NEW ZEALAND INCOME SURVEY AND OTHER SOURCES OF INCOME DATA FROM STATISTICS NEW ZEALAND

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Abstract

Many social scientists are familiar with the Household Economic Survey as a source of income data. However it is not the only source. The NZ Income Survey is run annually as a supplement to the June quarter Household Labour Force Survey. It provides a rich set of income data based on a much larger sample size. In this paper I will discuss the NZ Income Survey and compare it to some of the other SNZ sources of income data

Keywords: *Income data, New Zealand Income Survey, Household Labour Force Survey*

In the mid-90's the Population Census, Income of Persons data from the Inland Revenue Department (IRD) and the Household Economic Survey (HES) each met a niche information requirement. However the sample size of HES was too small to provide reliable estimates for many subpopulations, the Income of Persons data contained very little demographic and no family information and the Population Census collected income data only in a set of broad ranges.

Objectives

The New Zealand Income Survey (NZIS) was designed primarily to supply better information for policy development on: the labour market; income support and educational qualifications. The main objective was to supply income information about the return to the labour market; and government transfer information for subgroups of the population.

Policy questions of interest (SNZ 1996) included:

- What are the incomes for different groups of the population, those participating in the labour force and those not?
- What are the incomes from the labour market (including self-employment) and from income support policies for Māori compared to non- Māori?
- What are the incomes from the labour market and from income support policies for women compared to men?
- What are the incomes from the labour market and from income support for other groups of interest to policy makers, such as particular family types, specific age groups, those with various educational qualifications or those belonging to different ethnic groups.
- What are the effects of changes in tax and income support policies?
- What are the incentives for individuals and families to improve their level of earned income through increased participation in the labour market or the acquisition of various educational qualifications?
- What is the impact of economic and social policies on the distribution of earnings and incomes across individuals, families and households?

These policy questions fell into several groups: those investigating the distribution of income by income source for different sectors of the population; those examining the impact of various economic or social policies; and those relating to the impact of educational and work choices by individuals.

The first group could be answered directly from appropriate survey data. The latter two require some sort of modelling based on survey data.

The Design

Funding was granted for an income supplement to the Household Labour Force Survey (HLFS). The HLFS is a quarterly survey of 15,000 households or about 28,000 individuals. Each address is surveyed for eight quarters, except during the five-yearly update of the sample design. During the update the sampled addresses remain in the survey for four quarters. During a standard quarter one-eighth of the sampled households are rotated out and replaced by a new sample of households. This provides better estimates of quarterly and annual change than a non-overlapping design.

The target population for the HLFS is the civilian usually-resident non-institutionalised population aged 15 and

over. This means the survey does not cover long-term residents of homes for the elderly, hospitals and psychiatric institutions; inmates of penal institutions; members of the permanent armed forces; members of the non-New Zealand armed forces; overseas diplomats; overseas visitors who expect to be resident in New Zealand for less than 12 months and those aged 15 and under (SNZ 2000 Hot of the Press).

The HLFS consists of a personal face-to-face interview in the first quarter and a telephone interview in subsequent quarters where the respondent agrees. The interview is short to minimise respondent burden. The NZIS was designed to fit into this framework. The interviews are mainly done by telephone and the interview lasts about 10 minutes. This has limited the amount of detail on income that can be collected. Respondents are not specifically asked to consult their records. Whereas the HLFS accepts proxy interviews for labour market data, this is generally inappropriate for income data. Proxies are only accepted for health or language reasons.

The HLFS is designed in a way that reduces the sampling error for Māori and Pacific People estimates and regional council statistics. This results in some oversampling of Māori, Pacific Peoples and smaller regional councils which is compensated by the use of weights in the final estimation process. The quality of the final output is also improved through the use of integrated weighting which calibrates the estimates to independent population age and sex totals while ensuring that each person in the household has the same weight. This means that household and family statistics can be produced readily.

Information Collected

The HLFS collects a range of socio-economic and labour market data including age, sex, ethnicity, education, marital status, region, household type, family type, labour force status and employment status (wage and salary, self-employed, unpaid work in family business/farm). For those employed it collects industry, occupation and hours worked by main job and other jobs. For those not employed it gathers information on job search methods, availability for work, reasons for not looking for work, details of the industry and occupation in the last job for those employed in the previous five years and reasons for leaving that job.

An extra questionnaire was added for the NZIS. This questionnaire collects information on wages and salaries, self-employment income, government transfer income by source – benefit or pension, ACC, Student Allowance and other transfers such as private superannuation, annuities and pensions.

Collective income is also gathered on back pay, commissions, allowances, bonuses, gratuities, fees, piece rates, retainers and honoraria paid in the last week. Overtime pay is separated from earnings paid at standard rates.

The NZIS does not collect information on interest and investment income. The HES provides an indication of the size and distribution of interest and investment income. In the 1997/8 HES year investment income derived in New Zealand made up some 5.0 percent of total regular and recurring income, with 42.0 percent of people receiving some income from this source. This investment income was not spread evenly through the age groups. Those in the 15-29-year age group received less than one percent of their total income from investment income in the 1997/8 HES year. This compares to 16.0 percent of total income for those aged 60 and over, with 61.0 percent of people in this age group receiving some income from this source. Consequently, care should be taken when interpreting the "total" income statistics from this survey, especially for those aged 60 and over under (SNZ 2000 Hot of the Press).

The response rates in the NZIS and HES are similar. However, in the NZIS there is some information about non-respondents who have participated in the HLFS (16 percent of the HLFS responding sample). For these HLFS respondents, hot deck imputation is used to obtain a donor record for the NZIS. This method improves the overall quality of the NZIS estimates.

With the exception of the Population Census, the NZIS (and the HLFS) have a much larger sample size than other SNZ household surveys. Hence it is possible to cross-tabulate the data in more ways or analyse the data by more variables than, for example, the HES. However there are still limitations on what is available. One way to improve the quality of disaggregated results is to aggregate the sample across years and use several years of pooled data. This is particularly useful in times of relatively low wage growth and stable labour market conditions. In times of changing labour market conditions trends will tend to be averaged and it may not be as appropriate to average across years. It depends which statistic is having a greater effect, the year-on-year variability due to changing economic conditions or the sample size due to the level of disaggregation.

Comparison of Different Sources of Income Data

Table 1 in Appendixshows a comparison of the main SNZ collections of income data. Each of the sources has a different strength and, depending upon the type of analysis, one source will be more appropriate than another source. The most common trade off will be between sampling error and the level of detail of income data.

The Population Census is not subject to sampling error, hence it is very useful for detailed socio-demographic analysis of variables such as occupation or regional analysis. However income data is collected only in very broad income ranges in the Population Census. To facilitate the calculation of average income each person is assigned the HES median income for the income range they belong to.

This figure is used in any tables requiring point estimates of income. It is a very crude estimate of income and may produce misleading results when applied to subgroups that are distributed differently from the population at large.

The Income of Persons data is a very large dataset with a 2 percent sample of all people whose principal source of income is salary and wages and a 10 percent sample of all others. This means that extensive analysis can be made of the data, although the only demographic variables are age and sex. There is no family information. It is possible to analysis the records longitudinally over more than 20 years and to see how income components change over time. Provisional data is available two years after the end of the tax year.

The HES is the most detailed income survey and the subject of considerable analysis. It was run annually until 1997/8, but it is now conducted once every three years. The usefulness of the results are limited by the small sample size. In some cases it may be more appropriate to use a coarser measure of income from a survey with a larger sample size so that more detailed subgroup analysis can be undertaken.

The NZIS collects most components of income for the survey week. Annual income is collected for those self-employed and it is then converted to a weekly income. In some cases the respondent is only able to supply income for a previous tax year. Obviously weekly income is very different from annual income for those who are employed seasonally, such as students or those who work in seasonal jobs. Also the results may be affected by one-off irregularities. However the large sample size of the NZIS and its timely results make it an attractive analysis option.

The HLFS returns to seven-eighths of the same addresses each quarter and fifty percent of addresses each year (except during the five-yearly update of the sample design). People who do not change address during the year or are not temporarily away from their usual residence at the time of the interview are surveyed in the NZIS for two consecutive years. Hence it is possible to do some quasi-longitudinal analysis of the NZIS. SNZ has developed some provisional weights to facilitate exploratory longitudinal analysis over a year. These weights account for the different mobility rates of different sectors of the population. Over the period 1998 to 2000 the year-on-year overlap is very low due to the 1999 update of the sample design. Hence the results from any longitudinal analysis would be very limited in application.

Types of Analysis of the New Zealand Income Survey

The most recent publications by Statistics New Zealand using the NZIS have been the annual Hot off the Press for the New Zealand Income Survey, the New Zealand Official Yearbook 2000 and Labour Market Statistics 1999. Sylvia Dixon from Labour Market Policy Group has produced two papers using NZIS data, '*Pay inequality between Men and Women in NZ*' and '*Prime aged Males who are not in the Labour Force*'. Te Puni Kōkori has used the data in the report '*Progress Towards Closing Social and Economic Gaps between Māori and Non- Māori*'.

Future Research

Statistics New Zealand is currently looking at the possibility of adding a set of questions to capture information on investment income. This will depend upon the feasibility of using the telephone and quality of the responses obtained in a short interview.

There is also an opportunity to investigate income transitions using the quasi-longitudinal component of the survey and to evaluate the effect of the experimental weighting.

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Table 1. A Comparison of Different Sources of Income Data

	NZIS	HES	Income of Persons (Tax data)	Population Census
Sample size	28,000 adults	7,000 adults	140,000+ people	2.8 million adults
Frequency of survey	Annual (run in June quarter)	Annually until 1998, now every three years (next survey year ended June 2001)	Annual (March year)	Every five years (next census March 2001)
Coverage	NZ usually resident population excluding those in hospitals, homes for the elderly, penal institutions and armed forces	NZ usually resident population living in private dwellings. People going away for six or more days at the time of interview are excluded.	Tax records. Includes children and overseas taxpayers	NZ usually resident population
Response rate	77 percent	80 percent	Compliance	Low non-response, little undercoverage
Region	Limited	Limited	In future	Detailed
Demographic	A range of variables collected	A range of variables collected	Age, sex	A range of variables collected
Cross-tabulation	Limited	Limited	Detailed cross-tabulations possible	Detailed cross-tabulations possible
Income				
Total	Annual income is available in income ranges only	Yes	Total taxable income	Annual income is available in income ranges only
Components	Weekly income, excluding investment income	Yes	Organised around the tax form	Sources only but not value
Disposable income	Could do a very rough approximation	Yes	Yes	Nil
Longitudinal	Quasi-longitudinal run as a trial for Government	Nil	Yes, going back several decades	Nil
Quality	There is some difficulty with self-employment income particularly when the records are with the respondent's accountant	Every attempt is made to collect quality data. Detailed questions are asked and records are viewed during the interview	This is an administrative collection hence the definitions depend upon the tax rules and any subsequent tax avoidance practices employed	Self-completion form. Respondents are asked income ranges only
Publication of results	One quarter after the reference quarter	15 weeks after reference year	Provisional results 23 months after the reference year	One year after the census. The next census is March 2001
Timeliness of most recent results	Up to five quarters after the reference quarter	Up to three years four months after the reference year	Up to 30 months after the tax year	Up to 6 years after the previous census