



EXPLORING OCCUPATIONAL MOBILITY

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Abstract

This paper describes the results from an exploratory study examining whether Household Labour Force Survey panel data could be used to provide some insights into the level of occupational mobility in New Zealand. Identifying the extent to which people are leaving the occupation for which they have trained can improve our understanding of the contribution of occupational mobility to skill shortages. Overall, it was found that 7% of individuals in the sample appeared to change occupation over the course of a one year period. The groups that were found to be most likely to change occupations were young people and unskilled workers.

Introduction

Record low levels of unemployment and high participation rates mean that the labour market in New Zealand is tight, and labour and skill shortages are constraining economic growth and hampering the ability to deliver services for many businesses and organisations.

The Department of Labour (the Department) has conducted considerable research into skill shortages in order to better understand the supply and demand forces underlying these shortages. Factors that influence supply include: training rates, migration trends, retirement rates and 'occupation detachment'. Occupational detachment generally covers situations where people leave (or fail to enter) the occupation in the New Zealand labour market for which they have trained.

For individuals, occupational detachment can be 'upward' (e.g. to a management or other more highly skilled position and/or better paying position). In other cases, it can be 'downward' (e.g. to a lower skilled position or out of the labour force). In many cases, some or all of the human capital gained through training/education and on-the-job experience is not transferable between occupations, so is lost through the occupational change. Because of the role of government in funding education and training, there is a particular interest in occupation-specific training that is being under-utilised.

Decisions to change occupations can be either voluntary or involuntary (e.g. following redundancy or as a result of an injury/disability), and can be influenced by both positive and negative factors. On the one hand, negative factors such as low pay or poor/inflexible working conditions can lead to a person changing occupations. On the other hand, positive factors may be the driver for change e.g. completing further education/training, a

desire to move into more challenging work, or the desire to earn more money.

The Department wished to gain a greater understanding of occupational detachment and its role in skill shortages. As a first step, an exploratory research project was carried out to examine the extent to which people change occupations within a given time period. This is referred to as 'occupational mobility' in this paper – essentially a subset of the wider occupational detachment definition.

The project utilises data from the Household Labour Force Survey (HLFS) conducted by Statistics New Zealand (Statistics NZ). The HLFS is conducted on a quarterly basis and collects information relating to the employed, the unemployed, and those not in the labour force who comprise New Zealand's working-age population. Each quarter responses are collected for all individuals within approximately 15,000 dwellings. Each dwelling is part of a 'rotation group' (or 'panel') that stays in the sample for eight consecutive quarters before being rotated out and replaced by a new panel.¹ Each dwelling and each individual within the dwelling are assigned unique id numbers, so individuals (and dwellings) can be tracked in the sample for up to eight quarters (i.e. two years).

Among the outputs produced by Statistics NZ from the HLFS data are longitudinal 'linked' unit record datasets on each panel included in the survey. These data are only available to authorised users under specific security and confidentiality agreements. The Department holds a copy of this linked HLFS data for use in specific research projects which have been authorised by Statistics NZ.

There have been numerous changes over time to the HLFS design, and to the range and classification of output variables, that impact on the comparability of data.

Such changes relevant to the current study are discussed further in the methodology section.

Occupational Mobility Research

Occupational mobility has been the subject of a number of recent overseas research projects. A few of these are described below to set the findings of the current research in some sort of context.

Kambourov and Manovskii (2004) used US Panel Study of Income Dynamics data to examine occupational and industry mobility in the United States over the period 1968 to 1993. They found that the average level of occupational mobility is around 17% at the three-digit level, and has increased over time. They found that mobility rates declined with age and education.

Shniper (2005) examined occupational mobility at the three-digit level between January 2003 and January 2004² using data collected in the supplement to the US Current Population Survey. This study was able to utilise information from respondents as to whether they did the same kind of work one year ago as they do presently. The overall occupational mobility rate was found to be 7.2%, with the rate declining as age increases, regardless of gender. For 16-19 year olds the occupational mobility rate was 27.1%, whereas for those aged 55-64 years, the rate was 2.7%. Food preparation and serving-related occupations and sales and related occupations had the highest incidence of occupational mobility. In contrast, health-care practitioner and technical occupations, architecture and engineering occupations, and legal occupations had the lowest incidence of occupational mobility. The differing age structure of workers within occupational groups had some influence on rates.

The Labour Mobility Survey (2004)³ conducted in Australia collected information about employment changes of a sample of persons aged 15 to 69 who had held a job in the 12 months ending February 2004. The survey found that for people who were working at both February 2003 and February 2004, 5% had changed both their job and their occupation. Of all occupations, 'elementary clerical, sales and service workers' were the most likely to have changed occupations (11%) over the previous 12 months, whereas 'professionals' were least likely (2%).

Methodology

Several topics are covered under methodology: the nature of the sample, coding of occupations, the testing of statistical differences and sample attrition

Sample Description

While individuals can remain in the HLFS for up to eight quarters, information is not typically available for individuals for this maximum time period. People can leave dwellings, enter a household after it was first sampled, or may not respond or provide ineligible

responses to the survey. For example, the panel that entered the HLFS in December 2003 and exited in September 2005 included data for 5,738 individuals⁴. There was an average of only 4.8 quarters of data available per person, with only 26% of the individuals having data recorded for all eight quarters. Nearly two in five (38%) individuals in this panel only had data recorded for at most three quarters.

It was decided, therefore, that the examination of data for this current study would be restricted to people who had labour force status information available for four consecutive quarters.⁵ As we were interested in examining the extent of occupational change, the first quarter of the four had to be a period of full-time employment⁶ (but not necessarily the other three quarters). By default, this excludes people who were unemployed or not in the labour force for all four quarters.

To ensure a large sample size, the data for eight panels were combined. The final sample consisted of 10,086 working-age individuals who entered the HLFS between March 2003 and December 2004, and who had labour force status information available for four consecutive quarters, starting with a period in full-time employment. Sample data were weighted according to the cross-sectional integrated weights calculated by Statistics NZ.

The following section discusses issues around occupational coding which meant that earlier panels could not be included in the current study. This meant that examining whether occupational mobility has changed over time was not possible.

Occupational Coding in HLFS

Key to the current project is longitudinal information on occupation for individuals. From the June quarter 1990, occupation in the HLFS was centrally coded (by data coders employed by Statistics NZ) at the 3-digit level, whereas previously it was interviewer coded at the 2-digit level using the New Zealand Standard Classification of Occupations (NZSCO) 1968. From the March 1991 quarter to the December 2003 quarter inclusive, occupation was coded at the 3-digit level using NZSCO 1990. From the March 2004 quarter, occupation has been coded at the 3-digit level using NZSCO 1995. With occupation being coded at the 3-digit level, any changes in occupations to very similar jobs (e.g. from carpenter to boat builder, or from registered nurse to midwife) cannot be detected.

It is important to note that occupational (and other) data in the HLFS are subject to clerical/coding error and reporting differences by respondents,⁷ and this becomes particularly apparent when focussing on occupational transitions for individuals. Occupation is coded centrally by Statistics New Zealand using the responses to the questions "In [your] main job last week, what was [your] occupation?" (q22), and "In [your] main job last week, what were the main tasks or duties?" (q23). A change in employer, job title or duties (whether real or just reported differently) or a different (or erroneous) interpretation by

a coder of the information supplied, can mean an occupation is coded to a different 3-digit NZSCO even though the occupation has not changed. This means that the HLFS data will contain considerable occupational “noise” at the level of individuals, so considerable caution needs to be taken in interpreting findings. Kambourov and Manovskii (2004) note that, “it is well known that panel data on occupation and industry affiliation is characterised by a substantial amount of noise”. They found that “over 50% of occupation or industry switches identified on the uncontrolled data are not genuine and are the result of coding error”.

A change was made to the HLFS Personal Questionnaire from March 2004, with a new question (Q25a) being added: “*In the last three months has [your] occupation changed?*”. While this new question seems to have potential to remove some of the occupational noise from the data for individuals, Statistics NZ does not use it for this purpose. Occupation is newly coded in each quarter from the current information provided by individuals.

There has, however, been a clear change since March 2004 in the extent to which occupational changes for individuals are recorded in the HLFS data. Prior to then, close to half of the individuals in the HLFS had more than one 3-digit occupation recorded within a one year period, but from March 2004 this has more than halved to just over one-fifth (see Appendix 1, Table A1).⁸ This is clearly a statistical artefact rather than a real change, and may just be because of the different occupational classification used (NZSCO 1995) - with greater numbers of job titles and synonyms coded to the same occupation. This change means that analysis of occupational transitions had to be restricted to data from March 2004 to ensure greater consistency in the coding of occupational data.

Another reason for restricting the analysis to quarters from March 2004, was to be able to utilise the information gathered from this period in the new question on occupational change (Q25a). This information was used in the following way:

- Everyone who said in Q25a that they did *not* change occupation in any quarter were coded in the current research as having not changed occupation – regardless of whether the 3-digit occupation codes recorded in any quarter differed from each other.
- Everyone who said in Q25a that they did change occupation in a particular quarter, but who had exactly the same 3-digit occupation code recorded as in the previous quarter, were also coded as having not changed occupation. The fact that the occupational code was the same in both quarters, despite this response to Q25a, may be due to occupational coding error, but it may also be that some of these people were referring to switching employers within the same occupation (i.e. turnover) as opposed to changing occupations, or they may have changed to a similar occupation that still fell within the same 3-digit occupation group. Given that we cannot distinguish

as to which of these situations is occurring, these people do not add anything useful to the current study in terms of identifying the nature of occupational mobility within particular occupations, so they have been included in the ‘did not change occupation’ group. Had they been included, this would have increased the overall occupational mobility rate by a further 7%.

- Everyone else who said they changed occupations in Q25a was coded in the current research as having changed occupations.

Testing Statistical Differences

An adjustment factor was used on the standard errors of estimates to take account of aspects of the sample design. Sample errors were multiplied by 1.5 to compensate for each HLFS sample not being independent (i.e. the same households and people can appear in multiple quarters) and because of ‘geographical clustering’ (i.e. respondents are drawn from particular strata and primary sampling units, not from everywhere in the country) which increases sample variability.

For the current study, 95% confidence intervals were calculated for all estimates using the adjusted sample errors to test whether differences were significant. Estimates with overlapping confidence intervals were taken to be not significant, while those where the confidence intervals did not overlap were taken to be statistically significant.

Sample Attrition

People who did not have labour force status information available for four consecutive quarters (e.g. because they left the household being surveyed and thus the HLFS sample) were excluded from the analysis. This attrition from the HLFS may be biasing the results to some extent, particularly if say people who change occupations are more likely than other people to move dwellings.

In order to investigate what impact attrition may be having on the results, it is useful to compare the characteristics of the sample used in this study to those of all people who could have been included had labour force information been available for four consecutive quarters (see Appendix 1, Table A2). The most significant difference appears to be that the sample used in this study contains a lower proportion of young people than would have been the case, but for sample attrition.

As will be seen later in the paper, occupational mobility tends to be greater for younger people than older people. Therefore, occupations that have high proportions of young people employed in them are likely to have higher mobility rates than those reported in this paper.

Data from the HLFS shows ‘highly skilled’ occupations (legislators, administrators and managers; and professionals) typically have very low proportions of young people (particularly 15 to 19 year olds) employed compared to the workforce as a whole (see Appendix 1,

Table A3), so are likely to be much less affected by sample attrition than other occupational groups. Technicians and associate professional occupations also have lower than average proportions of teenagers employed. In contrast, some 'semi-skilled/ elementary' occupations (particularly service and sales workers and elementary workers) have high proportions of young people employed, so are likely to be much more affected by sample attrition.

Other Limitations of this Research

This was not intended to be a study of the full range of labour market transitions that people make. While most working-age people remain in employment for sustained periods, some people regularly move in and out of employment (particularly those engaged in seasonal work), and others have prolonged periods of unemployment or being out of the labour force. This study only examines those people who were employed full-time at particular points in time, and for who labour force status information was available for the next three quarters.

This analysis looks at occupational changes over a one year period, and is therefore unlikely to be representative of the full extent of occupational mobility that occurs over individuals careers.

It would have been desirable in the current study to examine whether the extent of occupational mobility differed by income levels, and also if occupational changes had a negative or positive impact on individuals subsequent incomes. Unfortunately, the quarterly HLFS does not routinely collect income information from the respondents. Income information is only collected annually in the New Zealand Income Survey supplement to the HLFS each June quarter.

Findings

Two types of findings are presented, occupational changes by sub groups and the types of occupational changes occurs.

Occupational Change by Subgroups

Overall, 7% of the sample changed occupation (at the NZSCO 3-digit level) over the course of a one year period (see Table 1). The remaining 93% had only one occupation recorded over the one year period, including 87% who were in the same occupation in all four quarters. In total, 7% of the sample who started out in full-time employment had at least one period out of employment in the 2nd to 4th quarters.

Elementary workers (16%) were significantly more likely to change occupations within one year than other occupational groups. In contrast, professionals (4%) were less likely than the norm to change occupations within a year. These changes are examined in more depth in the following section.

As well as being more likely to change occupations within a year, elementary workers were also significantly more likely than most other occupation groups (with the exception of service and sales workers) to leave full-time employment at some point within a 12 month period.

While a slightly greater proportion of males (8%) than females (6%) changed occupations within a year, the difference was not statistically significant. Females (10%) were, however, significantly more likely than males (5%) to leave employment at some stage during the course of a year. For women, the two most common reasons stated in the HLFS for leaving employment were because of personal/family responsibilities, or because of a temporary/seasonal job ending or reaching the end of a contract. For men, the most common reasons for leaving employment were because of a temporary/seasonal job ending or reaching the end of a contract, or to return to study.

Table 2 shows that the likelihood of changing occupation within a year generally reduces with age, with teenagers (18%) being more than three times as likely to change occupations within a year as people aged at least 40 years (5%). The differences between the two older age categories (i.e. those aged at least 40 years), and the two younger age categories (i.e. those aged under 25 years) were statistically significant.

Teenagers in full-time employment at the start of the one year period were considerably less likely to remain employed for all three subsequent quarters than people aged at least 25 years.

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Pacific peoples (12%) were significantly more likely than Europeans (7%) to change occupations within a year, but none of the other differences between ethnic groups were statistically significant (see Table 3). Europeans in full-time employment at the start of the one year period were more likely to remain employed for all three subsequent quarters than people of any other ethnicity.

There was no significant difference between people born in New Zealand and people born overseas in the likelihood of changing occupations within a year.

People with school qualifications only were significantly more likely than people with degrees or post-graduate qualifications to change occupations within a year: 9% and 5% respectively (see Table 4). None of the other differences were statistically significant.

There were no significant differences in the likelihood of changing occupations between people living in urban areas and people living in rural centres or other rural areas. At a regional level, none of the 12 regional council areas examined had occupational mobility rates that differed significantly from the norm.

Table 1: Whether individuals changed occupation within one year from March 2004, by 1-digit NZSCO occupation.

NZSCO 1-digit occupation (at start of 1 year period)	Popn. estimate ¹	1 occupation only			2+ occupations			Total
		Employed all year ²	Left employment ³	Total	Employed all year ⁴	Left employment ⁵	Total	
Legislators, Administrators & Managers	173,200	88%	6%	94%	6%	0%	6%	100%
Professionals	189,400	93%	4%	96%	3%	0%	4%	100%
Technicians & Associate Professionals	133,400	89%	5%	94%	5%	1%	6%	100%
Clerks	134,500	86%	6%	92%	7%	1%	8%	100%
Service & Sales Workers	121,600	82%	9%	91%	8%	1%	9%	100%
Agriculture & Fishery Workers	98,100	88%	7%	95%	4%	1%	5%	100%
Trades Workers	135,100	90%	4%	94%	5%	1%	6%	100%
Plant & Machine Operators & Assemblers	123,100	84%	7%	91%	8%	1%	9%	100%
Elementary	71,200	72%	12%	84%	12%	4%	16%	100%
Total	1,179,500	87%	6%	93%	6%	1%	7%	100%

Notes:

1. The population estimate is calculated by weighting the sample according to the final integrated weights provided by Statistics New Zealand. These estimates are rounded to the nearest 100.
2. Employed in one occupation only through all four quarters.
3. Employed in one occupation for at most three quarters, and also had at least one period not in the labour force or unemployed.
4. Employed in two or more occupations through all four quarters.
5. Employed in two or more occupations for at most three quarters, and also had at least one period not in the labour force or unemployed.
6. Some figures in this and subsequent tables may not sum to the total because of rounding.
7. Source: Household Labour Force Survey, Statistics New Zealand.

Table 2: Whether individuals changed occupation within one year from March 2004, by age group.

Total number of occupations	15-19 (PE=46,500)	20-24 (PE=75,400)	25-29 (PE=101,800)	30-39 (PE=281,800)	40-49 (PE=340,100)	50+ (PE=333,800)
1 occupation	82%	87%	91%	93%	95%	95%
<i>Employed all year</i>	68%	78%	84%	87%	90%	89%
<i>Left employment</i>	14%	8%	6%	6%	4%	6%
2+ occupations	18%	13%	9%	7%	5%	5%
<i>Employed all year</i>	14%	11%	8%	6%	5%	4%
<i>Left employment</i>	5%	2%	2%	1%	1%	1%
Total	100%	100%	100%	100%	100%	100%

Source: Household Labour Force Survey, Statistics New Zealand.

Table 3: Whether individuals changed occupation within one year from March 2004, by ethnicity¹.

Total number of occupations	European (PE=949,200)	Māori (PE=95,900)	Pacific peoples (PE=50,600)	Other (PE=83,600)
1 occupation	93%	92%	88%	91%
<i>Employed all year</i>	89%	82%	77%	80%
<i>Left employment</i>	5%	10%	12%	11%
2+ occupations	7%	8%	12%	9%
<i>Employed all year</i>	6%	7%	9%	8%
<i>Left employment</i>	1%	1%	2%	1%
Total	100%	100%	100%	100%

Notes:

1. People who identified more than one ethnic group were assigned to a single ethnic group using the following prioritisation order: Māori, Pacific peoples, 'Other' ethnic groups, and European.
2. Source: Household Labour Force Survey, Statistics New Zealand. Table excludes people for whom ethnicity information was not available.

Table 4: Whether individuals changed occupation within one year, by highest educational qualification.

Total number of occupations	None (PE=205,900)	School qualification (PE=242,100)	Vocational certificate or diploma (PE=475,200)	Bachelors Degree or Post Graduate (PE=200,900)
1 occupation	92%	91%	93%	95%
<i>Employed all year</i>	88%	88%	90%	92%
<i>Left employment</i>	5%	3%	3%	3%
2+ occupations	8%	9%	7%	5%
<i>Employed all year</i>	7%	8%	6%	4%
<i>Left employment</i>	1%	1%	1%	1%
Total	100%	100%	100%	100%

Source: Household Labour Force Survey, Statistics New Zealand. Table excludes people for whom qualification information was not available.

What Type of Occupational Change Occurs?

As seen earlier in Table 1, 6% of individuals employed as a legislator, administrator or manager at the start of the one year period changed occupations in the next three quarters. This proportion is not significantly different from the proportion of all people who changed occupation within a year (7%). The minority of legislators, administrators or managers who did change occupations took up new positions in fairly equal proportions across most of the NZSCO 1-digit occupational categories.

None of the 3-digit occupational categories within this group (senior business administrators, general managers, and specialised managers) changed occupations significantly more or less than the norm.

Professionals (4%) were significantly less likely than the norm to change occupations within a year. The few professionals who did change occupations generally took up either managerial, clerical, or technician/associate professional positions.

Health professionals⁹ (1%), nurses/midwives (3%), and primary and early childhood teachers (3%) were significantly less likely to change occupations within a year than the norm. None of the other differences for 3-

digit professional occupations reached statistical significance.

It was noted earlier that for all occupations as a group, occupational mobility decreased with age. Part of the reason for professionals having a lower than average occupation mobility rate may be due to them being marginally older, on average, than the total labour force of interest (42.7 years compared to 41.5 years). Interestingly, however, young professionals (aged under 25 years) were found to be less likely to change occupations within a year than professionals aged 25-39 years (3% compared with 7%).

Technicians and associate professionals (6%) did not change occupations in a significantly different proportion than that for all employed people. The small minority of technicians or associate professionals who changed occupations took up a variety of other occupations across the majority of major occupational groups.

While twice the proportion of optical and electronic equipment controllers changed occupation within a year than the norm (14% compared with 7%), because of a small sample size, the difference was not statistically significant. None of the other differences for 3-digit occupations reached statistical significance either.

Overall, 8% of individuals employed as a clerk at the start of the one year period changed occupations in the next three quarters. This proportion is not statistically different from the proportion of all people who changed occupation within a year. The majority of clerks who changed occupations took up either managerial or other clerical positions.

While 15% of material recording and transport clerks changed occupation within a year, this figure did not quite reach statistical significance. None of the other differences for 3-digit clerical worker occupations reached statistical significance either.

Service and sales workers (9%) did not change occupations in a significantly different proportion than that for all employed people. Those workers who did change occupations took up a wide variety of other positions across most occupational groups.

The seemingly high proportion of salespersons and demonstrators¹⁰ who changed occupations within a year (12%) only just failed to reach statistical significance. None of the other differences for 3-digit service and sales worker occupations reached statistical significance either.

Agricultural and fishery workers (5%) did not change occupations at a rate that was significantly different to the norm. The small minority of agricultural and fishery workers who changed occupations took up other semi-skilled/elementary occupations.

Market-oriented animal producers¹¹ (2%) were significantly less likely to change occupations within a year than the norm. Neither of the other differences for 3-digit agricultural and fishery worker occupations reached statistical significance.

Trades workers (6%) did not change occupations in a significantly different proportion than that for all employed people. Of the small minority of trades workers who changed occupations, the majority took up semi-skilled/elementary occupations, with the others moving in to either other trades or management.

Machinery mechanics and fitters¹² (2%) were significantly less likely to change occupations within a year than the norm. None of the other differences for 3-digit trades worker occupations reached statistical significance.

Plant and machine operators and assemblers (9%) did not change occupations at a rate that was significantly different to the norm. Those plant and machine operators and assemblers who changed occupations usually took up other semi-skilled/elementary occupations.

While metal-processing plant operators (15%), wood-processing and papermaking plant operators (14%), and rubber and plastics products machine operators (20%) all changed occupation at least twice as often as the norm, small sample sizes meant that none of the differences were statistically significant. None of the other

differences for 3-digit plant and machine operators and assemblers occupations reached statistical significance.

Overall, 16% of individuals employed in elementary occupations at the start of the one year period changed occupations in the next three quarters. This proportion is significantly greater than the proportion of all people who changed occupation. Elementary workers who changed occupations mostly took up other semi-skilled/elementary work - with the most common being as a plant and machine operator and assembler.

Building caretakers and cleaners (19%) and packers and freight handlers¹³ (18%) were both significantly more likely to change occupations within a year than the norm. Of those building caretakers and cleaners who changed occupations, the most common new 3-digit occupations they went to were: salespersons and demonstrators (17%) and social work associate professionals (16%). Of those packers and freight handlers who changed occupations, the most common new 3-digit occupations they went to were: assemblers (16%), material recording and transport clerks (14%), salespersons and demonstrators (12%) and labourers (10%). Neither of the other differences for 3-digit elementary occupations reached statistical significance.

Part of the reason for elementary workers having a high occupation mobility rate will be due to them being younger, on average, than the workforce as a whole. In particular, this group of workers has a much greater proportion of teenage workers than the labour force as a whole (15% compared with 7% in the 2001 Census). Nearly a third (32%) of the teenage elementary workers in the sample changed occupations within a year, compared to 18% of teenage workers overall.

Discussion and Conclusion

The aim of this paper was to investigate whether it was possible to use panel data from the Household Labour Force Survey to provide some insights into the level of 'occupational mobility' in New Zealand.

There were a number of limitations with using the HLFS for this study because of the overall survey design, but as the data were readily available to the Department, it was decided to explore whether any useful information could be extracted on the topic of interest.

Attrition from the HLFS sample may be biasing the results to some extent, as people who were excluded from the sample used in this report were younger, on average, than those included, and younger people tend to have higher occupational mobility rates than older people. The impact of this on the mobility rates shown in this report will be greatest for the service and sales worker and elementary worker occupation groups, as these typically employ a much greater proportion of young people than other groups. In contrast, highly skilled occupations typically have very low proportions of young people employed.

Perhaps, one of the more interesting findings from the study was identification of the extent of "noise" that occurs in the coding of occupational data in the HLFS. While any survey is subject to some degree of non-sampling error, the extent of occupational noise in HLFS severely limited the usefulness of the data for examining occupational mobility for individuals.

A new question was introduced to the HLFS in March 2004 "*In the last three months has [your] occupation changed?*". This information is not used by Statistics New Zealand to improve consistency in the coding of occupation for individuals from quarter to quarter. However, it could be utilised in the current study to eliminate some of the occupational coding noise – albeit only for a relatively short time period (from March 2004), which limited the sample size available.

Overall, it was found that 7% of individuals in the sample appeared to change occupation over the course of a one year period. This was the same proportion as that found by Shniper in a 2005 study that was also able to utilise information on whether respondents did the same kind of work one year ago as they do presently. It is also similar to the occupational mobility rate found in the Labour Mobility Survey (2004) in Australia (5%).

The likelihood of changing occupation within a year generally reduces with age, with teenagers (18%) being more than three times as likely to change occupations within a year as people aged at least 40 years (5%).

Elementary workers (16%) were significantly more likely to change occupations within one year than other occupational groups. In contrast, professionals (4%) were less likely than the norm to change occupations within a year. The Labour Mobility Survey in Australia found similar results with 'elementary clerical, sales and service workers' being the most likely to have changed occupations (11%) over the previous 12 months, and 'professionals' being the least likely (2%).

In conclusion, while a number of factors hindered the extent to which occupational mobility could be examined using Household Labour Force Survey data, the findings did provide a few useful insights. Perhaps not surprisingly, the groups that were most likely to change occupations were young people and unskilled workers (who are younger on average than skilled workers).

Future Research

Further research may help to extend and build on these findings. It would be useful, for example, to examine how occupational mobility has changed over time, although HLFS would not seem to be the most useful for this purpose because of the various definitional and other changes over time affecting occupational coding. It would also be useful to examine the relationship between income levels and mobility. Other data sources could be investigated to see if they can provide insights into the level of occupational mobility in New Zealand. For example, the longitudinal Survey of Family, Income and

Employment (SoFIE) which has been conducted by Statistics NZ since October 2002 collects information annually from survey respondents about their work, family and household circumstances, income, assets and liabilities, and health.

Notes

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- 1 As one eighth of the sample is rotated out each quarter, in theory, 87.5% of households should be able to be matched between successive surveys. However, the proportion of 'usable' data (i.e. households providing eligible responses) tends to be lower than this e.g. 78.3% of eligible households in the June 2005 quarter could be matched to eligible households in the September 2005 quarter.
- 2 Any occupational changes in between these two periods are not included in the occupational mobility rate.
- 3 This two-yearly survey is conducted by the Australian Bureau of Statistics as a supplement to the Labour Force Survey.

- 4 People from eligible households who had a labour force status of employed, unemployed, or not in the labour force.
- 5 If an individual had data available for more than four consecutive quarters, then only the first four quarters were examined.
- 6 Full-time employment is defined as working 30 hours or more per week.
- 7 'Proxy' responses from another member of the household are also taken in about a quarter of cases when the respondent is not available for interview, which is also likely to add to the non-sampling errors.
- 8 This refers to people who had labour force status available for four consecutive quarters, and the first quarter was a period of full-time employment.
- 9 This group comprises mainly: general practitioners, resident medical officers, physicians, surgeons, pharmacists, dentists, and veterinarians. It excludes nurses and midwives.
- 10 This group is comprised mostly of sales assistants, but also includes demonstrators and forecourt attendants.
- 11 This group comprises mainly: dairy, sheep, mixed livestock, cattle and other livestock farmers or

farm workers; and crop and livestock farmers or farm workers.

12 This group comprises mainly of motor mechanics and machinery (diesel) mechanics.

13 This group comprises mainly: packers, loaders and checkers.

References

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Appendix

Table A1: Occupational change rates¹, by HLFS panel.

Panel (when sample entered and exited)	Population estimate	1 occupation only	2+ occupations	Total
December 2003 – September 2005	170,200	79%	21%	100%
September 2003 – June 2005	199,500	78%	22%	100%
June 2003 – March 2005	180,600	81%	19%	100%
March 2003 – December 2004	179,500	76%	24%	100%
December 2002 – September 2004	186,600	65%	35%	100%
September 2002 – June 2004	196,400	60%	40%	100%
June 2002 – March 2004	185,700	58%	42%	100%
March 2002 – December 2003	178,800	53%	47%	100%
December 2001 – September 2003	186,000	48%	52%	100%
September 2001 – June 2003	187,500	51%	49%	100%

Notes:

- Rates are for people with four consecutive quarters of data, of which the first was a period of full-time employment. These rates do not take in to account the question on whether the person has changed occupation in the last three months.
- Source: Household Labour Force Survey, Statistics New Zealand.

Table A2: Characteristics for current study sample, and all HLFS full-time employees.

	Current study sample	All HLFS full-time employees ¹
Age (years)	41.5	38.6
Aged under 25 years	10.3%	17.5%
Female	38.3%	39.7%
NZ born	79.0%	78.2%
NZ European	80.5%	76.4%
Māori	8.1%	9.9%
Pacific	4.3%	5.0%
Degree qualification	17.9%	18.8%
Live in main urban area	71.3%	73.7%
Leg/Ad/Manager occupation	14.7%	13.3%
Professional occupation	16.1%	15.1%
Tech/Ass Profs occupation	11.3%	11.3%
Clerk occupation	11.4%	11.3%
Service & Sales occupation	10.3%	12.7%
Agri & Fishery occupation	8.3%	7.9%
Trades occupation	11.5%	11.2%
Elementary occupation	6.0%	6.5%

- Notes:
1. All people employed full-time in the same panels and quarters as those included in the current study, regardless of whether labour force status information was available in subsequent quarters.
 2. Source: Household Labour Force Survey, Statistics New Zealand.

Table A3: Percentage of full-time employees in each age group, by major occupation.

NZSCO	Description	15-19 years	20-24 years	25+ years	Total
1	Legislators, Administrators and Managers	1%	4%	95%	100%
2	Professionals	1%	9%	90%	100%
3	Technicians and Associate Professionals	3%	11%	86%	100%
4	Clerks	6%	14%	80%	100%
5	Service and Sales Workers	13%	18%	69%	100%
6	Agriculture and Fishery Workers	9%	9%	82%	100%
7	Trades Workers	8%	13%	79%	100%
8	Plant & Machine Operators & Assemblers	7%	11%	82%	100%
9	Elementary	16%	15%	69%	100%
	Total	6%	11%	83%	100%

- Notes:
1. All people employed full-time in the same panels and quarters as those included in the current study, regardless of whether labour force status information was available in subsequent quarters.
 2. Source: Household Labour Force Survey, Statistics New Zealand.