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The Manitoba Basic Annual Income Data Base

From 1974 to 1979, the Governments of Canada and Manitoba co-operated in an income maintenance experiment designed to test various hypotheses related to the negative income tax. Similar in scope and intent to the major US studies (New Jersey, Gary, and Seattle-Denver (SIME/DIME)), the Manitoba Basic Annual Income Data Base (MINCOME) initiated some additional features of note.

For example, three sites were used in an attempt to directly assess the level of participation. In the US, sampling has always resulted in spatially dispersed participants, yet were the negative income tax ever to become reality, it would be offered to everyone. By conducting a 'saturation' site in Dauphin, Manitoba, the MINCOME experiment hoped to estimate directly the probable level of program participation in order to calculate the eventual cost of the program.

Configured as a standard experiment, with 'treatment' and 'control' groups, MINCOME modelled the negative income tax as two related policies. First, each enrolling family was assigned one of three annual income levels which was guaranteed. Second, any income earned above the guarantee was taxed at one of three rates. This resulted initially in a nine cell experimental matrix, but one cell was deleted because it simply was too expensive (i.e., the highest income and the lowest tax rate) and one cell (the least generous) had to be 'folded' into another because too few participants were willing to remain.

After the Baseline interview (1974) participants were selected for enrolment based upon household structure and income, and assigned to a particular plan based upon an optimal sampling procedure (Conlisk and Watts, 1979). While this optimal sampling approach produces non-orthogonalities in the experimental design

and attenuates the possibilities that standard ANOVA procedures may be used for estimation, it was necessitated by budget constraints. This distortion to the experimental matrix requires that selection variables (household type and income) must be included in any estimation strategy attempting to measure differences between the treatment and control groups.

After enrolment, participating families (treatment and control) were periodically surveyed using in-depth household interviews. Important features of MINCOME include:

- Comprehensive data collection on both heads in terms of labour market activity;
- Identical labour market data collected from adult (over 15) nonhead family members;
- Information on physical and financial assets;
- Periodic surveys of various sociometric and psychometric variables (for example, locus of control, marital attitudes);
- Distinction between individual and household as the unit of analysis.

Information was collected from a series of periodic interviews, and each participating family also completed a monthly income report form, primarily used to control the payments to the household, but which are valuable data in their own right.

It would be surprising if such a large and complex data collection exercise failed to produce problems. Like its American counterparts, and indeed all longitudinal data collected from panel studies, attrition was significant. Approximately 37 per cent of all participants initially enrolled failed to remain until the final survey. In part this was due to outmigration, and in part departures from the experiment reflected lack of interest and dissolution of the family unit. Although attempts were made to recontact outmigrants and to maintain a household despite divorce, these attempts were not particularly successful.

The consequence of attrition which is non-random (i.e., attrition is closely related to the age of the head, and other attributes of the household), is that comparisons over time must explicitly model the attrition process and include it in the estimation procedure. Fortunately

recently developed procedures (cf. Heckman, 1979) promise to permit the MINCOME data to be effectively analysed.

Another aspect of the MINCOME data also shared by the US experiments is that the treatment effects, when detected, are subtle. In part this reflects the limited duration of the experiment, and the probable influence this might have on behaviour. Interestingly for durables such as housing, the impact of a GAI on home-ownership appears to be statistically significant, although modest. Some explain this by the fact that many participants in the program were not fully aware of the limited duration of the experiment. It seems reasonable to suppose *a priori* that any measured treatment effects tend to understate the true effect.

Despite these problems, MINCOME remains as a very valuable micro-level data set upon which may be founded much basic and applied policy research. Unlike the data collected in labour force surveys, the Census, or other periodic surveys, MINCOME is a genuine panel data set. Both male and female heads are treated identically, and there is extraordinary detail, especially on sources of income and labour force activity. Given the current importance of social policy and employment issues directed to the low income household, it is likely that these data will figure prominently in policy research.

Presently the MINCOME data are available

to researchers in the form of a series of summary files. These present selected and constructed variables from the Baseline survey, the payments data, and three longitudinal files summarizing labour market histories, assets and income, and a final file summarizing family composition changes and attitudinal data. The files are configured in standard IBM formats, and are formatted in both fixed character and SAS data sets, which should make them compatible with all university installations in Canada.

Research on the MINCOME data is proceeding especially on the Baseline data. Areas of activity include labour supply, housing demand, marital attitudes and stability, the work activity of sole support mothers, and issues relating to timing and duration of unemployment. Interested researchers who wish to know more about MINCOME data are invited to contact the author for more details on how to access the data, and for more complete descriptions of the research presently under way.

References

- Conlisk, J. and H. Watts (1969) 'A Model for Optimizing Experimental Designs for Estimating Response Surfaces,' *American Statistical Association Proceedings*.
- Heckman, J. (1979) 'Sample Bias as a Specification Error,' *Econometrica*, 47:153–162.