MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Te Kāwanatanga o Aotearoa
New Zealand Government

Underpayment and Low Payment of Workers on Essential Skills Visas

JUNE 2022

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
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Summary

The underpayment of temporary migrant workers is a proxy measure for assessing the scale of one aspect of migrant exploitation. It is measured in this report through calculations performed on tax data, taking into account assumptions about how many hours migrants on Essential Skills visas should be working to fulfil the conditions of their visa. It is not a comprehensive indicator of this aspect of temporary migrant exploitation, but it does:

- provide an indicative measure of changes in exploitation patterns over time
- highlight worker characteristics that may be associated with a greater risk of exploitation
- fill a gap in the evidence base, as few alternative measures of exploitation are available and data in this area is extremely difficult to collect.

The measures used in this report are derived from data collected through the administration of the tax and immigration systems and linked anonymously by Stats NZ for statistical and research purposes.

Overall, **underpayment rates of workers on Essential Skills visas have significantly fallen** over time – from 2.3 per cent in the 2008 tax year to 0.7 per cent in the 2020 tax year.

That said, **underpayment rates are higher than average for some groups of workers**, including migrants:

- aged 25 and under
- who are female
- from Samoa and Tonga
- working in certain occupations such as café and restaurant managers and retail workers
- working in smaller firms
- working in the accommodation and food services industry
- working in Otago or Manawatū–Whanganui.

Indian migrants are the largest group of migrants who are underpaid or low paid because, at least in part, they are one of the largest groups of migrants in New Zealand.

Results also suggest that workers who receive low payments tend to have similar characteristics to those who are underpaid.

The method we've used to measure underpayment and low payment has limitations, but these results are useful and show the potential for this data to inform future migration research on exploitation.

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1. Background

The purpose of this report is to quantify one aspect of migrant exploitation

In September 2018, Cabinet agreed to take serious action on migrant exploitation, particularly of international students. A policy and operational review – the Temporary Migrant Worker Exploitation Review – was initiated. The Ministry of Business, Innovation and Employment (MBIE) led this review[1].

To support the review, MBIE commissioned this current report to quantify the exploitation of workers over time, determine the industries most affected and identify the characteristics of the affected workers.

Measuring worker exploitation is challenging

There are significant methodological challenges in attempting to accurately measure the extent of migrant worker exploitation in New Zealand. The hidden nature of this illegal activity and the difficulties of accessing migrants willing to participate in research make data collection difficult.

One measure is to calculate the extent of what appears to be very low pay among temporary workers on Essential Skills visas. The measure uses linked Inland Revenue tax data and MBIE migration data held in Stats NZ's Integrated Data Infrastructure (IDI) to identify characteristics associated with Essential Skills workers being paid below a specified threshold.

This is not a comprehensive indicator of the level of this aspect of temporary migrant exploitation because we cannot distinguish between people who are paid below the minimum hourly rate and people who are getting fewer hours of work than their visa requires. The term 'underpayment' is used to mean both of these forms of exploitation.

Definitions of underpayment and low-payment rates emerged in response to methodological challenges

To be approved for an Essential Skills visa, a person must show they have a genuine offer of full-time employment (at least 30 hours per week) in New Zealand and they must be paid at least the minimum wage.

Workers who fail to meet these criteria must be doing one or more of the following things:

- being paid less than the legal adult minimum wage for the hours they worked
- not paying tax on some or all of their income
- working fewer than 30 hours per week, in breach of their visa conditions.

On the assumption that the first of these three reasons applies in most cases, we developed definitions for the underpayment rate and low-payment rate.

The proportion of workers who earn less than 30 times the minimum wage per hour each week is the **underpayment rate.** It is likely that these workers are in breach of minimum employment or visa conditions; they would not be in breach only if they were working less than 30 hours a week.

[1] MBIE (2021, 1 July) Addressing temporary migrant worker exploitation (webpage). For more background on the policy, see Appendix A.

The proportion of workers who earn below 40 times the minimum wage per hour each week is the **low-payment rate**. This measure includes all those who are underpaid, but also includes the additional group of people would appear to be working between 30 and 40 hours a week.

The low-pay measure uses a threshold that is looser than that used for the underpayment measure (discussed in Appendix B). Many workers earning under this rate will be underpaid, while others may just be on relatively low legal pay rates and working fewer than 40 hours a week. If workers were paid under the minimum wage but working long hours (that is, more than 40 hours a week), they may not be picked up by this measure.

These measures are only indicative of one aspect of worker exploitation. They are not conclusive, as they cannot capture all sources of underpayment and will miss some underpayments; nor do they capture other forms of exploitative practices (such as withholding of passports or bullying) or non-compliance with visa conditions.

2. Findings on underpayment

Overall, year-by-year results suggest underpayment and low-payment rates are decreasing

We analysed the underpayment and low-payment rates of Essential Skills workers over the tax years 2008 to 2020 (that is, years ended 31 March).

Figure 1 shows that underpayment and low payment are occurring less over time[2]. In summary, from 2008 to 2020, the:

- underpayment rate fell from 2.3 per cent to 0.7 per cent
- low-payment rate increased from 6.8 per cent in 2008 to 7.8 per cent in 2010, but then fell to 4.3 per cent in 2020.

These reductions are consistent with an increased focus on enforcement of employment standards and policy changes to reduce very low skilled temporary migration[3].

Underpayment has also been covered as a topic in the annual Migrant Survey. While it is difficult to compare the results of the two studies due to methodological differences, the Migrant Survey's findings are broadly consistent with those in this report. In the 2018 and 2019 calendar years, the proportion of migrants who reported being paid below the minimum wage was 2 per cent and 3 per cent, respectively[4]. While the Migrant Survey is of a variety of migrant types, no statistically significant difference was noted by migrant category, suggesting these figures are applicable to Essential Skills migrants.

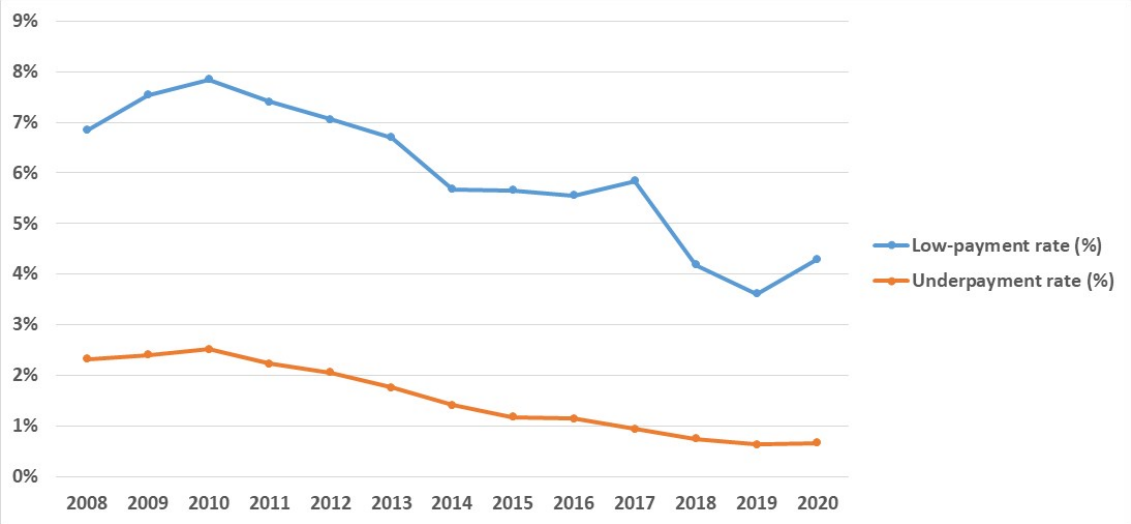
Policy and operational changes in the period covered by the analysis may be associated with these declines (see further Appendix A). Other explanatory factors might include wider macroeconomic changes in the labour market (for example, worker shortages) and the impact of changes in the MBIE Labour Inspectorate in general (for example, different approaches to enforcement).

2 None of the results presented in this report are official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI), which Stats NZ manages. For more information about the IDI, see Stats NZ (2019, 23 April) Integrated data (webpage). 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.

3 See, for example, Ministry of Business, Innovation and Employment (2013) *Regulatory Impact Statement: Protecting migrant workers from exploitation – agency disclosure statement*. Wellington: The Treasury; Ministry of Business, Innovation and Employment (2021, 1 July) Addressing temporary migrant worker exploitation (webpage).

4 C Palmer and J Varcoe (2021) *Settling in New Zealand: Migrant Survey trends from 2015 to 2019*. Wellington: MBIE.

Figure 1: Underpayment and low-payment rates of Essential Skills workers, 2008–2020 (tax years)



Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Improvements in underpayment and low-payment rates are not universal; many workers still experience underpayment and low payment

Across all Essential Skills migrant workers, the rate of underpayment has considerably decreased. Nevertheless, some workers are more likely to be low paid than others and reductions over time are not equally distributed across different groups of workers.

We compared underpayment rates for different groups over four analysis periods during the 2008 to 2020 tax years[5]. The main findings are outlined next.

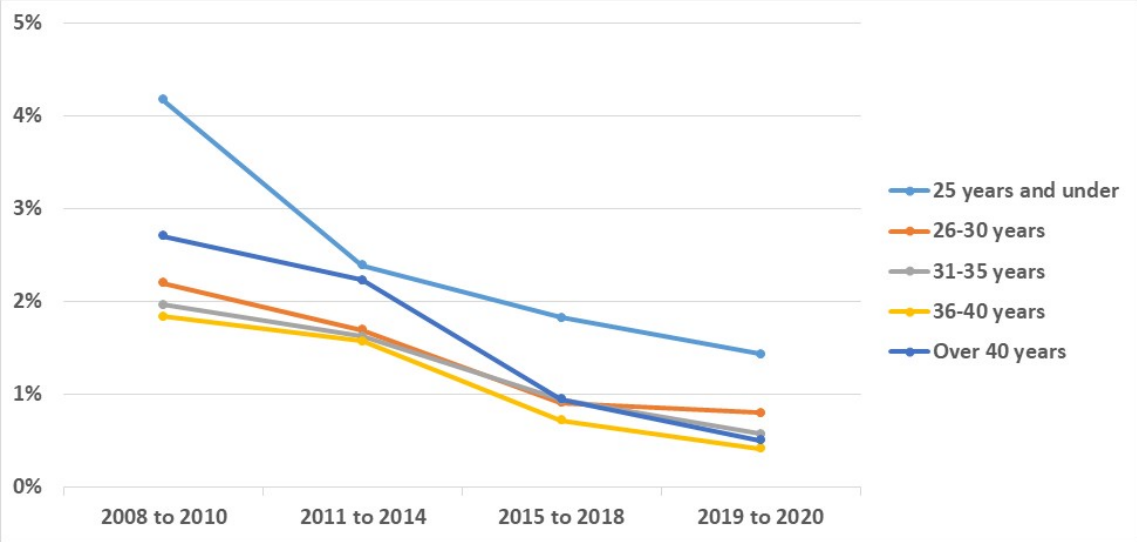
Workers aged 36–40 were consistently less likely to be underpaid over all periods

Workers aged 25 and under and aged over 40 were more likely than other workers to be underpaid in the first two analysis periods (2008–2010 and 2011–2014), but these patterns changed over time and by 2019–2020, workers over 40 had the second lowest rate of underpayment.

However, the differences between age groups were considerably smaller in the most recent period, 2019–2020 (see Figure 2).

[5] Four distinct analysis periods were created by aggregating tax years: the three-year period 2008–2010; the two following four-year periods 2011–2014 and 2015–2018; and the two most recent years pre-COVID-19 (2019 and 2020).

Figure 2: Underpayment rates by age, by analysis period (tax years)



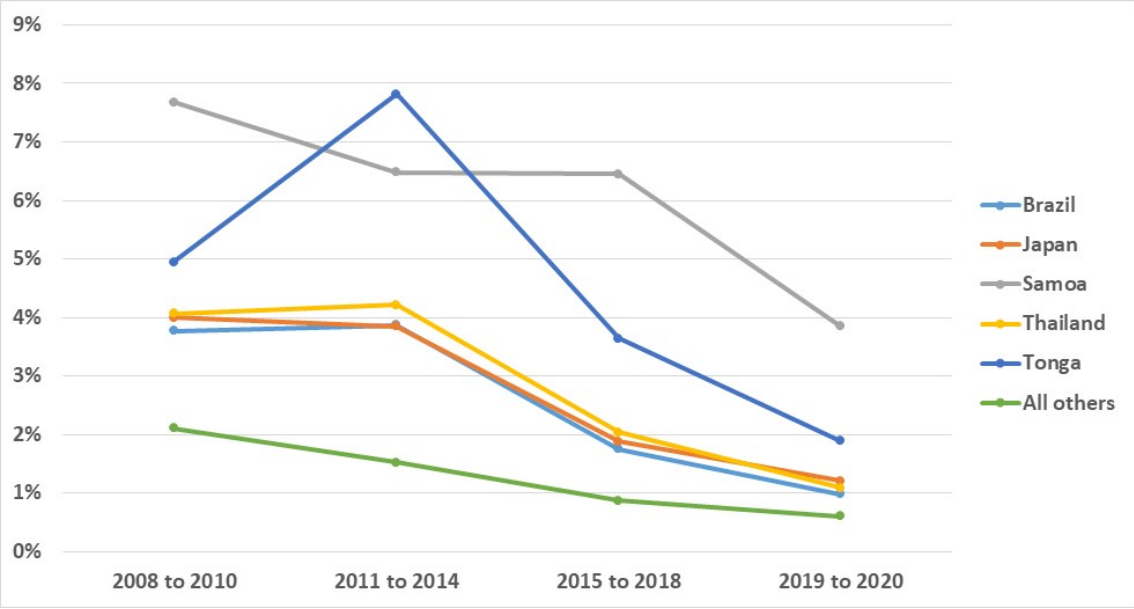
Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Migrants from Samoa and Tonga consistently had the highest underpayment rate

People from Samoa and Tonga made up relatively small migrant groups. However, these small numbers did cause wide fluctuations in the underpayment rate trend line, for Tonga in particular (see Figure 3). Elevated rates can also be seen among nationals of Brazil, Japan, and Thailand in particular.

In terms of absolute numbers, however, India had the most underpaid workers (by tax year) in the most recent period (n=135 underpaid workers), even though the underpayment rate of those from India in this period is average (0.7 per cent).

Figure 3: Underpayment rates by migrant nationality, by analysis period (tax years)



Note: Countries with fewer than 500 Essential Skill migrants are excluded from this analysis.

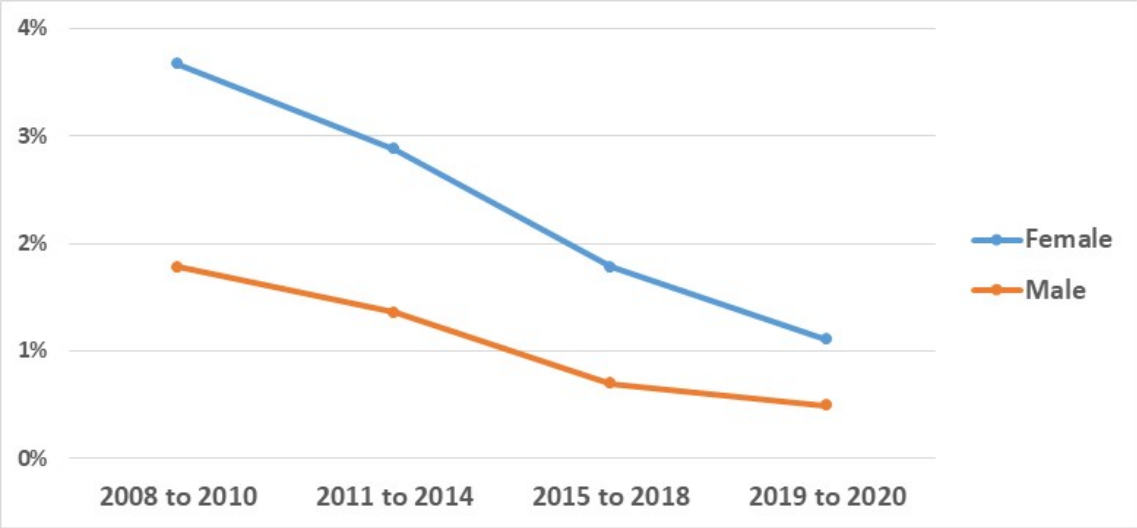
Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Female migrants were about twice as likely as male migrants to be underpaid in each period

Around 3.7 per cent of female migrants were underpaid in 2008–2010, falling to 1.1 per cent in 2019–2020, compared with 1.8 per cent and 0.5 per cent, respectively, of male migrants.

Although women have a higher level of underpayment than men, this level declined at a faster rate than men over the years of this analysis (see Figure 4).

Figure 4: Underpayment rates by migrant gender, by analysis period (tax years)

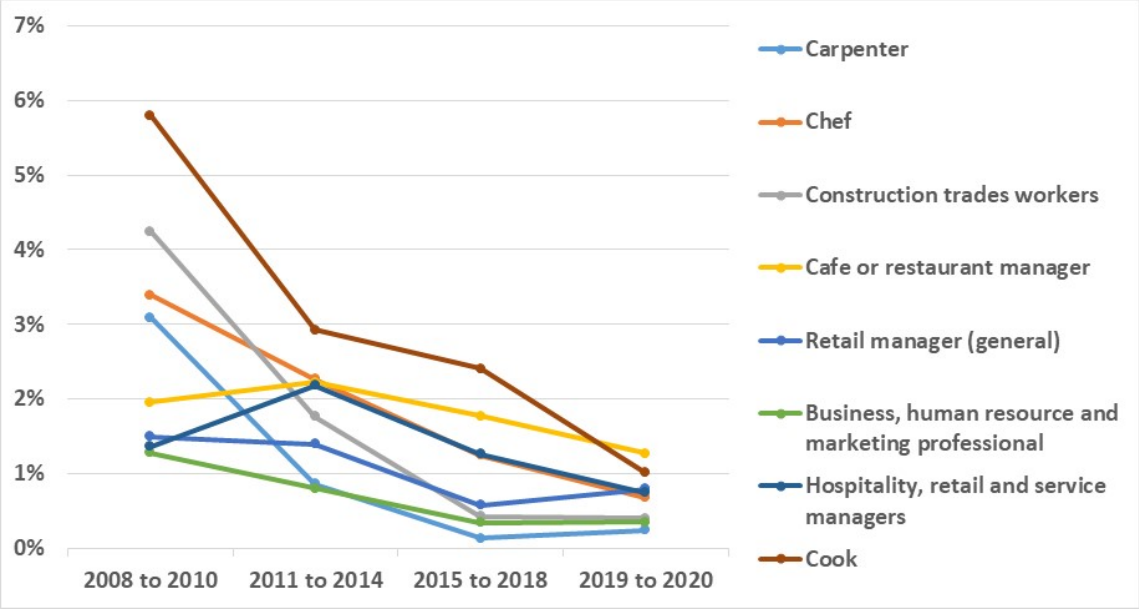


Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Migrants in certain occupations had higher rates of underpayment, although patterns changed over time

Cooks have had a consistently high rate of underpayment across all analysis periods, while construction trade workers started out with a high rate (4.2 per cent), before declining to one of the lowest (0.4 per cent) (See Figure 5.) Note, however, that the occupations selected for Figure 5 were the most popular occupations among the relevant cohort and this means they are more likely to be occupations designated as in demand by Immigration New Zealand. Therefore, the low underpayment figures given for these occupations are probably an artefact of a national shortage of these types of workers and these 15 occupational groups cannot be considered representative of all occupational groups with respect to underpayment rates.

Figure 5: Underpayment rates by occupation, by analysis period (tax years)



Note: Occupations excluded due to small numbers of Essential Skills migrants were dairy cattle farm workers; dairy cattle farmers; automotive and engineering trades workers; retail supervisors; engineering, ICT and science technicians; construction and mining labourers; and electrotechnology and telecommunications trades workers.

Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

The full results by migrant characteristics are in Appendix C.

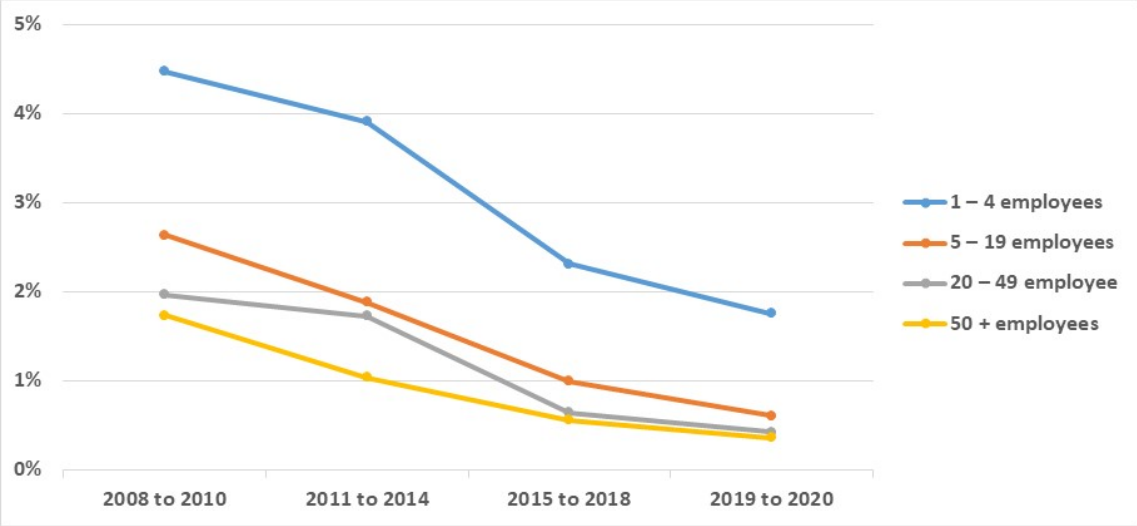
Employers who appear to be underpaying their migrant workers tend to be small businesses and in the accommodation and food industry

While worker characteristics are important in understanding underpayment, other measures of interest are those related to the employer (such as employer size, industry and region).

A consistent negative relationship exists between firm size and likelihood of being underpaid

Firm size is measured by the number of employees. Those working in businesses with fewer than five employees were particularly at risk of underpayment (see Figure 6). In the most recent analysis period, Essential Skills migrants had an average 1.8 per cent rate of underpayment when working for employers with fewer than five employees, but had only a 0.4 per cent rate when working for employers with 50 or more employees.

Figure 6: Underpayment rates by firm size, by analysis period (tax year)

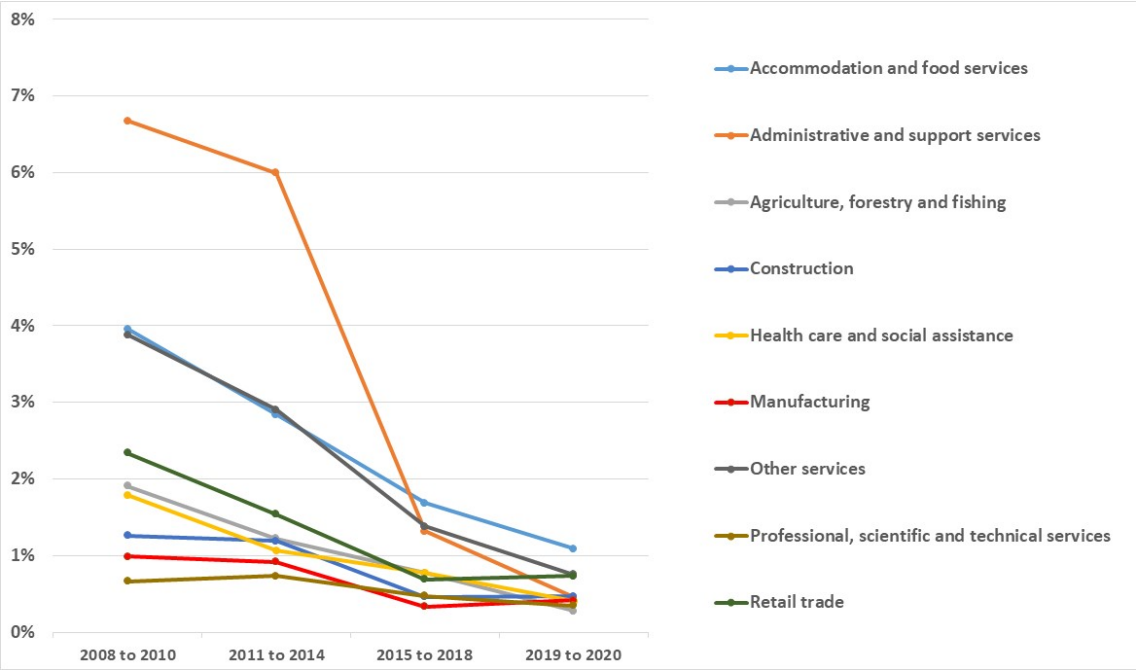


Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Migrants working in administrative and support services initially had highest rates of underpayment, but it was migrants in accommodation and food services in 2019–2020

The administrative and support services industry had the highest underpayment rate during 2008–2010 (6.7 per cent) but by 2019–2020 this had dropped to only 0.5 per cent. The accommodation and food services industry had the highest rate (1.1 per cent) in 2019–2020, down from 4 per cent initially. (See Figure 7.)

Figure 7: Underpayment rates by selected industry, by analysis period (tax years)



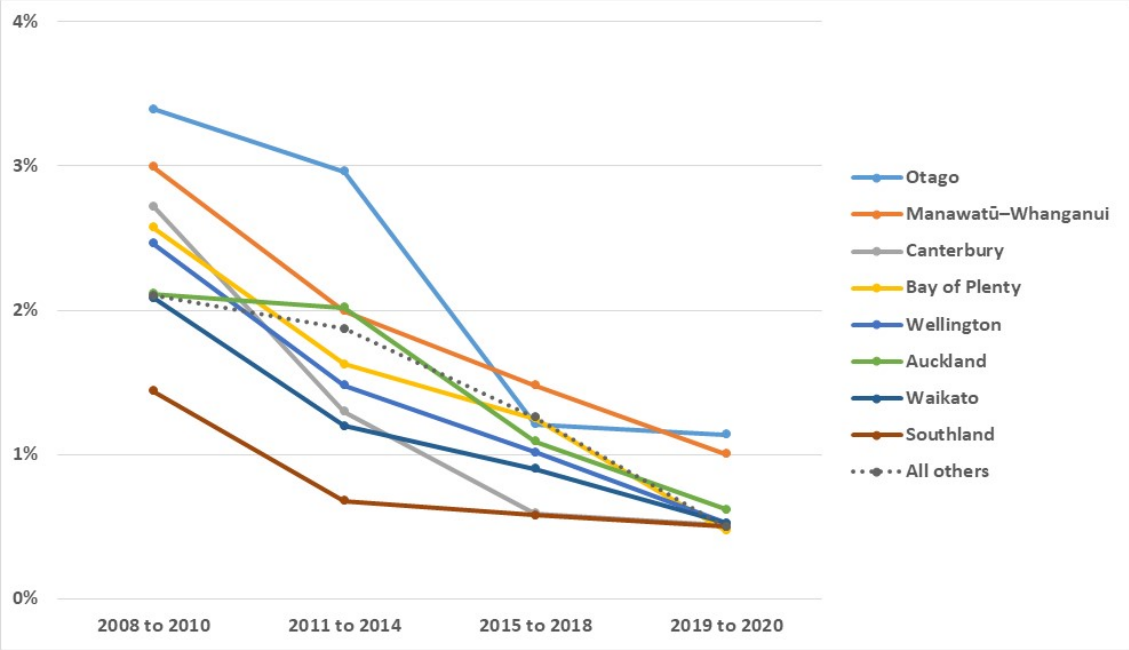
Note: Industries excluded due to small counts of Essential Skills workers were electricity, gas, water and waste services; financial and insurance services; information media and telecommunications; mining; public administration and safety; arts and recreation services; education and training; rental, hiring and real estate services; transport, postal and warehousing; and wholesale trade. Also excluded is data where the industry was unknown.

Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Variation existed in underpayment by employer region

Otago and Manawatū–Whanganui tended to have the highest rates of underpayment across most of the analysis periods, although, as in all other regions, rates fell over time. Southland tended to have the lowest rates (see Figure 8).

Figure 8: Underpayment rates by selected employer region, by analysis period (tax years)



Note: Regions excluded due to low counts of Essential Skills visas and/or data suppression were Marlborough, Nelson, Tasman, West Coast, Gisborne, Hawke's Bay, Northland, and Taranaki. Also excluded is data where the region was unknown.

Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

The full results by employer characteristics are in Appendix C.

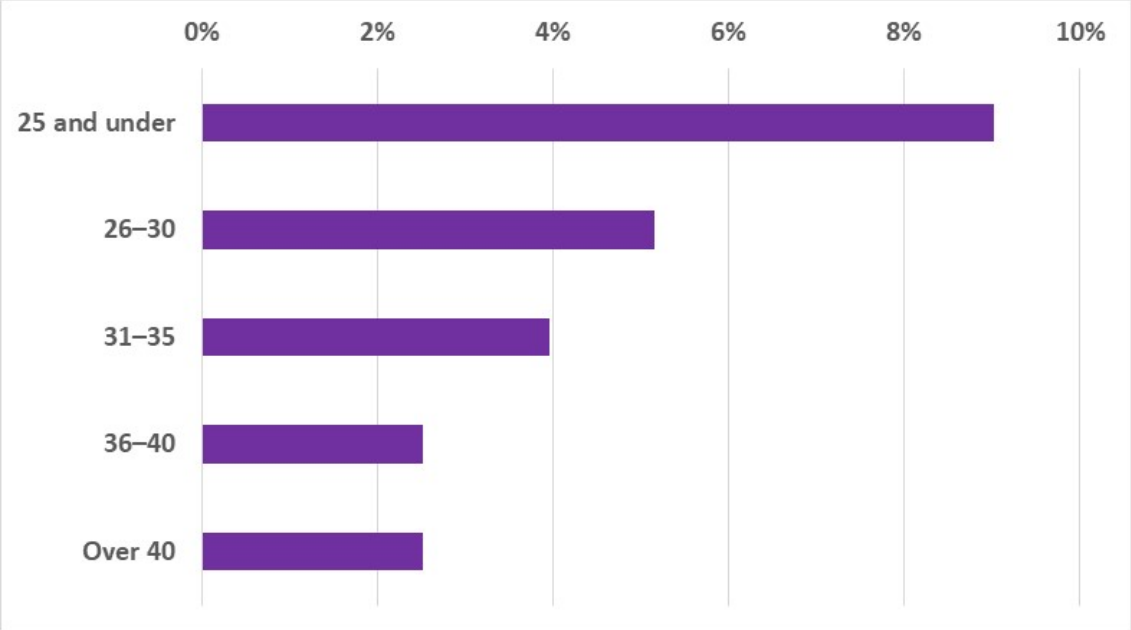
3. Findings on low payment

Due to its greater relevance, data on low payment from only the most recent analysis period (2019–2020) is analysed in this section.

Young workers (aged 25 and under) were more likely to be earning low pay than older workers

Rates of low payment among young workers (aged 25 and under) were about two or three times the rate among older workers (see Figure 9).

Figure 9: Low-payment rates by age group, 2019–2020 analysis period (tax years)



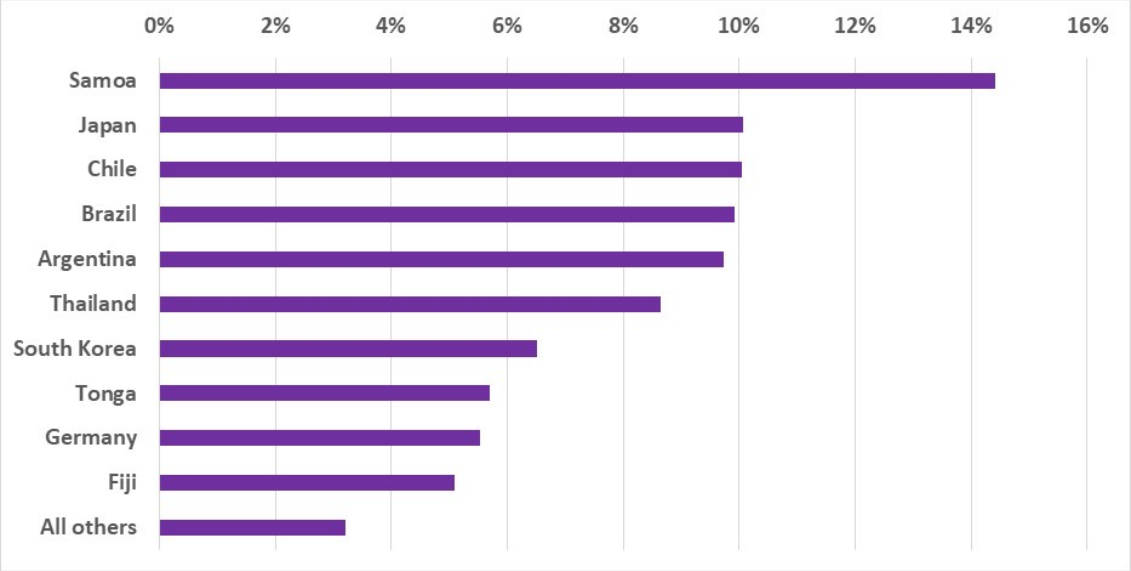
Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Workers from Chile, Japan and Samoa had low-payment rates of 10 per cent or over

Very low rates (that is, less than 2 per cent) were seen among workers from Ireland, the Philippines and South Africa. However, workers from Chile, Japan and Samoa had low-payment rates of 10 per cent or over. (See Figure 10.)

India had the largest number of low-paid workers (by tax year) in absolute terms in the most recent period (n = 1023), reflecting that it is the country the largest number of migrants are from. The low pay rate of those from India in 2019–2020 is average (4.9 per cent).

Figure 10: Low-payment rates by migrant nationality, 2019–2020 analysis period (tax years)



Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Considerable variation existed in low pay by occupation from under 1 per cent to almost 11 per cent

The occupation of cook had the highest low-payment rate at almost 11 per cent. Chefs, retail supervisors, and café and restaurant managers had rates of 5 per cent to 8 per cent.

A very low incidence of low payment (that is, less than 1 per cent) was seen among carpenters, dairy cattle farm workers, and automotive and engineering trades workers. (See Figure 11.)

Figure 11: Low-payment rates by occupation, 2019–2020 analysis period (tax years)

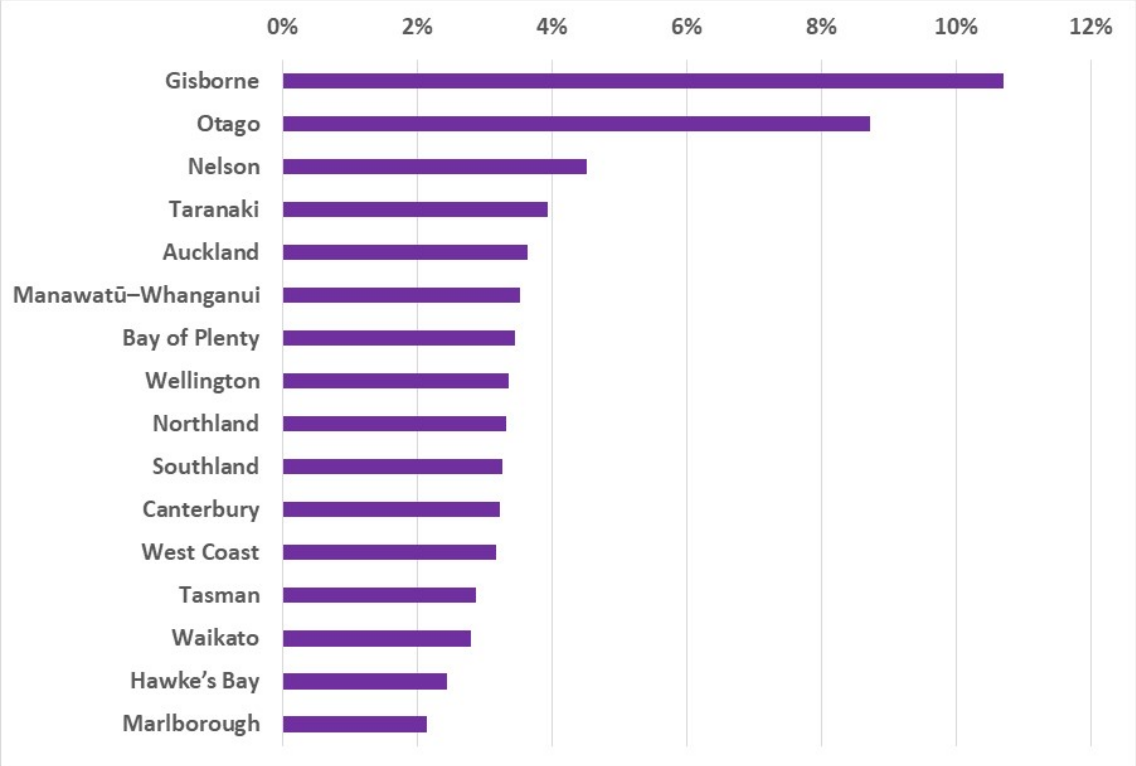
Note: The occupation dairy cattle farmer is excluded due to low counts of Essential Skills visas.

Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Workers in Gisborne and Otago had the highest rates of low payment

The proportion of low payment Essential Skills workers in Gisborne was highest at 11 per cent, although the numbers were very small. Otago had the next highest rate (9 per cent). No other region came close to these levels (all being around 2 per cent to 5 per cent) (see Figure 12).

Figure 12: Low-payment rates by employer region, 2019–2020 analysis period (tax years)



Note: Data where the region was 'unknown' is excluded due to low counts of Essential Skills visas.

Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

There were other findings with respect to low-payment

Three other findings were that:

- women had much higher rates of low payment than men (7.6 per cent compared with 2.8 per cent)
- workers who submitted a self-employed person's tax return were much more likely to be receiving low payment in their main job than non–self-employed people (9.0 per cent compared with 3.9 per cent)
- time spent on a visa seems to have no bearing on low-payment rates.

The full results by category are in Appendix C.

4. Research limitations

This research has four main limitations.

First, while the indicative underpayment rate shows the number of Essential Skills workers who are being underpaid or in breach of their visa conditions, it does not show which issue is the cause of the underpayment.

Secondly, this research does not identify all people who are underpaid. Someone could be earning less than the minimum wage, but be working 40 hours per week, so they would not be identifiable as being underpaid. Similarly, they might be working more than 40 hours a week, but being paid the equivalent of 40 hours a week, so they would also not be identified as underpaid.

Thirdly, migrants could be subject to exploitative practices that are not picked up by the measure at all. Examples of such practices include withholding passports, bullying, casual contracts without security of ongoing work, and employers demanding payment for providing employment or requiring workers to repay part of their wages[6].

Finally, some part of the apparent underpayment rate could also be due to matching issues in the IDI. However, this is likely to affect all groups fairly equally. Therefore, patterns observed in the data are likely to reflect true differences between subgroups and true changes over time.

Despite these limitations, these results can still usefully inform future research.

[6] For an examination of such practices in the hospitality sector, see W Searle, K McLeod, and C Stichbury (2015) *Vulnerable Temporary Migrant Workers: Hospitality industry*. Wellington: MBIE.

5. Conclusion

In conclusion, this report provides a cautious analysis of the employment conditions of migrants on Essential Skills visas. We are confident that those identified in this study are not receiving their minimum entitlements, but recognise there will also be other migrants who cannot be identified from the available data. Therefore, these results are only indicative of Essential Skills worker underpayment. They should be considered alongside other sources of evidence such as qualitative research and business intelligence.

The main measure used – the underpayment rate – does highlight sectors and migrant groups where levels of underpayment are sufficient to warrant in-depth investigation. The measure also identifies areas where Essential Skills workers are undertaking low-paid and, potentially, low-skilled work.

The results also suggest that workers who receive low payments tend to have similar characteristics to those who are underpaid.

These results are also not necessarily representative of levels of wider migrant exploitation among people in different visa classes.

Monitoring underpayment and low-payment rates in future years could help to identify emerging issues or areas of concern. Further research could also:

- use the 'hours of work' data now included in the Integrated Data Infrastructure (IDI) datalab records
- use the new 'claimed' wage and salary fields in immigration records that are now uploaded to the IDI datalab by MBIE to see whether certain patterns of wage or salary claims are related to a later greater incidence of underpayment or low payment
- use appropriate questions in survey research projects such as the Migrants Survey
- look at the extent of underpayment or low payment among migrants on other types of work visas
- examine the incidence of underpayment or low payment during the COVID-19 pandemic when new work visa migrants could not come to New Zealand and those work visa migrants who were in the country had visas extended.

Appendix A: Policy background

In September 2018, Cabinet agreed to progress an item in the Labour–New Zealand First coalition agreement: to take serious action on migrant exploitation. A policy and operational review was initiated – the Temporary Migrant Worker Exploitation Review – and led by the Ministry of Business, Innovation and Employment[7].

The goal of the review is to reduce the exploitation of temporary migrant workers. Its objectives are to:

- prevent the occurrence of workplace (and other) conditions that might enable temporary migrant worker exploitation
- protect temporary migrant workers in New Zealand and enable them to leave exploitative employment
- enforce immigration and employment law to deter employer non-compliance through a fit-for-purpose offence and penalty regime.

Two main periods of policy change occurred during 2008 to 2020 (March tax years), the period covered by this analysis.

In 2015, the Immigration Act 2009 was amended to target employers who exploit migrant workers. Under the amended legislation, it became an offence to exploit temporary migrant workers instead of an offence to exploit unlawful workers as it had been before. The amended legislation also addressed exploitation of migrant employees unlawfully in New Zealand. The new provisions also targeted exploitative employers who hold residence visas, making them liable for deportation if the crimes were committed within 10 years of gaining residence[8].

In 2019, reforms to Employer-Assisted Temporary work visas required employers to be accredited in order to support a migrant's application[9].

From July 2021, new measures (since the analysis period ended) make it easier for migrant workers to report exploitation and to facilitate migrants leaving exploitative situations as quickly as possible, including the creation of a Migrant Exploitation visa[10]. Most recently, a parliamentary inquiry into migrant exploitation was announced[11].

[7] MBIE (2021, 1 July) Addressing temporary migrant worker exploitation (webpage).

[8] New Zealand's National Plan of Action: Mahere Rautaki ā-Motu (2018, September) Pass the Immigration Amendment Bill (No.2) to address gaps in the compliance regime and introduce measures to address the exploitation of migrant workers (webpage).

[9] MBIE (2019) *Addressing Temporary Migrant Worker Exploitation: Consultation document.* Wellington: MBIE.

[10] MBIE (2021, 1 July) Addressing temporary migrant worker exploitation (webpage).

[11] New Zealand Parliament (2021, 27 October) Inquiry into migrant exploitation (webpage).

Appendix B: Detailed methodology

Approach

The overall approach taken in this research was to select the sub-population of workers who are in New Zealand on an Essential Skills visa for sufficient time to have reliable monthly earnings data in the Stats NZ Integrated Data Infrastructure (IDI). These workers are linked to income data from the tax system, allowing us to estimate the number of underpaid or low-paid workers.

Workers are described according to their characteristics, the characteristics of their job and the characteristics of their employer. This enables patterns of low pay to be identified, not only over time but for different groups of Essential Skills visa holders.

Definition of exploitation

For the purposes of wider work by the Ministry of Business, Innovation and Employment (MBIE) on temporary migrant worker exploitation[12], temporary migrant worker exploitation is understood to mean a breach of minimum employment standards. Minimum employment standards are the standard requirements for workers in employment law such as the Holidays Act 2003, Minimum Wage Act 1983 and Wages Protection Act 1983. Standards include the minimum wage and minimum annual leave entitlements.

Population of interest

The population of interest is all workers who earned salary and wage earnings for at least four months in a tax year while on an Essential Skills visa and while not working at any other job. Workers who held a different type of work visa and/or were in New Zealand for a shorter period, or workers who were in New Zealand but did not have salary and wage earnings are excluded.

Use of pay to estimate exploitation

There are significant methodological challenges in attempting to accurately measure the extent of migrant worker exploitation in New Zealand. The hidden nature of this illegal activity and the difficulties in accessing migrants willing to participate in research make data collection difficult. Exploitation will likely be under-reported in a survey because of participant uncertainty about what will happen to the information or the potential for personal ramifications (for example, deportation). In addition, there can be language barriers to migrants reporting exploitation and participating in research.

One measure, used in previous research by MBIE on vulnerable workers in the hospitality and Canterbury construction industries, is to calculate the extent of very low pay among temporary workers on Essential Skills visas[13].

The intent of Essential Skills visas is to enable employers to access temporary migrant workers when there are genuine skills and labour shortages. The measure used linked Inland Revenue tax data and MBIE migration data held in Stats NZ's Integrated Data Infrastructure (IDI) to identify characteristics associated with Essential Skills workers being paid below a specified threshold.

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[12] MBIE (2021, 1 July) Addressing temporary migrant worker exploitation (webpage).

[13] See W Searle, K McLeod and C Stichbury (2015) *Vulnerable Temporary Migrant Workers: Hospitality industry*. Wellington: MBIE; W Searle, K McLeod and N Ellen-Eliza (2015) *Vulnerable Temporary Migrant Workers: Canterbury construction industry*. Wellington: MBIE.

A significant limitation of the data held in the IDI is that there is little historical information on the number of hours worked by each individual in a particular month. Most of the historical data in the IDI consists of monthly salary and wage data but without the hours worked it is not possible to convert this into hourly wages and reliably assess the extent of minimum wage violations of migrant workers. Hours of work figures recently started to be added to the IDI, but the lack of historical data means they are of no use for exploring year-by-year trends.

The threshold-based measure for Essential Skills workers makes inferences about the possible extent of exploitation by setting a threshold level of monthly earnings based on the minimum hourly wage fora worker working 30 hours a week (the minimum required for an Essential Skills visa).

The earlier MBIE research looked at underpayment of Essential Skills visa holders in the hospitality and construction industries in the 2012 to 2014 tax years. The current project updates and extends previous work to cover:

- the 2008 to 2020 tax years
- all Essential Skills workers working in New Zealand.

Underpayment and low payment measures

Although hourly data has been recently (2020) added to the IDI, it is not available for the years of data used in this report. Instead, we made inferences about underpayment or low payment from calculations done on the raw amount the migrant earned per month, calculations based on the possibility that they were working either 30 or 40 hours a week. Therefore, the main measure used – the **underpayment rate** – describes the proportion of workers who would be paid less than the minimum wage per week, when these workers are assumed to be working 30 hours a week. Given the above points, it is likely that employers of such workers are in breach of minimum employment conditions and/or visa conditions, although we acknowledge it could indicate the migrant is working fewer hours than required under their visa. We have assumed that most people in this situation are being underpaid. It is also possible that these people might be earning income on which tax is not paid (so is untraceable), but this is not something than can be investigated using IDI data.

The **low-payment rate** measure used in this report has a slightly higher threshold than the underpayment rate. It is the proportion of workers being paid less than the minimum wage per week, with the calculations assuming the number of working hours per week is 40.

Record selection and income calculation

To operationalise the underpayment rate and low-payment rate measurements, code was developed within the SAS statistical software suite that extracted tax data for migrants on Essential Skills visas from the IDI. The code extracted all declared income data among such migrants in the tax years from 2008 to 2020, where the type of income was classified as ‘W&S’ (wages and salaries). The records were extracted and then sorted by individual, then tax year, then employer, creating a unique record for each instance where a given person worked in a given tax year for a distinct employer. The substantive part of each record consisted of 12 fields that recorded the migrant’s income for each month of the year from that particular employer.

For each person, a count was made for the number of separate employer records they had in a given month. These counts were amalgamated, and records were then sifted to select out only the people who had periods of at least four months during which they worked for only one employer during a given tax year. Two median hourly wage or salary rates were then calculated for the migrant, one on the basis of a 30-hour working week and one on the basis of

a 40-hour working week. These calculations were enabled by a count (automatically generated by the code[14]) of the number of Monday to Friday working days during the specific month in question. In the very small number of cases where the migrant had two qualifying employment periods that year (for example, two sequential six-month spells for separate employers), then the highest paid of the two was chosen.

These medians were then compared with the expected minimum wage rate for that given tax year[15]. The presence of underpayment and low payment in relation to an individual employment period were then recorded and became the basis of the underpayment and low-payment rates reported in this analysis.

The tables in this report show the rates of low pay and underpayment for the total number of workers or of sub-groups. The numerator in these rate calculations is the number of people reporting underpayment or low payment within the total or sub-group, and the denominator is the number of Essential Skills visa holders in each year who had a qualifying four-month continuous employment spell.

Other measures

The rates of underpayment and low-payment are compared over time by aggregating tax years into four analysis periods:

- **2008 to 2010**, when the overall underpayment rate was between 2 and 3 per cent
- **2011 to 2014**, when the rate was mostly between 1 and 2 per cent
- **2015 to 2018**, when the rate was around 1 per cent mark
- **2019 and 2020**, when the rate was under 1 per cent (the two most recent years pre-COVID-19).

The final period corresponds to the last two tax years for which we have reliable data. There is an overlap of a few days between the end of this period and the start of New Zealand's Alert Level 4 COVID-19 lockdown in 2020 but, in general, these results should not be affected by the pandemic.

Firm size comes from the business register data table in the IDI Datalab.

[14] Note that the count of expected working days did not need to take into account statutory public holidays in each month because we expected the worker to be paid for those days.

[15] Minimum wage changes occur at the start of each tax year throughout 2008 to 2020.

Appendix C: Data tables

Two data suppression rules were applied to the data before its release from the Stats NZ Integrated Data Infrastructure (IDI) Datalab.

First, individual figures were suppressed if they were under five people, and these situations are marked with an ‘S’ in the following data tables.

Second, base three random rounding was applied to the remaining results. The random rounding means percentages based on small sub-totals should be treated with particular caution.

Table C1: Underpayment by worker characteristics by selected tax periods

Worker characteristic	2008 to 2010			2011 to 2014			2015 to 2018			2019 to 2020		
	Average number workers/ year	Average number under-paid	Under-payment rate (%)	Average number workers/ year	Average number under-paid	Under-payment rate (%)	Average number workers/ year	Average number under-paid	Under-payment rate (%)	Average number workers/ year	Average number under-paid	Under-payment rate (%)
Age group												
25 and under	2,612	109	4.2	1,539	37	2.4	2,582	47	1.8	2,927	42	1.4
26–30	7,233	159	2.2	5,747	98	1.7	9,544	87	0.9	15,350	123	0.8
31–35	5,745	113	2.0	4,889	80	1.6	8,216	77	0.9	14,522	84	0.6
36–40	4,133	76	1.8	3,053	48	1.6	4,904	35	0.7	9,057	38	0.4
Over 40	6,319	171	2.7	5,034	113	2.2	7,535	71	0.9	12,714	65	0.5
Country of origin												
Argentina	217	3	1.4	216	3	1.4	405	5	1.3	710	9	1.3
Brazil	1,194	45	3.8	678	26	3.9	899	16	1.8	1,697	17	1.0
Canada	299	5	1.7	247	2	0.9	242	2	0.9	300	5	1.5
Chile	332	9	2.7	324	7	2.1	502	8	1.6	824	12	1.5
China	1,949	69	3.5	1,211	32	2.6	1,744	17	1.0	3,917	32	0.8
Fiji	2,684	67	2.5	1,814	41	2.2	2,080	39	1.9	2,444	26	1.0
France	259	5	1.9	248	5	2.1	589	6	1.0	798	6	0.8
Germany	571	14	2.5	353	5	1.5	435	5	1.0	518	5	0.9
India	1,595	29	1.8	1,884	23	1.2	4,479	44	1.0	10,373	68	0.7
Ireland	411	5	1.2	872	7	0.8	1,145	6	0.5	821	3	0.4
Japan	826	33	4.0	565	22	3.9	677	13	1.9	746	9	1.2
Malaysia	584	14	2.4	343	9	2.6	488	5	0.9	695	6	0.9
Philippines	3,025	40	1.3	3,140	23	0.7	7,370	25	0.3	13,385	20	0.1
South Korea	863	27	3.1	611	15	2.5	859	10	1.1	1,059	9	0.8
Samoa	443	34	7.7	185	12	6.5	116	8	6.5	156	6	3.8

Worker characteristic	2008 to 2010			2011 to 2014			2015 to 2018			2019 to 2020		
	Average number workers/ year	Average number under-paid	Under-payment rate (%)	Average number workers/ year	Average number under-paid	Under-payment rate (%)	Average number workers/ year	Average number under-paid	Under-payment rate (%)	Average number workers/ year	Average number under-paid	Under-payment rate (%)
South Africa	2,434	25	1.0	986	8	0.8	1,406	6	0.4	3,002	6	0.2
Sri Lanka	430	4	0.9	213	3	1.4	500	3	0.6	1,113	5	0.4
Thailand	418	17	4.1	498	21	4.2	664	14	2.0	831	9	1.1
Tonga	384	19	4.9	230	18	7.8	227	8	3.6	318	6	1.9
United Kingdom	3,679	66	1.8	3,014	32	1.0	3,788	26	0.7	4,644	41	0.9
United States	598	14	2.3	542	9	1.7	582	8	1.3	789	14	1.7
Other	2,846	84	3.0	2,092	53	2.5	3,585	48	1.3	5,436	44	0.8
Occupation*												
Carpenter	97	3	3.1	261	2	0.9	1,655	2	0.1	3,606	9	0.2
Chef	913	31	3.4	2,018	46	2.3	2,754	35	1.3	3,320	23	0.7
Dairy cattle farm worker	377	S	S	374	S	S	1,111	2	0.1	2,943	3	0.1
Construction trades workers	165	7	4.2	383	7	1.8	1,396	6	0.4	2,592	11	0.4
Automotive and engineering trades workers	293	4	1.4	428	S	S	950	3	0.3	2,243	S	S
Retail supervisor	60	2	3.3	200	S	S	819	11	1.4	1,910	23	1.2
Engineering, ICT and science technicians	301	3	1.0	482	5	0.9	835	3	0.4	1,581	S	S
Cafe or restaurant manager	255	5	2.0	608	14	2.2	1,016	18	1.8	1,530	20	1.3
Retail manager (general)	133	2	1.5	376	5	1.4	901	5	0.6	1,506	12	0.8

Worker characteristic	2008 to 2010			2011 to 2014			2015 to 2018			2019 to 2020		
	Average number workers/ year	Average number under-paid	Under-payment rate (%)	Average number workers/ year	Average number under-paid	Under-payment rate (%)	Average number workers/ year	Average number under-paid	Under-payment rate (%)	Average number workers/ year	Average number under-paid	Under-payment rate (%)
Construction and mining labourers	75	2	2.7	116	S	S	559	5	0.9	1,493	5	0.3
Business, human resource and marketing professional	234	3	1.3	374	3	0.8	651	2	0.3	1,268	5	0.4
Electrotechnology and telecommunications trades workers	156	S	S	192	2	0.8	410	S	S	1,214	8	0.6
Hospitality, retail and service managers	219	3	1.4	377	8	2.2	591	8	1.3	1,206	9	0.7
Cook	69	4	5.8	205	6	2.9	404	10	2.4	1,182	12	1.0
Dairy cattle farmer	396	S	S	1,421	2	0.1	2,126	2	0.1	1,118	S	S
Sex												
Female	8,695	319	3.7	6,570	189	2.9	8,390	149	1.8	13,730	152	1.1
Male	17,341	309	1.8	13,687	186	1.4	24,387	170	0.7	40,835	201	0.5
Unknown	6	S	S	6	S	S	5	0	0.0	5	S	S
Time on visa												
Up to 1 year	8,232	215	2.6	5,638	114	2.0	10,154	116	1.1	15,527	134	0.9
Between 1 and 2 years	9,275	192	2.1	4,922	80	1.6	9,647	74	0.8	15,687	84	0.5
2 or more years	8,536	222	2.6	9,704	182	1.9	12,978	129	1.0	23,354	135	0.6

Notes: If a worker was on an Essential Skills visa in multiple tax years, they could be counted more than once in this table. S = suppressed due to small numbers to protect confidentiality.

* Only occupations with the largest number of workers are presented here, as a large number of occupations have few workers.

Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Table C2: Underpayment by employer characteristics by selected tax periods

Employer characteristic	2008 to 2010			2011 to 2014			2015 to 2018			2019 to 2020		
	Average number workers/ year	Average number underpaid	Under-payment rate (%)	Average number workers/ year	Average number underpaid	Under-payment rate (%)	Average number workers/ year	Average number underpaid	Under-payment rate (%)	Average number workers/ year	Average number underpaid	Under-payment rate (%)
Firm size												
0–4 employees	4,135	185	4.5	3,489	137	3.9	5,152	119	2.3	7,932	140	1.8
5–19 employees	5,885	155	2.6	5,188	98	1.9	9,248	92	1.0	15,462	95	0.6
20–49 employee	3,705	73	2.0	2,909	50	1.7	5,510	35	0.6	9,590	41	0.4
50+ employees	12,314	214	1.7	8,677	90	1.0	12,872	72	0.6	21,585	78	0.4
Industry												
Accommodation and food services	4,752	188	4.0	4,196	119	2.8	6,356	107	1.7	10,019	110	1.1
Administrative and support services	1,019	68	6.7	763	46	6.0	2,218	29	1.3	4,841	23	0.5
Agriculture, forestry and fishing	2,354	45	1.9	2,580	32	1.2	4,263	33	0.8	5,424	15	0.3
Arts and recreation services	449	28	6.2	362	17	4.8	465	16	3.4	695	32	4.5
Construction	2,144	27	1.3	1,511	18	1.2	4,359	20	0.5	7,982	38	0.5
Education and training	570	29	5.1	386	13	3.3	384	11	2.9	582	5	0.8
Electricity, gas, water and waste services	79	S	S	44	S	S	61	S	S	132	S	S
Financial and insurance services	392	S	S	248	S	S	296	2	0.5	356	S	S
Health care and social assistance	3,516	63	1.8	3,232	35	1.1	3,176	25	0.8	4,752	20	0.4

Employer characteristic	2008 to 2010			2011 to 2014			2015 to 2018			2019 to 2020		
	Average number workers/ year	Average number underpaid	Under-payment rate (%)	Average number workers/ year	Average number underpaid	Under-payment rate (%)	Average number workers/ year	Average number underpaid	Under-payment rate (%)	Average number workers/ year	Average number underpaid	Under-payment rate (%)
Information media and tele-communications	360	8	2.2	207	3	1.4	291	S	S	473	S	S
Manufacturing	3,429	34	1.0	1,802	17	0.9	3,140	11	0.3	5,730	24	0.4
Mining	94	S	S	56	S	S	53	S	S	93	S	S
Other services	1,133	44	3.9	722	21	2.9	1250	17	1.4	2,391	18	0.8
Professional, scientific and technical services	1,647	11	0.7	1,330	10	0.7	1,889	9	0.5	3,038	11	0.3
Public administration and safety	370	6	1.6	229	2	1.0	214	S	S	258	S	S
Rental, hiring and real estate services	228	6	2.6	183	2	1.2	404	3	0.7	779	6	0.8
Retail trade	1,665	39	2.3	1,169	18	1.5	2,170	15	0.7	3,869	29	0.7
Transport, postal and warehousing	700	11	1.6	566	10	1.7	695	5	0.8	1,155	9	0.8
Wholesale trade	1,121	13	1.2	658	8	1.3	1,060	5	0.5	1,944	8	0.4
Unknown	18	6	33.3	20	4	19.2	35	5	12.8	59	6	10.3
Region												
Auckland	10,222	216	2.1	7,325	148	2.0	11,208	122	1.1	21,768	135	0.6
Bay of Plenty	1,244	32	2.6	783	13	1.6	1,320	17	1.3	2,528	12	0.5
Canterbury	3,789	103	2.7	3,584	47	1.3	8,249	49	0.6	9,717	50	0.5
Gisborne	82	5	6.1	105	10	9.3	164	9	5.5	281	6	2.1
Hawke's Bay	433	13	3.0	326	6	1.8	470	4	0.8	863	3	0.3
Manawatū–Whanganui	1,203	36	3.0	1,052	21	2.0	912	14	1.5	1,793	18	1.0

Employer characteristic	2008 to 2010			2011 to 2014			2015 to 2018			2019 to 2020		
	Average number workers/ year	Average number underpaid	Under-payment rate (%)	Average number workers/ year	Average number underpaid	Under-payment rate (%)	Average number workers/ year	Average number underpaid	Under-payment rate (%)	Average number workers/ year	Average number underpaid	Under-payment rate (%)
Marlborough	439	19	4.3	270	7	2.5	341	2	0.7	420	S	S
Nelson	275	S	S	170	4	2.2	198	4	1.9	333	3	0.9
Northland	580	11	1.9	365	8	2.1	565	6	1.1	905	5	0.5
Otago	2,033	69	3.4	2,000	59	3.0	3,224	39	1.2	5,658	65	1.1
Southland	624	9	1.4	663	5	0.7	906	5	0.6	1,193	6	0.5
Taranaki	408	5	1.2	306	3	1.0	375	2	0.6	533	5	0.8
Tasman	158	4	2.5	110	S	S	164	2	1.4	311	S	S
Waikato	1,772	37	2.1	1,062	13	1.2	1,834	17	0.9	3,702	20	0.5
Wellington	2,435	60	2.5	1,823	27	1.5	2,507	26	1.0	3,983	21	0.5
West Coast	322	S	S	293	S	S	339	4	1.1	566	S	S
Unknown	13	S	S	19	S	S	8	S	S	15	S	S

Note: If a worker was on an Essential Skills visa in multiple tax years, they could be counted more than once in this table.

S = Suppressed due to small numbers to protect confidentiality.

Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

Table C3: Low payment by selected characteristics, 2019/2020 tax period

Worker characteristic	Average number workers/year	Average number low-paid	Low pay rate (%)
Age group			
25 and under	2,928	264	9.0
26–30	15,350	791	5.2
31–35	14,522	575	4.0
36–40	9,054	228	2.5
Over 40	12,714	320	2.5
Country			
Argentina	710	69	9.7
Brazil	1,695	168	9.9
Canada	299	15	5.0
Chile	822	83	10.0
China	3,915	156	4.0
Fiji	2,442	125	5.1
France	798	41	5.1
Germany	516	29	5.5
India	10,373	512	4.9
Ireland	822	15	1.8
Japan	746	75	10.1
Malaysia	696	30	4.3
Philippines	13,383	128	1.0
South Korea	1,061	69	6.5
Samoa	156	23	14.4
South Africa	3,000	26	0.9
Sri Lanka	1,115	29	2.6
Thailand	833	72	8.6
Tonga	317	18	5.7
United Kingdom	4,644	167	3.6
United States	789	38	4.8
Other	5,438	297	5.5
Occupation*			
Carpenter	3,606	27	0.7
Chef	3,321	174	5.2
Dairy cattle farm worker	2,943	17	0.6
Construction trades workers	2,594	33	1.3
Automotive and engineering trades workers	2,246	12	0.5
Retail supervisor	1,908	143	7.5
Engineering, ICT and science technicians	1,584	35	2.2
Construction and mining labourers	1,493	23	1.5
Retail manager (general)	1,506	57	3.8
Cafe or restaurant manager	1,530	99	6.5

Worker characteristic	Average number workers/year	Average number low-paid	Low pay rate (%)
Business, human resource and marketing professionals	1,268	23	1.8
Electrotechnology and telecommunications trades workers	1,214	54	4.4
Hospitality, retail and service managers	1,206	48	4.0
Dairy cattle farmer	1,118	S	S
Cook	1,184	128	10.8
Region			
Auckland	21,770	791	3.6
Bay of Plenty	2,526	87	3.4
Canterbury	9,714	314	3.2
Gisborne	281	30	10.7
Hawke's Bay	863	21	2.4
Manawatū–Whanganui	1,791	63	3.5
Marlborough	422	9	2.1
Nelson	333	15	4.5
Northland	906	30	3.3
Otago	5,658	494	8.7
Southland	1,194	39	3.3
Taranaki	534	21	3.9
Tasman	314	9	2.9
Unknown	14	S	S
Waikato	3,701	104	2.8
Wellington	3,983	134	3.4
West Coast	570	18	3.2
Self-employed?			
No	53,984	2,124	3.9
Yes	584	53	9.0
Sex			
Female	13,728	1,038	7.6
Male	40,835	1,137	2.8
Unknown	6	S	S
Time on visa			
Up to 1 year	15,527	822	5.3
Between 1 and 2 years	15,687	614	3.9
2 or more years	23,355	743	3.2

Notes

* Only occupations with the largest number of workers are presented here, as there are a large number of occupations with few workers.

S = suppressed due to small numbers to protect confidentiality.

Source: Stats NZ IDI Datalab, Inland Revenue and MBIE data.

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