focussed on estimating how many families received Families Package payments, and how much their incomes changed.

When calculating how incomes changed, we incorporate any offsetting negative effects on income from other payments. This captures the effect on income of payments being:

- disestablished (as was the case with Parental Tax Credit)
- potentially reduced in value as a result of the new and increased payments (as was the case with Temporary Additional Support).

We do this to ensure the results capture the full impact of the policy changes.

We use respondents from the June 2018 quarter of the Household Labour Force Survey (HLFS) to provide us with a sample of families with children at around the time the Families Package was introduced.² The HLFS also lets us identify the ethnic groups of family members.

The definition of a family group we use is broadly analogous to that used in the tax and income support systems, being one or two parents (or caregivers in a parent role) with children under the age of 18. Parents and caregivers aged 15 or over are included.³

We add to this sample any couples or single people who did not have children at the time they responded to the survey, but appear to have been expecting a first child.⁴

This sample of families is then weighted to represent all New Zealand families using HLFS weights that have been re-calibrated to Household Economic Survey (HES) benchmarks for 2018/19.⁵

This approach is adopted due to difficulties with using the HLFS weights for the purpose of estimating the population of families. These difficulties are discussed in more detail in Box 1 below.

For our sample of families, we compare administratively recorded income in two nine-month periods:

- July 2017 to March 2018 (just prior to the first of the Families Package changes on 1 April 2018)
- July 2018 to March 2019 (when all the changes had been introduced or were phasing in).

Importantly, these estimates of the number of families affected and average income gains differ in nature from the TAWA estimates because they look at the change in actual income from one period to the next for a sample of families. In contrast, the TAWA

² Most interviewing for the June 2018 HLFS was undertaken between April and June 2018.

³ In a small number of cases a person may be a member of two families if they are both a) a parent living with their young children, and b) themselves an under 18-year-old child living with their parents. Their income will only be counted once in the estimates, however.

⁴ Based on a count of the number of families who had no children at the time of the survey but went on to receive Best Start or paid parental leave between 1 July 2018 and 31 March 2019.

⁵ HES weights are calibrated in a two-stage process. The first stage involves calibrating weights to income decile benchmarks derived from administrative sources, while the second stage calibrates weights to other population benchmarks. We only adopt the second stage of the re-calibration, and supplement the calibration with further benchmarks based on the number of families reported by Inland Revenue as receiving Working for Families payments, and the number of families with and without children who were in receipt of a main benefit, given the importance of these payments to the Families Package changes.

estimates compare simulated incomes for a sample of families in the same time period. Other points of difference are discussed in the final section of this paper.

Income data is derived from Inland Revenue and MSD administrative data sources as described in Wilson and McLeod (2021). Where income is unable to be disaggregated at a finer level than the tax year in the source data,⁶ it is assigned proportionately to our period of interest (i.e. three quarters of the total tax year's income is assigned to the July to March period of each year). Income from Working for Families tax credits is assigned to the period in which the entitlement fell, regardless of when the payment was made.⁷

In some cases, a link to the IDI cannot be established for an individual or family in the HLFS. In other cases, a link is established but no income data is identified for the respondent. We exclude families from our study if a) either parent in a family is not able to be linked to the IDI, or b) both parents are able to be linked to the IDI but neither has income data. This results in approximately five percent of HLFS families with children being excluded from our sample. Weights are adjusted to correct for this exclusion in the re-calibration process described in Box 1.

All income is adjusted for inflation and presented in 2019-dollar values.

Box 1: Re-calibrated weighting approach

Limitations of using standard HLFS weights

Our initial analysis identified several potential difficulties with using HLFS weights to estimate the incomes of families with children. In particular, the estimated number of families with children that results when using HLFS weights appears to be too high when compared with other sources (as does the estimated total number of households), while the number of families receiving a benefit or Working for Families support appears to be too low.

Several points were identified that could have led to these unusual results.

- Population benchmarks used to create HLFS weights are applied only to working-age individuals, and do not account for either the number of families and households, or their characteristics. If responding individuals have different household or family sizes or compositions than non-responding individuals, this will not necessarily be accounted for in the resulting weights. In our case, this means that the weights could have mis-represented the number of families, or the characteristics of those families, resulting in inaccurate and biased estimates.
- We estimate that the HLFS weights may result in an under-estimation of the number of adults receiving a working-aged benefit by around a third. This is estimated by linking HLFS respondents to administrative data on benefit receipt held in the IDI. HLFS weights are then used to derive an estimate of the number of people on benefit at the time of the survey, and this is compared with official statistics on the number of people on benefit and with total benefit numbers identified in the IDI. The under-estimation of adults receiving a working-aged benefit is likely to result in under-estimation of families gaining from the Families

⁶ Some income derived from IR3 tax returns and personal tax summaries is only recorded against the entire tax year.

⁷ In some cases, payments are made after the end of the tax year in which the family was entitled. In other cases, end-of-year adjustments may result in additional payments being made, or debts being raised. In all cases, these are assigned to the period in which the entitlement existed, rather than when any payment was made.

Package, as most of the changes were targeted at low- or middle-income families, including those on benefit.

- Only people living in private dwellings are surveyed for the HLFS. However, the weights are designed to represent people living in both private and non-private dwellings. This means the weights may cause families with children to be over-counted if they are less likely than average to live in non-private dwellings.
- Consistent with the primary purpose of the HLFS, which is to estimate employment and unemployment, individuals who do not have a recorded labour force status are assigned a zero HLFS weight by Stats NZ. As non-zero weights are adjusted to match population benchmarks, other respondents' weights are essentially increased to compensate for these zero-weighted respondents. Where one parent in a family has a zero weight, but another has a non-zero weight, we used the non-zero weight to represent that family, as recommended by Stats NZ. A consequence of this approach, however, is that we are likely to over-estimate the number of families in New Zealand.

Re-calibration to HES benchmarks

Due to the points identified above, we re-calibrate the HLFS weights to HES benchmarks. These benchmarks were re-developed with the expansion of the HES in 2018/19 and address several of the points identified above.⁸

We also re-calibrate to the count of families who received Working for Families tax credits in the 2018/19 tax year, and to the number of families with and without children who were in receipt of a benefit at the end of June 2018. Points to note include the following.

- HES weights are calibrated to the count of households as well as individuals. Benchmarks are broken down by region and whether the household has two adults or not. This should provide some improvement in our estimation of families, noting that the "other" household benchmark includes a mix of single adult households (including some sole parents) and households with more than two adults.
- HES now includes a benchmark to the number of people aged 18 to 64 in New Zealand who were supported by a main benefit (eg. Sole Parent Support, Jobseeker Support or Supported Living Payment) or any other MSD payment (eg. A supplementary benefit such as Accommodation Supplement) in the 2018/19 year. This should compensate, at least somewhat, for the undercounting of families supported by benefit. As discussed above, we further refine this by including benchmarks for people in receipt of a *main* benefit as of June 2018, broken down by whether or not children were included in the benefit.
- HES benchmarks are for the estimated population living in private dwellings only. This is a closer match to the population we expect to be most likely to benefit from the Families Package.
- In re-calibrating the weights, we account for people for whom a labour force status could not be defined.

⁸ The 2018/19 HES post-stratification included a first stage, where weights are re-calibrated to income quintiles. We omitted this step on the basis that we were already including additional benchmarks targeted to our study, and due to the lack of clarity that these income benchmarks would improve our estimates.

Results

332,700 families, over half of all families with children, are estimated to have received Families Package payments in 2018/19 – these families received an average of \$55 more a week from Families Package payments in 2018/19 compared with 2017/18

Table 1 presents estimates of the change in average weekly income between 2017/18 and 2018/19 for families with children aged under 18 in 2018/19. Income is broken down into four broad categories:

- families package income⁹
- employment income¹⁰
- other benefit income¹¹
- other income.

A little over half (54 percent) of families received a Families Package Payment in 2018/19. These families received an average of \$55 more a week from those payments than in the previous year, a 35 percent increase in income from this source. This contributed almost two-thirds of the total \$86 per week gain in gross income for these families over the period.

Table 1: Estimated average weekly income gain for families with children in the nine months from July 2018 compared to the equivalent period in 2017/18

By whether the family received Families Package income in the nine months from July 2018 (95% confidence intervals in brackets)

Family received Families Package in 2018/19?	No (n=2,136, N=280,800, 46%)		Yes (n=2,409, N=332,700, 54%)		Total (n=4,545, N=613,600, 100%)	
Income component	Average weekly gain ⁽¹⁾ (2019 \$)	Percentage gain	Average weekly gain ⁽¹⁾ (2019 \$)	Percentage gain	Average weekly gain ⁽¹⁾ (2019 \$)	Percentage gain
Families Package income	-\$8 (-\$9,-\$7)	-100%	\$55 (\$50,\$59)	35%	\$26 (\$23,\$29)	30%
Employment income	\$139 (\$103,\$174)	5%	\$9 (-\$12,\$31)	1%	\$68 (\$48,\$89)	4%
Other benefit income	-\$1 (-\$2,-\$1)	-33%	\$1 (-\$3,\$4)	1%	\$0 (-\$2,\$2)	-1%
Other income	\$13 (-\$29,\$56)	9%	\$21 (\$6,\$35)	52%	\$17 (-\$4,\$39)	20%
Total gross income	\$142 (\$90,\$195)	5%	\$86 (\$63,\$108)	6%	\$112 (\$86,\$137)	5%
Total net income	\$112 (\$63,\$161)	5%	\$75 (\$58,\$91)	6%	\$91 (\$67,\$116)	6%

Notes:

- (1) Comparing income received in the period July 2018 to March 2019 with income received in the period July 2017 to March 2018, after adjusting for the CPI. These income amounts are in Appendix Table A1.

⁹ Families Package payments are defined as including Family Tax Credit, In-work Tax Credit, Best Start, Parental Tax Credit, paid parental leave, Accommodation Supplement, Winter Energy Payment, Orphan's Benefit, Unsupported Child Benefit. We also include Temporary Additional Support because of the flow-on effects on receipt of this payment.

¹⁰ Including income from wages and salaries, and self-employment (including schedular payments).

¹¹ Excluding payments defined as Families Package payments.

Some families who did not receive a Families Package payment in 2018/19 had received income from this source in the previous year. These families lost \$8 per week in income from this source on average between 2017/18 and 2018/19. Employment income is estimated to have increased by \$139 per week on average for these families, contributing towards an overall average income gain of \$142 per week.

Overall, families in total are estimated to have experienced a four percent increase in employment income on average, equivalent to \$68 per week, between 2017/18 and 2018/19. This strong growth in employment income will have resulted in lower numbers of recipient families and smaller average payments from the Families Package than were expected prior to its implementation.

It should be noted that increases in 'other income' are largely driven by changes in the tax system. From the 2019 tax year, Personal Tax Summaries were discontinued, and automatic assessments are being undertaken in their place. This resulted in some sources of income being identifiable in the IDI from the 2019 tax year onwards which would not have been identified previously.¹²

Families who received Families Package payments in 2018/19 received a six percent increase in gross and net weekly income between 2017/18 and 2018/19 on average. This is similar in percentage increase terms to the income gains experienced by families that did not receive the Families Package, because of the gains in employment income this second group of families experienced over the period.

We are unable to say how this finding influenced relative income measures of child poverty being monitored by Stats NZ, and relative income indicators of inequality being monitored by MSD.¹³ This is because poverty and incomes monitoring are also influenced by income changes for families and households without dependent children, and by shifts in the overall distribution of equivalised household income.

In addition, our analysis does not quantify the effect of the Families Package, all other things being equal. The findings do not allow conclusions to be drawn about the success of the Families Package in achieving its poverty reduction aims.

¹² Information from automatic assessments is now recorded in the Personal Tax Summary data in the IDI. This has led to greater capture of some sources of income, including interest and dividend income. For details of the associated reform, see <https://media.ird.govt.nz/articles/inland-revenue-launches-public-campaign-to-explain-the-biggest-tax-changes-in-a-generation/>

¹³ Latest monitoring reports can be found at <https://www.stats.govt.nz/information-releases/child-poverty-statistics-year-ended-june-2020> and <https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/monitoring/household-incomes/index.html>

Three quarters of the increase in Families Package income came from Family Tax Credit and Accommodation Supplement

For families that received Families Package income in 2018/19, Table 2 presents a breakdown of the change in income by component. Over half of their \$55 average increase in Families Package income was due to increased Family Tax Credit income, while around a fifth was due to increases in Accommodation Supplement payments. The next largest gains were from paid parental leave and the In-work Tax Credit. Best Start, the Winter Energy Payment and Orphan's Benefit / Unsupported Child Benefit contributed smaller gains, of around \$1 to \$3 a week on average. There were similarly small losses of income from Parental Tax Credit and Temporary Additional Support.

Table 2: Estimated average Families Package income gains by payment type

For families that received Families Package income in the nine months from July 2018 (95% confidence intervals in brackets)

Families Package component	Average weekly gain comparing 2017/18 and 2018/19 ⁽¹⁾ (2019 \$)	Percentage gain
Paid parental leave	\$4 (\$1,\$8)	26%
Accommodation Supplement	\$12 (\$11,\$14)	49%
Winter Energy Payment	\$3 (\$2,\$3)	N/A
Orphan's Benefit / Unsupported Child Benefit	\$1 (\$0,\$1)	37%
Temporary Additional Support	-\$2 (-\$3,-\$2)	-45%
Family Tax Credit	\$33 (\$31,\$35)	44%
In-work Tax Credit	\$3 (\$3,\$4)	12%
Best Start Tax Credit	\$2 (\$2,\$2)	N/A
Parental Tax Credit	-\$1 (-\$2,-\$1)	-92%
Total Families Package payment income	\$55 (\$50,\$59)	35%

Notes:

- (1) Comparing income received in the period July 2018 to March 2019 with income received in the period July 2017 to March 2018, after adjusting for the CPI. These income amounts are in Appendix Table A2.

More than two thirds of families with a Māori or Pacific parent or caregiver received Families Package payments in 2018/19

Table 3 shows the estimated number and percentage of families receiving Families Package payments and the average income gain in the first nine months for these families, by the ethnic groups of the adult family members.

Consistent with differences in family size and socio-economic position, over two-thirds of families with a Pacific or Māori parent or caregiver received Families Package payments compared with just under half of families without a Māori or Pacific adult parent or caregiver (71 percent compared with 47 percent).

The estimated average gain in Families Package income for recipient families was \$66 per week for families with a Pacific parent or caregiver, \$59 per week for families with a Māori parent or caregiver, and \$51 per week for families without a Māori or Pacific adult parent or caregiver.

Table 3: Estimated receipt and average Families Package income gains by ethnic group (95% confidence intervals in brackets)

Any adult family member belonging to ethnic group:	Number of responding families in receipt of Families Package payments in the 9 months from July 2018	Estimated number of families in receipt of Families Package payments in the 9 months from July 2018	Percentage of families in receipt of Families Package payments in the 9 months from July 2018	Average weekly gain in Families Package payments for recipient families comparing 2017/18 and 2018/19 ⁽¹⁾ (2019 \$)	Gain as percentage of Families Package payment income for recipient families	Gain as percentage of total gross income for recipient families
Māori	639	95,900	71%	\$59 (\$51,\$68)	33%	5%
Pacific	351	50,700	71%	\$66 (\$53,\$79)	34%	5%
Asian	342	48,000	47%	\$46 (\$31,\$61)	34%	3%
European	1,569	211,200	50%	\$53 (\$46,\$59)	36%	3%
MELAA ⁽²⁾	54	7,300	58%	\$71 (\$46,\$96)	45%	6%
Other	57	7,000	51%	\$21 (-\$10,\$51)	16%	1%
Not Māori and Not Pacific ⁽³⁾	1,500	198,400	47%	\$51 (\$45,\$56)	37%	3%
Total	2,409	332,700	54%	\$55 (\$50,\$59)	35%	4%

Notes:

- (1) Comparing income received in the period July 2018 to March 2019 with income received in the period July 2017 to March 2018, after adjusting for the CPI. These income amounts are in Appendix Table A3. Appendix Tables A6, A7 and A8 provide further detail on estimated income by source for families with a Māori parent or caregiver (Table A6), a Pacific parent or caregiver (Table A7) and for families no parent or caregiver identifying as being of either Māori or Pacific ethnicity (Table A8).
- (2) MELAA = Middle Eastern, Latin American or African.
- (3) Families with no parent or caregiver identifying as being of either Māori or Pacific ethnicity.

Consistent with the policy design, all families with children supported by main benefits in 2018/19 gained income and these families had the highest average income gain from Families Package payments

Table 4 shows the estimated number and percentage of families receiving Families Package payments and the average income gain in the first nine months for these families, by whether the family was supported by a main benefit (such as Sole Parent Support or Jobseeker support) at the end of June 2018 (based on linked MSD data).

All families supported by a main benefit received Families Package payments. Their average income gain in Families Package income was \$74 per week. Just under half of families not supported by benefit received payments. The average gain in Families Package income for recipient families in this second group was \$49 per week.

Table 4: Estimated receipt and average Families Package income gains by benefit status and family type

(95% confidence intervals in brackets)

Benefit status and family type:	Number of responding families in receipt of Families Package payments in the 9 months from July 2018	Estimated number of families in receipt of Families Package payments in the 9 months from July 2018	Percentage of families in receipt of Families Package payments in the 9 months from July 2018	Average weekly gain in Families Package payments for recipient families comparing 2017/18 and 2018/19 ⁽¹⁾ (2019 \$)	Gain as percentage of Families Package payment income for recipient families	Gain as percentage of total gross income for recipient families
Benefit status						
Not supported by a main benefit	1,896	252,000	47%	\$49 (\$43,\$54)	36%	3%
Supported by a main benefit	513	80,800	100%	\$74 (\$66,\$82)	34%	10%
Total	2,409	332,700	54%	\$55 (\$50,\$59)	35%	4%
Family type						
Two parent family	1,554	222,100	46%	\$53 (\$47,\$60)	38%	3%
Sole parent family	858	110,600	82%	\$57 (\$52,\$63)	31%	7%
Total	2,409	332,700	54%	\$55 (\$50,\$59)	35%	4%

Notes:

(1) Comparing income received in the period July 2018 to March 2019 with income received in the period July 2017 to March 2018, after adjusting for the CPI. These income amounts are in Appendix Table A4.

Two-thirds of recipient families had two parents or caregivers and average dollar gains were similar for sole and two parent families

Although sole parent families were more likely than two parent families to receive Families Package payments (82 percent compared with 46 percent), they made up the minority (a third) of families receiving payments.

The average gain in Families Package income for recipient families was similar for the two groups of families (\$53 per week for two parent families and \$57 per week for sole parent

families). The amount represented a larger proportionate gain in income from Families Package payments for two parent families than sole parent families (38 percent compared with 31 percent). It represented a larger proportionate gain in total income for sole parent families (seven percent compared with three percent).

Families with children under 18 gained more than single people and couples without children

Table 5 compares the estimates for families with children aged under 18 with those for single people and couples with no children under 18 (including those aged 65 and over).

Most Families Package payments considered in our analysis are only available to families with children. The exceptions are:

- Accommodation Supplement, which is also available to people without children
- the Winter Energy Payment, which is automatically paid to people receiving a main benefit, New Zealand Superannuation or Veteran’s Pension.

Temporary Additional Support payments (which were potentially affected by increased Families Package payments) are also available to families without children.

Thirty six percent of single people and couples without children received Families Package payments, and the average income gain from these payments for those who received them was \$16 per week.

Table 5: Estimated receipt and average Families Package income gains by benefit status and family type

All families with a person aged 15 years and over (95% confidence intervals in brackets)

Children aged under 18:	Number of responding families in receipt of Families Package payments in the 9 months from July 2018	Estimated number of families in receipt of Families Package payments in the 9 months from July 2018	Percentage of families in receipt of Families Package payments in the 9 months from July 2018	Average weekly gain in Families Package payments for recipient families comparing 2017/18 and 2018/19 ⁽¹⁾ (2019 \$)	Gain as percentage of Families Package payment income for recipient families	Gain as percentage of total gross income for recipient families
Yes	2,409	332,700	54%	\$55 (\$50,\$59)	35%	4%
No:						
Couple	2,328	320,500	44%	\$16 (\$14,\$17)	73%	1%
Single person	3,312	432,600	32%	\$15 (\$14,\$17)	48%	3%
Total	5,643	753,100	36%	\$16 (\$15,\$16)	56%	2%
Total	8,052	1,085,800	40%	\$28 (\$26,\$29)	41%	3%

Notes:

(1) Comparing income received in the period July 2018 to March 2019 with income received in the period July 2017 to March 2018, after adjusting for the CPI. These income amounts are in Appendix Table A5.

Strengths and limitations

Totals compare well with published Working for Families tax credit and benefit figures

To assess the reliability of our results, we compare our estimates for the full 2018/19 tax year for the weighted sample of families with figures on Working for Families payments published by Inland Revenue.¹⁴ These comparisons are presented in Table 6 below. Almost all our estimates are close to the official published figures for both the number of families receiving the payment and the average weekly payment amount.

Only one comparison, the number of Best Start recipient families in the 2018/19 tax year, diverges by more than 10 percent. Although we appear to over-estimate the number of families that received Best Start by almost a fifth, the published counts do not include families for whom MSD is the paying agency for Best Start.¹⁵ In addition, the published average weekly Family Tax Credit payment includes the value of MSD's Best Start payments because the two payments are not separately reported when MSD files Employer Information returns to Inland Revenue.¹⁶

Table 6: Comparison between the number of recipient families and weekly dollars paid estimated using HLFS and official figures published by IR, 2018/19 tax year

Families Package component:	HLFS/IDI estimates		Published figures		% difference	
	Number of recipient families	Average weekly payment	Number of recipient families	Average weekly payment	Number of recipient families	Average weekly payment
Family Tax Credit	279,800	\$137	289,309	\$132	-3%	4%
In-work Tax Credit	206,600	\$59	203,220	\$57	2%	3%
Best Start Tax Credit	31,900	\$16	27,071	\$16	18%	0%
Parental Tax Credit	4,100	\$31	4,278	\$33	-4%	-7%

The results from this comparison suggest that, at a high level, the approach we use to estimate the change in family incomes after the introduction of the Families Package provides a reasonable indication of recipient numbers, and of the scale of the increase in payments.

By re-weighting our sample to the number of families receiving a main benefit as at the end of June 2018 we get a similar, but slightly smaller number of benefit families compared to official figures. Our estimated count of families supported by benefit at the end of June 2018 is 80,800, while the actual count for June 2018 was 91,000.¹⁷ Using the original HLFS weights resulted in estimates of fewer than 60,000 benefit families.

The estimates should be viewed as indicative

A limitation of our recalibration approach is that excessive corrections could result in the introduction of additional bias, particularly if respondents in the group of interest (for example families supported by a main benefit) have different characteristics than non-respondents in the group. More generally, post-stratification (the calibration of weights to population benchmarks) usually involves a trade-off between gains in accuracy and a loss

¹⁴ Sourced from <https://www.ird.govt.nz/about-us/tax-statistics/social-policy/wfftc>.

¹⁵ Source: Personal Correspondence from Inland Revenue dated 9 March 2021.

¹⁶ Source: Personal Correspondence from Inland Revenue dated 9 March 2021.

¹⁷ Based on the count of working-age main benefit recipients with children included in their benefit.

of precision, as well as introducing the risk that the results may be overly impacted by outliers.

Estimates of the impact of the package, all else being equal, are not provided

The estimates presented here focus on the actual changes in income that occurred but, as noted above, they do not seek to estimate the impact of the package on incomes, *all else being equal*. There is no attempt to estimate the counterfactual. That is, there is no attempt to estimate what would have occurred in the absence of the package, taking into account:

- all the other factors affecting the incomes of different groups of families over time
- possible behavioural responses to the Families Package.

Some of the change in income we estimate occurring could be due to possible labour supply and family composition effects of the Families Package. For example, the increase in Families Package payments may have had the effect of reducing income from employment. We make no attempt here to separate out these possible effects.

There is a limited view of what defines a 'family'

Another limitation is that we focus only on family groups as they are defined in the benefit and tax systems. A useful future extension would be to explore the income change for other types of groupings within households. For Māori, this could involve use of the 2018 Stats NZ Te Kupenga survey. This survey is an important resource that can now be linked with administrative data in the IDI on incomes, providing new opportunities for analysis.

The estimates only cover the initial implementation period and do not capture the full effects of the package

The period we look at only covers the first nine months of the Families Package. It precedes the full implementation of Best Start and the Winter Energy Payment (which was paid for a shortened period in 2018), and the 2020 paid parental leave extension. As a result, these estimates understate the full gains in payments, which would not be seen in the data until after Best Start was fully implemented and reached a 'steady state'. This happened after the first birth cohorts to become eligible for the payment turned three and began ageing out of eligibility from mid-2021.

The estimates represent only one of the possible approaches to estimating effects on incomes

Finally, there are a number of possible alternative approaches to estimating gains in family incomes from the Families Package. Our approach uses longitudinal measures of income before and after the implementation of the Families Package for the same sample of families.

One limitation of this approach is that a small part of our estimated increase in income will be simply due to parents being a year older and with more labour market experience. Our headline estimates of 332,700 families receiving an additional \$55 per week will also miss the loss in income and receipt for the small number of families whose children aged out of the payments or who lost entitlement through increased income. This loss of income is reflected in our estimated \$8 per week of lost Families Package income among the 46 percent of families who did not receive a payment in the nine months to March 2019, however.

One alternative approach which would get around these limitations would be to estimate the average income of separate samples of families before and after the implementation of the package. By relying on two cross-sectional samples, however, we would lose the precision we gain from comparing the same families across two periods of time. This means that our estimates would be much less precise and have far wider confidence intervals.

Comparison with earlier Treasury estimates

As noted in the introduction, prior to its implementation, the Treasury used its TAWA microsimulation model to estimate the impact of the Families Package on family incomes in 2018/19, 2019/20, and 2020/21. The Treasury estimated that 385,000 families would benefit from the package in 2018/19, by an average of \$66. These estimates are similar to but somewhat higher than our estimates of 332,700 families benefitting by \$55 per week.

Notwithstanding potential limitations of the estimates in this paper, some of which will also affect the Treasury estimates, the two sets of estimates are not directly comparable for other reasons.

- The Treasury results were based on data from the Household Economic Survey (HES). This survey is the best survey source of income and expenditure information for New Zealand families. However, it has until recently had a reasonably small sample, with correspondingly high sampling errors for some population sub-groups. Our approach takes advantage of the larger sample of families surveyed in the HLFS, and supplements this with administrative income data.
- We use the HLFS survey as at a point in 2018, while TAWA generally needs to use a past year's data to model future periods. The pre-implementation TAWA estimates were based on 2015 HES data.
- The TAWA estimates are prospective estimates which assume the economic context and policy settings are either held 'static' from the time the estimates were made (as in the case of tax thresholds) or are themselves estimated according to other forecasts (as in the case of inflation). People's personal situations are also held constant as they were at the time they were surveyed for HES, which for the pre-implementation estimates was between July 2014 and June 2015.
- The estimates presented in this paper, in contrast, are retrospective estimates of how family incomes actually changed over the two time periods we examine (July 2017 to March 2018 and July 2018 to March 2019) for families surveyed around the time the Families Package was introduced (the June 2018 quarter).
- As a result of using survey data from the time the Families Package was implemented (rather than the 2014-15 data used in TAWA), our estimates capture the effects of the increases in parents' earnings and the reduction in parents' receipt of main benefits that occurred over the period (which would have caused entitlements to be lower than expected). Our estimates also capture changes in the size and composition of the population that had occurred by the time the policy was implemented.
- As noted, we examine a period when the Families Package was not yet fully implemented. Full implementation would mean the Winter Energy Period applies for the full winter period, Best Start is fully mature, with recipients with children aged one to three receiving it, and a second paid parental leave increase is implemented.
- Additionally, the TAWA model assumed that all people who became eligible for the package during the year were eligible for payments for the entire year, resulting in some over-counting of entitlements.

- Our approach examines actual receipt of payments, while the TAWA model estimates payments based on reported income and family circumstances. The TAWA model assumes full take-up of Working for Families entitlements and models take-up of Accommodation Supplement based on historical patterns for beneficiaries and non-beneficiaries.
- As with HLFS, HES has historically under-represented families receiving a benefit (this may no longer be the case, or occur to the same extent, with new HES benchmarks introduced from 2018/19). Perry (2019) reported that HES formerly underestimated the number of people being supported by benefits by around a third (p22), similar to our own calculations using the original HLFS weights. We make some adjustment for this under-counting by using 2018/19 HES benchmarks and including additional benefit benchmarks of our own, however the TAWA model applied different benchmarks to calibrate HES weights to the benefit population.
- The TAWA model estimates were based on reported income from HES respondents. This has both advantages and disadvantages when compared with the administrative income used in this paper. On the one hand, the HES asked respondents about a comprehensive range of income sources, including (at least in theory) untaxed income, such as that earned 'under the table'. Some of these sources are not available in administrative data. On the other hand, survey-based income is reliant on people's memory of the income they earned and their willingness to report that income.

The TAWA model has been improved since the pre-implementation Families Package modelling was undertaken. The new model takes advantage of administrative data in the IDI and uses more recent HES data, providing a larger sample.

It is important not to interpret any differences in estimated income gains between this report (which examines actual gains) and TAWA simulations (which provide 'static' estimates of income gains excluding possible behavioural effects) as indicating the scale of possible behavioural effects of the Families Package. As described above, many factors other than possible behavioural effects might account for differences in estimates between the two approaches.

Appendix

Table A1: Estimated average weekly income for families with children in the nine months from July 2018 and the equivalent period in 2017/18

By whether the family received Families Package income in the nine months from July 2018 (standard errors in square brackets)

Family received Families Package in 2019?	No (n=2,136, N=280,800, 46%)		Yes (n=2,409, N=332,700, 54%)		Total (n=4,545, N=613,600, 100%)	
Income component	Average weekly income 2017/18	Average weekly income 2018/19	Average weekly income 2017/18	Average weekly income 2018/19	Average weekly income 2017/18	Average weekly income 2018/19
Families Package income	8 [0.7]	0 [0.0]	155 [2.6]	210 [2.9]	88 [1.7]	114 [2.0]
Employment income	2,779 [46.0]	2,917 [50.4]	1,140 [26.7]	1,149 [22.2]	1,890 [26.5]	1,958 [26.8]
Benefit income	4 [0.6]	3 [0.4]	99 [2.9]	100 [2.6]	56 [1.8]	55 [1.5]
Other income	147 [44.1]	160 [28.8]	40 [4.6]	61 [9.4]	89 [20.4]	106 [14.7]
Total gross income	2,937 [66.0]	3,080 [58.6]	1,434 [25.1]	1,520 [23.0]	2,122 [33.3]	2,234 [31.1]
Total net income	2,197 [45.3]	2,309 [40.4]	1,180 [18.0]	1,254 [16.3]	1,646 [22.7]	1,737 [21.7]

Table A2: Estimated average Families Package income in the nine months from July 2018 and the equivalent period in 2017/18 by payment type

For families that received Families Package income in the nine months from July 2018 (standard errors in square brackets)

Families Package component	Average weekly payments 2017/18	Average weekly payments 2018/19
Paid parental leave	17 [1.2]	22 [1.5]
Accommodation supplement	25 [1.1]	37 [1.7]
Winter Energy Payment	0 [0.0]	3 [0.1]
Orphan's benefit / Unsupported child benefit	2 [0.5]	3 [0.6]
Temporary Additional Support	5 [0.4]	3 [0.3]
Family Tax Credit	75 [1.8]	107 [2.1]
In Work Tax Credit	30 [0.6]	33 [0.7]
Best Start Tax Credit	0 [0.0]	2 [0.2]
Parental Tax Credit	1 [0.2]	0 [0.0]
Total Families Package payment income	155 [2.6]	210 [2.9]

Table A3: Estimated average Families Package income and total gross income in the nine months from July 2018 and the equivalent period in 2017/18 by ethnic group
(standard errors in square brackets)

Any adult family member belonging to ethnic group:	Average weekly FP payments 2017/18	Average weekly FP payments 2018/19	Average weekly total gross income 2017/18	Average weekly total gross income 2018/19
Māori	179 [5.8]	238 [7.4]	1,225 [35.6]	1,357 [35.7]
Pacific	192 [7.0]	258 [8.9]	1,238 [39.8]	1,355 [39.3]
Asian	136 [7.7]	183 [8.0]	1,436 [61.2]	1,539 [64.6]
European	145 [3.6]	198 [4.5]	1,586 [39.4]	1,655 [35.5]
MELAA	156 [20.0]	226 [26.5]	1,164 [113.8]	1,272 [115.1]
Other	129 [13.1]	149 [18.9]	1,760 [130.5]	1,873 [152.5]
Non-Māori / Non-Pacific*	137 [3.4]	188 [3.7]	1,580 [40.5]	1,637 [37.6]
Total	155 [2.6]	210 [2.9]	1,434 [25.1]	1,520 [23.0]

Table A4: Estimated average Families Package income and total gross income in the nine months from July 2018 and the equivalent period in 2017/18 by benefit status and family type
(standard errors in square brackets)

Benefit status and family type:	Average weekly FP payments 2017/18	Average weekly FP payments 2018/19	Average weekly total gross income 2017/18	Average weekly total gross income 2018/19
Benefit status				
Not supported by benefit	136 [2.9]	184 [3.4]	1,650 [31.4]	1,731 [29.2]
Supported by benefit	217 [6.2]	291 [7.5]	761 [17.9]	862 [17.6]
Total	155 [2.6]	210 [2.9]	1,434 [25.1]	1,520 [23.0]
Family type				
Two parent family	140 [3.5]	193 [4.0]	1,758 [34.7]	1,839 [31.4]
Sole parent family	187 [5.2]	244 [5.1]	785 [13.9]	879 [14.6]
Total	155 [2.6]	210 [2.9]	1,434 [25.1]	1,520 [23.0]

Table A5: Estimated average Families Package income and total gross income in the nine months from July 2018 and the equivalent period in 2017/18 by benefit status and family type

All families with a person aged 15 years and over (standard errors in square brackets)

Children aged under 18:	Average weekly FP payments 2017/18	Average weekly FP payments 2018/19	Average weekly total gross income 2017/18	Average weekly total gross income 2018/19
Yes	155 [2.6]	210 [2.9]	1,434 [25.1]	1,520 [23.0]
No				
Couple	22 [1.6]	37 [2.1]	1,490 [42.1]	1,507 [39.3]
Single person	32 [1.6]	48 [2.0]	539 [8.8]	568 [7.7]
Total	28 [1.1]	43 [1.4]	944 [18.7]	968 [17.3]
Total	67 [1.0]	94 [1.1]	1,094 [14.2]	1,137 [13.3]

Table A6: Estimated average weekly income for families with children in the nine months from July 2018 and the equivalent period in 2017/18, where any parent or caregiver is Māori

By whether the family received Families Package income in the nine months from July 2018 (standard errors in square brackets)

Family received Families Package in 2019?	No (n=276, N=38,800, 29%)		Yes (n=639, N=95,900, 71%)		Total (n=918, N=134,700, 100%)	
	Average weekly income 2017/18	Average weekly income 2018/19	Average weekly income 2017/18	Average weekly income 2018/19	Average weekly income 2017/18	Average weekly income 2018/19
Families Package income	15 [3.1]	0 [0.0]	179 [5.8]	238 [7.4]	131 [4.8]	169 [6.3]
Employment income	2,500 [80.9]	2,616 [82.6]	844 [36.1]	912 [36.3]	1,321 [40.5]	1,402 [42.4]
Benefit income	12 [3.4]	7 [2.3]	162 [8.6]	153 [7.4]	119 [6.6]	111 [5.7]
Other income	28 [26.6]	22 [26.5]	41 [9.0]	55 [10.4]	37 [10.0]	45 [10.7]
Total gross income	2,554 [69.7]	2,644 [73.7]	1,225 [35.6]	1,357 [35.7]	1,608 [36.1]	1,728 [38.2]
Total net income	1,970 [50.5]	2,027 [53.5]	1,035 [27.9]	1,150 [28.1]	1,304 [27.1]	1,402 [28.8]

Table A7: Estimated average weekly income for families with children in the nine months from July 2018 and the equivalent period in 2017/18, where any parent or caregiver is Pacific

By whether the family received Families Package income in the nine months from July 2018 (standard errors in square brackets)

Family received Families Package in 2019?	No (n=159, N=21,100, 29%)		Yes (n=351, N=50,700, 71%)		Total (n=513, N=71,800, 100%)	
	Average weekly income 2017/18	Average weekly income 2018/19	Average weekly income 2017/18	Average weekly income 2018/19	Average weekly income 2017/18	Average weekly income 2018/19
Families Package income	13 [3.7]	0 [0.0]	192 [7.0]	258 [8.9]	139 [6.3]	182 [8.4]
Employment income	2,186 [126.9]	2,278 [121.0]	902 [45.5]	938 [46.2]	1,279 [58.1]	1,331 [57.7]
Benefit income	5 [1.9]	1 [0.7]	110 [9.6]	124 [10.6]	79 [7.1]	88 [7.9]
Other income	20 [20.6]	33 [18.1]	33 [7.0]	35 [6.7]	29 [7.4]	34 [6.8]
Total gross income	2,223 [120.0]	2,313 [116.4]	1,238 [39.8]	1,355 [39.3]	1,527 [50.0]	1,636 [51.4]
Total net income	1,727 [88.8]	1,785 [85.2]	1,045 [30.3]	1,149 [29.7]	1,245 [36.3]	1,336 [37.3]

Table A8: Estimated average weekly income for families with children in the nine months from July 2018 and the equivalent period in 2017/18, where neither parent or caregiver is Māori or Pacific

By whether the family received Families Package income in the nine months from July 2018 (standard errors in square brackets)

Family received Families Package in 2019?	No (n=1,731, N=225,300, 53%)		Yes (n=1,500, N=198,400, 47%)		Total (n=3,231, N=423,800, 100%)	
	Average weekly income 2017/18	Average weekly income 2018/19	Average weekly income 2017/18	Average weekly income 2018/19	Average weekly income 2017/18	Average weekly income 2018/19
Families Package income	7 [0.7]	0 [0.0]	137 [3.4]	188 [3.7]	68 [1.8]	88 [2.1]
Employment income	2,869 [53.7]	3,019 [60.7]	1,333 [42.5]	1,309 [36.9]	2,150 [38.4]	2,218 [40.0]
Benefit income	3 [0.5]	2 [0.4]	69 [3.7]	71 [3.7]	34 [1.9]	35 [1.9]
Other income	176 [54.8]	193 [35.6]	41 [6.4]	69 [15.2]	113 [29.5]	135 [21.1]
Total gross income	3,055 [78.9]	3,213 [71.0]	1,580 [40.5]	1,637 [37.6]	2,365 [49.2]	2,475 [45.5]
Total net income	2,270 [55.2]	2,397 [49.1]	1,282 [28.8]	1,331 [26.3]	1,807 [34.2]	1,898 [31.8]

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