Projecting Household Headship: Exploration and Comparison of Formal and Behavioural Approaches

Contract CR 6620-23

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Final Report
(Revised February, 1993)

for

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Introduction

This report contains three sections:

1) A narrative account and summary of results of specific analyses or experiments carried out under this contract. Reference is made to project working papers or research notes, which contain details and are listed in chronological order at the end of this report.

2) A set of headship rate projections for family and non-family households by province/territory for the period 1991-2011. These projections, based on regression models of pooled time series/cross sectional aggregate data, represent in our view the best set of projections possible on the basis of the various behavioural models estimated during the project. The projections are completely plausible, and manifest a reasonable range between high and low series, given the volatility of headship (especially non-family headship) over the last decade or so.

3) A summary of methodological conclusions, with suggestions for future work on headship and household projections.

Work Accomplished

The original contract envisioned work along two somewhat different lines, the formal and the behavioural (see items c, and b and d, respectively in the work specification). Formal approaches to projecting headship rates or household numbers range from simple extrapolation of observed trends in headship (for example, Statistics Canada's extrapolation of time-series of age-specific rates by means of a modified exponential formula) to complex simulation models calculating household patterns implicit in assumed future levels of mortality, fertility, marriage, divorce, home-leaving, etc. The distinguishing feature of these approaches is that they make no explicit assumptions about a model of household formation *behaviour* (that is a model that goes beyond formal demography), or about the social, cultural and economic variables apt to be contained in such a behavioural model. The approach is essentially statistical or mathematical in character. By analogy with stock market analysis, these formal approaches resemble 'technical analysis.'

Behavioural approaches, by contrast, rely on more or less explicit models of household formation behaviour, assume future values of independent variables in the model, and use the estimated model to predict future headship rates. Behavioural approaches to projecting headship rates can range from relatively simple regression models in which headship is modelled as a function of a few obvious regressors such as income and housing costs (for example, Hu, 1980), or Smith *et al.*, 1984), to appreciably more complex multi-equation models (for example, Haurin, Hendershott and Kim, 1992). By analogy with stock market analysis, these behavioural approaches resemble 'fundamental analysis.'[1]

Most of the behavioural models in the literature relate to narrowly defined age/sex/marital status categories (for example,

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[1]. There is a middle ground between these two general orientations, for example, the use of a multivariate technique such as multiple regression as a 'blind' prediction tool rather than as a means of estimating parameters in some postulated underlying model of behaviour, the model being derived from theory (the econometric approach). There is a sizeable tradition in the applied statistics literature describing this more mechanical approach to regression. The danger, of course, is that if one doesn't know why the multiple regression model predicts well, one is not alert to the possibility that it will fail to do so outside the ranges of observation of the regressors, or in the face of a fundamental change in the system represented -- that is, structural change, or a change in model parameters. There are degrees of 'blindness,' however. Generally the regression equations will contain variables that one thinks ought to be related to the dependent variable, even though one cannot specify in advance precisely how they are related. This comes closer to the final approach used in this project to produce projections of headship rates.

formally married elderly females, never-married young adults), and have not been designed or used for purposes of wholesale household projection across all relevant categories.

As specified in the original contract and clarifying correspondence, the project was experimental in the sense that several different approaches to headship rate forecasting were investigated and evaluated in terms of methodology, model estimation results, and potential use as a projection tool. In the final analysis (see below), the use of pooled cross-sectional/time series data for the provinces and territories at three successive censuses was judged the most promising behavioural approach for routine, general-purpose headship forecasting. It is the recommended empirical behavioural approach for further development.

Literature Review

A review of literature on household projections and on determinants of headship or other household statuses (see Working Paper #1, Burch and Skaburskis, March, 1992) yielded three general conclusions with important bearing on further work.

1) The total body of literature has something of a schizoid character, with research by housing economists focussing on the role of economic factors (especially income and housing market conditions, including prices) to the neglect of other, non-economic variables, and research by social demographers tending to neglect housing market conditions. Relatively little research has integrated the two sets of explanatory variables satisfactorily.

There also are somewhat pronounced differences in methodology in the two sets of literature. The econometric literature is apt to work with multi-equation models and with different measurement conventions (for example, use of instruments and lagged variables). The social demographic literature tends toward simpler, one-equation models, with directly measured variables in cross-sectional data sets -- in short, a somewhat more descriptive approach -- with issues of endogeneity and simultaneity glossed over or ignored.

2) Much of the best literature is focussed on specific sub-groups such as formerly married elderly females, or unmarried young adults. This is appropriate for scientific behavioural research aimed at causal explanation. But the asymmetry in development of theory and models, with a relative neglect of many age/sex/marital-status/household type categories, poses problems for a behavioural approach to across-the-board headship projections -- with little relevant theory and few if any tested models for many categories.

3) The use of multivariate behavioural models specifically for long-term household projection purposes is relatively rare. The literature provided little direct guidance for the project.

The main use made of existing literature was in finding general leads to model specifications (variable sets and model form) to be used in later analyses.

Model Specification

Reflection on results of the literature review suggested that an *ideal* model of headship would have a number of characteristics, described more fully in Working Paper #3 (Skaburskis and Burch, May 1992):

1) It would try to overcome what was described earlier as the schizoid character of the literature on determinants of household formation and status.

2) It would be expressed in different, customized versions, appropriate to each of several (the required minimum number is not

known) separate sub-groups, defined in terms of age, gender, marital status, or household type.

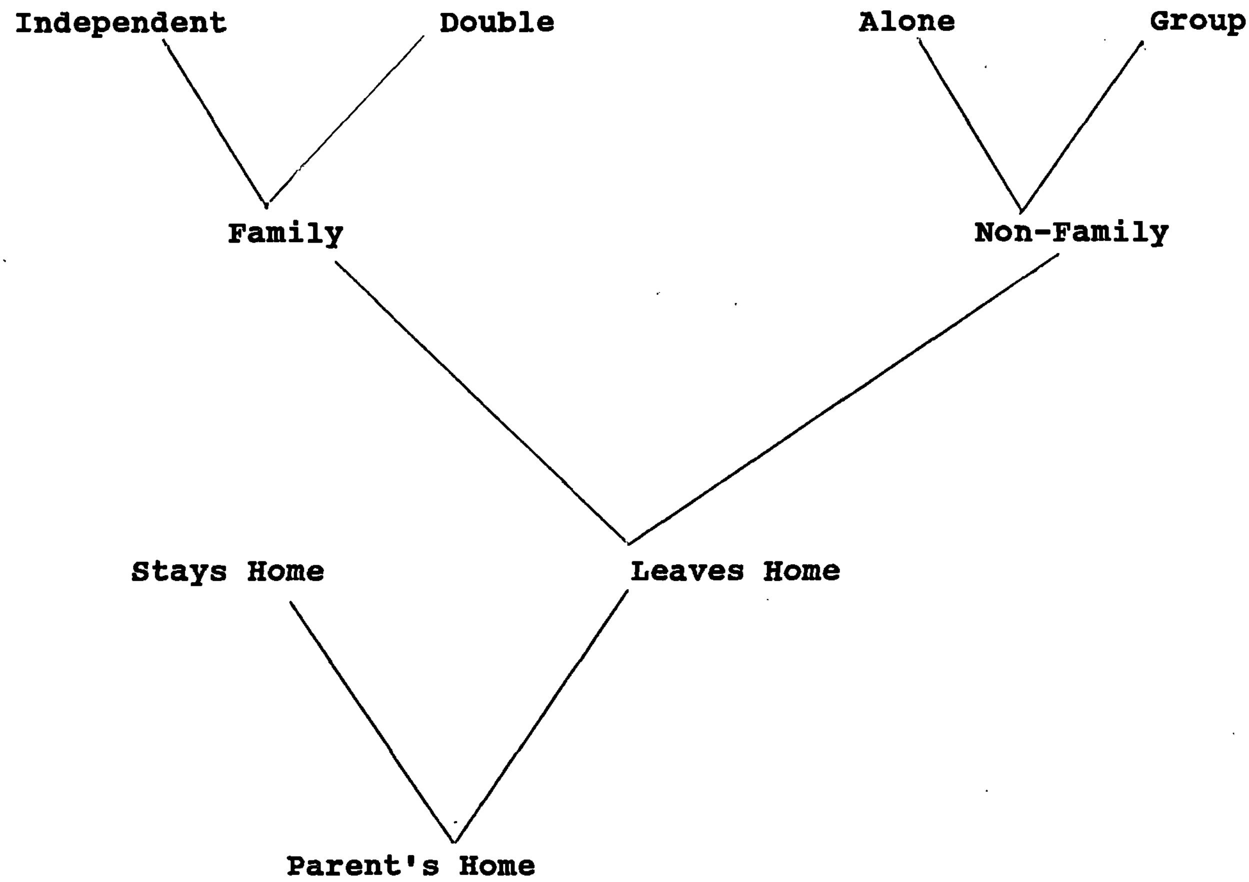
3) It would contain sub-models relating to the series of apparently simpler events underlying the assumption or relinquishment of headship, with due attention to sequencing of decisions or behaviours and related problems of simultaneity or endogeneity. The work of Haurin, Hendershott and Kim (1992, for example) comes closest to illustrating this feature. Figure 1 from Working Paper #3 illustrates some of the relevant choices or events that might apply to a young adult.

Problems with the realization of such ideal models quickly became apparent. The first is that in the absence of longitudinal data (from panel studies or retrospective questions in surveys) it is extremely difficult to estimate such elaborate models correctly. Even in the Haurin, Hendershott and Kim model just mentioned, many of the measurement techniques seem questionable, and assumptions about the sequencing of choices or events somewhat arbitrary. Existing Canadian data, considerably less rich than for the U.S. (compare the U.S. Panel Study of Income Dynamics, for which there is no Canadian counterpart), do not lend themselves easily to the estimation of complex multi-equation models.

The second is that it was not practical in a less than year-long project to elaborate and estimate the many different models needed for the several sub-groups noted in point #2 just above.

As a consequence, the project tended to work with somewhat simpler models than the apparent ideal. A fairly general set of explanatory variables or regressors was chosen, and modified slightly for sub-groups for which one or another was not particularly relevant. Some of the analyses (WP #4A and #4B) focussed on the classic economic variables. A few fairly obvious instrumental variables were used, and, in the aggregate analyses,

Figure 1
Decision Sequence



a few simple lagged variables. The total number of equations, including incidental equations, in any model remains small; our 'best' model is a single-equation model.

The investment of time and effort in one complex model, rather than the exploration of several simpler experimental models, would have been a risky approach, in the sense that the one model pursued might or might not have yielded an acceptable projection 'engine.' Several of the models explored proved disappointing in this regard, but at least one emerged as successful.

Formal approaches: extrapolating cohort patterns

Demographic experience and a review of the literature suggest advantages in the use of a cohort rather than a cross-sectional approach to household projection, even though this approach appears not to have been widely used for projection purposes, partly because of data limitations (see, however, Pitkin and Masnick, 1986, and Corner, 1987). The contract specified some exploration of cohort-based projections in the Canadian context.

The most general argument for a cohort approach is that cohort data followed over time track the experience of a concrete group of people. A time-series of cross-sectional age-specific rates, by contrast, refers to a different group of people at each observation time (for example, 15-19 year olds in 1986 are different people from 15-19 year olds in 1981). Intuitively, one might expect more continuity in the behaviour of a concrete group of individuals than in the behaviour of an abstract age category, especially during a period of changing behaviour.

Cohorts are defined in terms of some initial event whose timing is shared, usually birth, but also in various contexts marriage, divorce, etc. In the context of household formation, it would be interesting to define cohorts in terms of having experienced home-leaving or marriage at the same time, tracing household headship at different durations from the defining event. Future experiments along this line would be possible with data from Statistics Canada's 1990 General Social Survey.

Working Paper #2 (Burch, Li and Skaburskis, May, 1992) explored the possibilities of using a cohort approach for projecting Canadian headship rates. Two data series were used. The first, from census publications, was a set of age-sex-specific headship rates for quinquennial censuses for the period 1956-86. After interpolation to five-year age intervals, these data could be arrayed on a cohort basis with at most seven observations per cohort -- fewer for very old and very recent cohorts. Cohort headship patterns showed considerable stability in shape, with the exception of recent cohorts of females, for whom both levels and patterns of headship seem to have changed radically.[2]

The second data set was a CMHC series of age-specific headship rates for family and non-family households, for each province and territory for census years 1971-86. Recasting this series on a cohort basis yielded at most four observations per cohort. In these series, cohort patterns of headship showed considerable stability in shape, with the exception of non-family rates for recent cohorts, for whom age-patterns of headship seem to have changed appreciably.

Our original hope was that a suitable functional form could be found for each of the various sets of cohort headship rates, and

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[2]. Some of the changes in published census data reflect changing census concepts: a redefinition of the concept of *head* to allow for female heads in husband-wife households, and, later, abandonment of the concept of *head* in favour of the concept *household maintainer*. But similar (although less pronounced) changes in female patterns are observed in series re-worked in terms of an older, unchanging concept of *head*. See Statistics Canada, 1990.

then used to project the remaining experience of cohorts still at young ages, a procedure that has been used with some success for demographic events such as first marriage, birth, death. This approach proved generally feasible for older cohorts, for males, and for family heads. It proved unfeasible for recent cohorts of females and of non-family heads, due to the substantial shifts in the cohort age-patterns just mentioned.

Apart from the empirical patterns observed, a pervasive problem was the absence from the literature of a carefully specified general behavioural model of headship accession and abdication (relinquishment) that could provide guidance in formulating a suitable mathematical model of headship. Specifying such a model is made more difficult by the 'compound' character of headship, reflecting among other things, home-leaving, marriage, divorce and widowhood (see Corner, 1987).

Another problem was the fragmentary nature of cohort data that could be derived, especially from the short CMHC series. For many cohorts, four observations simply were not enough to determine a particular curve; formal methods could find a large number of excellent fitting curves, but with very different behaviour outside the range of empirical observations. Inevitably, it was necessary to make assumptions about values for headship rates at key ages (for example, age 15, age of maximum headship rate or a local minimum rate, the oldest age interval, etc.).

The problems encountered in Working Paper #2 led to abandonment of a parametric approach to cohort curve fitting, and to a more empirical approach using cubic spline interpolation. Given the need to make assumptions about key values in either case, spline interpolation seemed more simple and direct. This approach was described in Working Paper #2A (Burch, Li and Skaburskis, October, 1992), with illustrative high and low projections for Canada to the year 2011. This approach was considered promising, especially with further refinements of assumed values for key ages (notably, use of key values estimated by pooled regression -- see below), but was judged by CMHC to be less responsive to the original contract and was dropped.

Behavioural approaches: introductory comment. The empirical estimation of good behavioural models of Canadian headship poses a dilemma for the researcher: there are many good data sets containing information on headship, but none also contains data on all the other, explanatory variables thought to be relevant. Our response to this situation was to explore three different data sets: a) the first round (1985) of Statistics Canada's General Social Survey (GSS-I); b) tapes containing the 1986 Census Public Use Sample files; c) pooled cross-sectional/time series data for the provinces and territories for census years 1971 to 1986. The first two are individual (micro) data sets. The last contains aggregate data (macro) at the provincial level.

As noted above, these data sets contain different and only partially overlapping sets of potential explanatory variables. GSS-I, for example, contains information on health and disabilities, and on numbers of living kin by category, both of which have been shown to affect household status, especially among the elderly. But it lacks information on housing costs.

Since the pooled aggregate data pertain to provinces and territories, not individuals, the widest potential array of regressors is available for this approach. That is, data pertaining to the area can be incorporated into the model, regardless of its source.

We explored the general possibility of using instrumental variables techniques to 'complete' the set of regressors for a given individual data set (for example, estimating health and disability for the census sample using an equation derived from

GSS-I and census values of regressor variables). But relatively little use was made of these devices (see Working Papers #4A and #4B, however) given the absence of adequate theory and measurement experiments, and the general econometric difficulties involved (see below).

Behavioural approaches: GSS-I. An exploratory analysis was made of the first round of the General Social Survey (1985) with details reported in Li (15 May 1992). The attraction of this data set is that it contains information on health and physical disability and on kin of the respondent, both factors that have loomed large in socio-demographic analyses of household status.

Surprisingly for a family survey, the data did not allow for the unambiguous identification of heads of family and non-family households, as defined by standard census concepts. Family heads were identified, but in the case of households of unrelated persons, the head was not identified and had to be chosen by random assignment.

Results of logit regressions across various age, sex and household type categories were not encouraging, with relatively few significant predictors and some implausible outcomes. Data on health/disability and kin, the main comparative advantages for this survey, turned out to be relatively unimportant (insignificant or small associations) for most categories of respondent.

Further investigation of this data set was dropped.

Behavioural approaches: the 1986 Census PUS tapes. Clearly the largest fund of information on Canadian households is to be found in recent censuses. For present purposes, public-use sample tapes rather than published data represent the most convenient way to access these data. Data from the 1991 census were not yet available in this form; nor was it feasible to obtain special tabulations given the time-frame and budget for the contract.[3] Detailed analyses were undertaken using 1986 data.

These tapes contain very large samples, and thus yield reliable information on provinces/territories. An inconvenience is that separate tapes are released for individuals and for households, with different data on each and no way to link them, due to Statistics Canada's need to assure respondent privacy.

The analysis of this material is described in detail in Working Paper #4A (final version: Skaburskis and Burch, 20 December 1992). The focus of the analysis is on the role of economic variables as determinants of headship and related individual decisions (for example, whether to leave the parental home or not, whether to join a non-family group or not, whether to enter the labour force full-time, etc.).

The 1986 tapes contains information on individual and household/family income and on rents actually paid by the household. But these variables, as measured directly, were judged to reflect, among other things, current household status, and thus were deemed unusable. Instead, instrumental variables were constructed to estimate potential wages and housing costs. More specifically, with respect to housing costs, '...an index is constructed to reflect differences in the housing cost that people would face should they choose to form their own household' (WP #4A, p.10). This is done by regressing rent paid by childless

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[3]. Where possible, special tabulations can have important advantages over public-use tapes. For example, it is sometimes possible to have Statistics Canada link individual data from different sources, for example, the 1986 census and the separate but related Health and Activity Limitations Survey (HALS). Similarly, general data from the monthly labour-force survey can sometimes be added to General Social Survey files. But such special tabulations can pose confidentiality problems (less for a government agency than for an academic researcher), and are always expensive.

households who have moved in the last five years on a series of relevant variables.[4]

Similarly, a wage instrument is constructed by regressing wage income of employed persons with more than $1,000 income in 1985 on a series of regressors, including some relevant interaction terms.

These instruments are added to the individual's data file and used in regression analyses of headship and other aspects of household status. The results generally are satisfactory, with R^2's and other measures of goodness of fit well within the expected range for analyses of individual data, and with plausible results on economic variables: '...this paper shows that household formation behaviour is consistently affected by income expectations and prevailing rents as explained by theory' (WP #4A, p.24).

Although relatively successful as a first-cut study of the determinants of household status across a wide range of decisions and demographic sub-groups, the analysis of 1986 PUS data did not yield a 'forecasting machine' deemed satisfactory for generating forecasts of Canadian headship rates to the year 2011:

> 'The results are developed through cross-sectional analysis and the coefficients cannot be directly applied to forecasts. Regions change relatively slowly and our findings, therefore, represent the effects of long-term adjustments to differences in income prospects and housing prices' (WP #4A, p.25).

To put it differently, a cross-sectional model cannot adequately capture important dynamic aspects of household formation.[5]

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[4]. The procedure followed is sometimes referred to as 'use of incidental equations'; it is in essence a two-stage least squares procedure.

[5]. This problem is avoided in part in the pooled cross sectional/time series analyses presented below by use of observations at three separate time points and by the inclusion of

Ideally, the analysis presented in WP #4A would be extended by the inclusion of lagged variables[6] and by the construction of a larger system of equations to represent simultaneous relationships or interrelations of variables over time. It also would be desirable to include non-economic variables, to move beyond what has been characterized earlier as the schizoid character of research literature on determinants of household status.

Such a comprehensive econometric project was beyond the scope of the present contract.

Despite the above qualifications, illustrative projections were made to the year 2001, with assumed values for wages and rents based on trends from 1986 to 1992, and arbitrary but plausible assumptions about time paths to equilibrium headship rates. These illustrative projections appear to justify further work along these lines, despite the reservations noted above about adjustment lags The non-family series is close to our best projections, presented below; the family series appears somewhat too high by comparison. This latter result may arise from the failure of the equation to capture, directly or indirectly, the influence of relevant non-economic variables.

<u>Behavioural approaches: pooled regression analysis</u>. Some of the problems associated with regression of individual cross-

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previous headship rate as a regressor.

[6]. Again, such variables would have to be estimated by instruments (assuming data for such estimation could be found, which is not at all certain in the Canadian context), since 1986 and 1981 public-use sample data refer to different sets of individuals; there is no meaningful way to link individual data across censuses. Also, the census asks relatively few retrospective questions, for example, about past incomes or living arrangements. Greater flexibility in the incorporation of lagged variables is a signal advantage of the use of aggregate data (see below).

sectional data can be avoided by use of aggregate data for several dates. A frequent objection (especially by sociologists) to the use of aggregate data, seen as second-best because it does not relate directly to individual behaviour, is not particularly relevant here. The unit for which headship forecasts are required is precisely the province/territory, not the individual. One might argue that an aggregate model represents the more natural approach.

A number of experiments were carried out using data for the 12 provinces/territories at four recent census dates (1971, 1976, 1981, and 1986), and with headship rates by age and household type (family/non-family) as the dependent variable. A preliminary description of this work is contained in an earlier Research Note (Burch, Li and Skaburskis, 2 November 1992).

Two further analyses were carried out using the pooled aggregate data. The first, reported in Working Paper #4B (Skaburskis and Burch, 1 December 1992), represents an attempt to replicate and extend an econometric analysis of headship rates by Hu (1980). It is described briefly just below. The second and final realization of this aggregate approach is presented in greater detail below, along with a set of projections to 2011 using the resulting estimated models.

Key features of the Hu (1980) model are that it is a purely economic specification (that is, apart from headship itself, only housing costs and income are included as regressors), and that it contains a lagged headship rate as a regressor. Starting with the assumption that the change from t-1 to t in observed headship rates is proportional to the difference between an unobserved equilibrium rate and the observed rate at t-1, an estimable equation is derived relating headship to previous headship, income and housing costs:

$$HR_t = a + b\,HR_{t-1} + c_1 Y_t + c_2 P_t \quad \text{(Eq. 3 in WP 4B)}$$

Implicit in this model is a constant of proportionality which represents the rate of movement toward equilibrium; this can be estimated from the results of the above equation as 1 - b.

Hu's empirical estimation of the model was based on annual time series data not available for Canada. The model was estimated instead for the several provinces/territories at two or more census dates, and across all age groups for family and non-family households.

A number of different models specifications were tried. In most specifications, the largest part of explained variance in headship was due to previous headship or change in headship in the previous period (with respect to present time t, from t-2 to t-1). In general, addition of the economic variables or changes in these variables did not add much to explained variance. Goodness of fit and consistency and reasonableness of parameter estimates tended to vary a good deal from one sub-group to another.

In one model specification, the economic variables were dropped altogether, regressing headship only on lagged headship and lagged headship change, with results almost as good as with the inclusion of regressors for income and housing costs. At this point, the behavioural approach has slipped back into the purely formal. The implicit approach of this rather spare model specification is similar to forecasting based on double exponential smoothing, in which the next period forecast is a function of previous levels and changes in the forecast variable.

Despite the theoretically interesting character of this analysis and the promise of better results given longer time series of included variables (not readily available), the judgement was that the estimated equations did not provide an effective basis for across-the-board projections of future headship rates. The key strength of the Hu formulation, namely the power of previous headship as a regressor, however, was incorporated into the final realization of the aggregate pooled cross-sectional/time series approach.

This final model involves 36 observations (12 provinces or territories at 3 census dates). This specification was adopted in order to allow for use of the headship rate for the same age group at the previous census (five years earlier) as a regressor or predictor variable. This had the double advantage of capturing provincial/territorial peculiarities not captured by other regressors (for example, a provincial familial sub-culture), and of compensating in part for the problem of adjustment lags noted above in the discussion of WP #4A -- in general, moving away from a purely cross-sectional approach.[7]

Twelve separate models of this form were estimated for family and non-family rates of six age categories: 15-19; 25-29; 35-39; 40-44; 45-49; 75 and over. The models were estimated using the utility in SHAZAM specifically designed for pooled cross sectional-sectional/time series data.

A limited number of age categories was used simply to lessen the amount of computation required. Separate models could have been estimated for all 26 categories (13 age categories x two household types), but this seemed unnecessary. The age categories chosen are sufficient to 'fix' the resulting projected cross-sectional age curves of headship, allowing for straightforward interpolation of values for the remaining age categories, with interpolation errors that are inconsequential in the context of the

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[7]. We say 'in part' because adjustment to changes in income, for example, in the intervening five years would not be reflected in the value for the previous headship rate. But at least some of the adjustments to still earlier changes in regressors would be reflected. A full solution to the problem would require use of other lagged variables with properly specified lag structures, and, preferably, a longer time series to work with.

overall projection procedure. Age categories 15-19 and 20-24 anchor the lower end of the curve. Categories 35-39, 40-44 and 45-49 capture typical maximums and minimums (variously absolute or relative, depending on household type). And, the category 75 and over anchors the curve at the upper end.

Apart from headship rate at the previous census, the independent variables used in the analysis were:

a) for ages 15-19, 25-29 and 35-39: provincial unemployment rate; provincial divorce rate; a provincial index of housing costs; an index of in-migration; per capita real income.

b) for ages 40-44 and 45-49: the unemployment and divorce rates were dropped from the above set.

c) for ages 75 and over: in-migration rate was dropped from the above set (b) and a measure of mortality was added.

More detailed definitions of these regressors are as follows:

unemployment rate: overall percentage of provincial labour force who are unemployed. This is based on standard data from Statistics Canada labour force surveys.
divorce rate: crude divorce rate, or divorces per 100,000 population. From routine vital statistics reports.
per capita income: average provincial income in 1985 constant dollars. From census reports, with adjustments for inflation.
housing costs: index of changes in overall housing costs, indexed to 1971=100. From routine CPI data.
in-migration: percentage of population who are interprovincial migrants or immigrants. From published census reports.
mortality: provincial crude death rate (deaths per 1,000 population). From routine vital statistics.

Appendix A gives the data matrix containing headship rates and values of regressors for the 36 time (3) by province/territory (12) units of observation, plus relevant data for Canada as a whole.

The initial selection of regressors was based in a general way on our review of the theoretical and empirical literature. A more formal econometric approach, moving from rigourous theory to testable models for each of the several age and household-type subgroups, was not feasible given the state of theory and the time-frame of the contract.[8]

Based on initial results, regressors were dropped from the model if they showed virtually no association with headship for a particular age group, especially if the theoretical basis for their retention was weak (for example, retention of the unemployment rate for persons over age 75).

In general these models fit the data well, with significant, consistent and plausible coefficients across the various sub-categories. R^2's generally are large, with only one falling below 0.8. For non-family headship, five of the six values exceed 0.95.

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[8]. Consideration also was given to the use of more specific regressors for specific sub-categories, for example, using age-specific income or unemployment figures. Apart from the difficulties of assembling the required time-series at the provincial levels back to 1971 or 1976 (as it turns out, not a minor task), such an approach does not seem necessary given an aggregate model to be used primarily for prediction purposes. In addition, the attempt to use more specific regressors raises other problems to which answers are not apparent without much further experimental work. For example, is a present age-specific headship rate to be regressed on current income for that age group, income for that age group at the previous census, income for a younger age group at the previous census, etc.? The goodness of fit of the present models seems to justify use of the broader regressors, which is not to say that some improvement might not be possible. In WP #4B, for example, for one model specification, using the lagged headship variable for the previous rather than the same age group yielded a slightly better-fitting model (see p.19).

For family headship, five exceed 0.80. These are high values even for aggregate data. Inclusion of the previous headship rate, of course, drives up R^2's, and this variable is consistently and by far the strongest predictor of headship, although other variables often emerge as relatively strong predictors.

The fact that better goodness of fit is achieved for non-family rates than for family may reflect better model specification for the former, but it may also reflect the greater variance in the non-family dependent variable in the empirical series used. In the family series, in a sense, there is relatively little change to explain.[9]

Some specific results are not in accord with accepted views on determinants of headship, for example, the significant *positive* relationship between the housing costs index and non-family headship for persons 35-39 and 40-44.[10] One response to this result would be to discard the model on the grounds it does not accord with common wisdom about household formation -- higher housing costs discourage headship. We think this would be a mistake, given the goodness of fit of the model and the purposes for which it is to be used, that is, as a predictive tool rather than as a tool for testing causal behavioural theories. What the result says is that net of other factors in the equation, areas/time points with high non-family headship rates around ages 35-44 are areas with high housing costs. The causal relation, if any, could run from high non-family headship to high costs, rather than from costs to household formation. Similarly, since high housing costs clearly are associated with low headship rates for family households (the coefficients are negative for all age groups

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9. The relative amount of variance in previous headship rates, family and non-family, would also be relevant.

10. A similar result was obtained in Working Paper #4A, using cross-sectional data for individuals.

except the oldest), they may leave relatively more persons at risk of heading non-family households.

The results for income also are not what might be expected. For family headship, the sign of the income coefficient in four of the six regressions is negative, although none of these coefficients is statistically significant at the five percent level. For non-family headship, one coefficient is negative and significant, namely, that for persons 75 and older. We cannot explain this result, but are unwilling to reject it on a priori grounds.

Similar counter-intuitive findings are reported in a recent study by Chew (1990). His comments are worth quoting at length:

> Although housing market conditions work generally as hypothesized, their impact in total context is moderate at best. This can be understood if one considers that new in-migrants contribute disproportionately to an area's non-family household population. An unfavorable housing market may deter potential in-migrants from moving to an area in the first place, but once having arrived, newcomers usually lack alternatives to paying sellers' prices for housing. In localities with substantial in-migration, the impact can be sizable. Moreover, where the in-migrant stream is persistent, demand for housing is continuously replenished and *becomes relatively insensitive to normal housing market price mechanisms* (p.79, emphasis added).

In short, much more work (theoretical and empirical) needs to be done on aggregate models of headship, both family and non-family, before strong statistical results can be rejected on a priori grounds.

There is need for future work to think through separate behavioural models of different segments of the head population (family/non-family in different age groups), and to experiment with many different statistical models for each. This would be a major research project, involving several years rather than months.

The estimated models are given in Appendix B.

The estimated models were used to project headship to 2011 with the following assumptions regarding predictor variables:

1) For each predictor variable, use was made of the 'high' and the 'low' values of that variable observed in the period 1971-1986. The characterization of these values is in terms of their predicted impact on headship. Thus, for an inverse relationship, the lowest observed value would yield the highest headship, and is thus termed the 'high' value for that predictor variable, and vice-versa. The reasonableness of these assumptions is discussed below.

2) A high estimate of headship was prepared on the assumption that all of the predictor variables would assume their 'high' values in the year 2011, with intervening values interpolated linearly between 1986 and 2011. A comparable procedure was followed for low headship estimates.

3) For 1996 and beyond, the previous headship value is the value already *predicted* for the previous census -- for example, the predicted 1991 value is used as the previous value is predicting 1996 rates. In other words, the headship rates are 'chained.'

4) 'Medium' projections are taken as the average of the high and low series.

It should be noted that the procedure used assumes a common underlying structure of relationships for the period 1971 to 2011. That is, the variables and coefficients in the models are assumed not to change over the forty year period involved. This is somewhat at odds with the view that recent decades have seen radical changes in household and family formation behaviour. But the estimation of more complex models (for example, models with changing parameters -- see Greene, 1990, pp. 577ff.) would be extremely difficult, and would require richer data bases than are currently readily at hand. Even to make formal tests of structural change would require longer time series, for example, back to 1951 or earlier.

Final Projections: Presentation and Comment

Appendix C contains high and low headship projections to the year 2011 (by five-year time intervals) for both family and non-family headship in selected age groups. As explained above, these projections were made on the basis of scenarios most favourable and least favourable to headship. The most favourable scenario assumed that from 1986 to 2011, values for each of the independent variables would move toward the highest or lowest value observed for that variable between 1971-86. The highest or lowest was chosen for each variable depending on the sign of its coefficient in the estimated model, that is, depending on whether its relationship with headship was positive or inverse. The most favourable scenario thus represents a combination of values for regressors that, given the model empirical data base, would maximize headship. The least favourable scenario was constructed similarly but obversely.

We believe these assumptions lead to high and low projections of headship within which the actual figures are likely to fall. Only future values for one or more of the independent variables that lie well outside the range of empirical observation between 1971 and 1986 could yield projected headship rates outside the high and low limits. A more likely scenario is that most regressor variables will fall inside the 1971-86 empirical range, and headship will fall between the high and low projections. A reasonable procedure is to form a 'medium' estimate as the average of the high and low.

This overall assumption about future values of regressors can be supported with both formal and substantive arguments. Formally, consider for a moment that each of the regressors is a random variable distributed approximately normally, with unchanging mean over time. The probability that one of the regressors will assume an extreme value (say, more than two standard deviations from the mean) is small -- in the case of the normal distribution, only 0.05. Assuming independence, the probability that *all* of the regressors will assume extreme values is the product of several small probabilities, and thus fairly close to zero. This argument sketch will be invalid to the extent that there are clear time trends in one or more of the regressors, that is, that the distributions are shifting upward or downward over time. This is not generally the case for the data base used here, although it is true for some variables in some provinces/territories. In evaluating the reasonableness of projections for a particular area, it will be useful to examine the observed values of each of the regressors over the period 1971-86.

Another formal consideration is to view the estimated headship rate as a linear combination or weighted average of the assumed future values of the regressors, with the estimated coefficients as weights. In order for actual headship to fall outside the bounds of our projections, it would be necessary to combine a large departure from past observations with a large coefficient (weight) to contribute an amount to the sum that outweighs the 'centralizing' effect of other variables (assumed to fall within the observed range). The fact that the largest coefficients in the estimation equations are those for lagged headship builds in a strong continuity assumption; only very extreme values on one or more of the other regressors could be enough to outweigh the effect of previous headship.

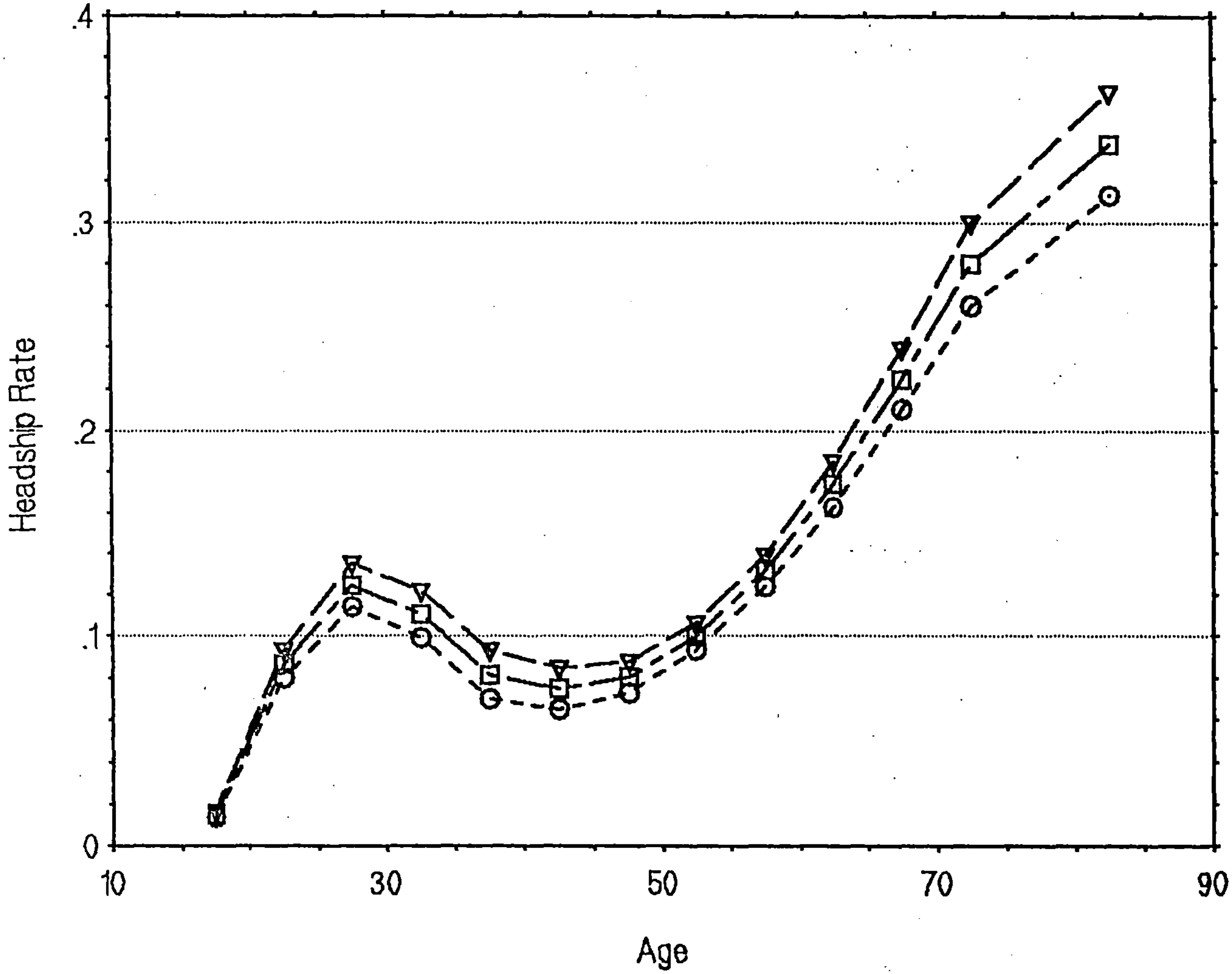
Indeed, one useful way in which to interpret the final projections is that they assume a pattern of basic continuity in headship modified to take account of strong effects of relevant economic and demographic variables at the provincial level.

Substantively, it remains a matter of judgement whether one or more of the regressors will exceed the bounds observed during the base period 1971-86. In this connection, it should be noted that income and housing costs are denominated in constant dollars. In the case of real income, at least, recent years have seen stagnation, and current economic prospects do not seem to point towards an early and substantial turnaround. Only a severe worsening of the economy, on the other hand, could drive the overall unemployment rate above its current level of 10-11%, and very low unemployment does not seem in prospect. Recent demographic analyses of divorce suggest that the rapid rise over the last two decades may have tapered off, that at least a temporary maximum has been reached. Future trends in internal and international migration are hard to predict, but recall that the variable used is a percentage, a relative not an absolute number.

Given the regression models, a very large number of scenarios is possible. With five regressors each having high and low values, for example, thirty-two (5^2) different combinations could be used for projection purposes. This does not take into account possible intermediate assumptions regarding regressors.

Also, it is clear that the most realistic scenarios for different provinces might vary. For example, it seems reasonable to assumed continued high levels of migration to British Columbia (perhaps exceeding past levels, for example, depending on events in Hong Kong towards the end of the decade) but not to Newfoundland. But the detailed social, demographic and economic analysis of each province that would be required to make judgements as to the most likely scenarios of each is well beyond the scope of the present contract.

FIGURE 2
Comparison of Pooled Projections to 2001
Non-Family Variants, Canada



The approach here has been to try to set bounds within which future reality almost certainly will lie.

The projections in Appendix C are only for key age groups, enough to fix cross-sectional age curves of headship at future census dates. In Appendix D interpolation has been applied to projection results to yield projections for the remaining age groups, and the data re-ordered to yield cross-sectional headship curves (high and low variants) at future census dates. Values for intercensal years can be easily obtained by interpolation. 'Medium' projections can be easily obtained by averaging the high and low series.

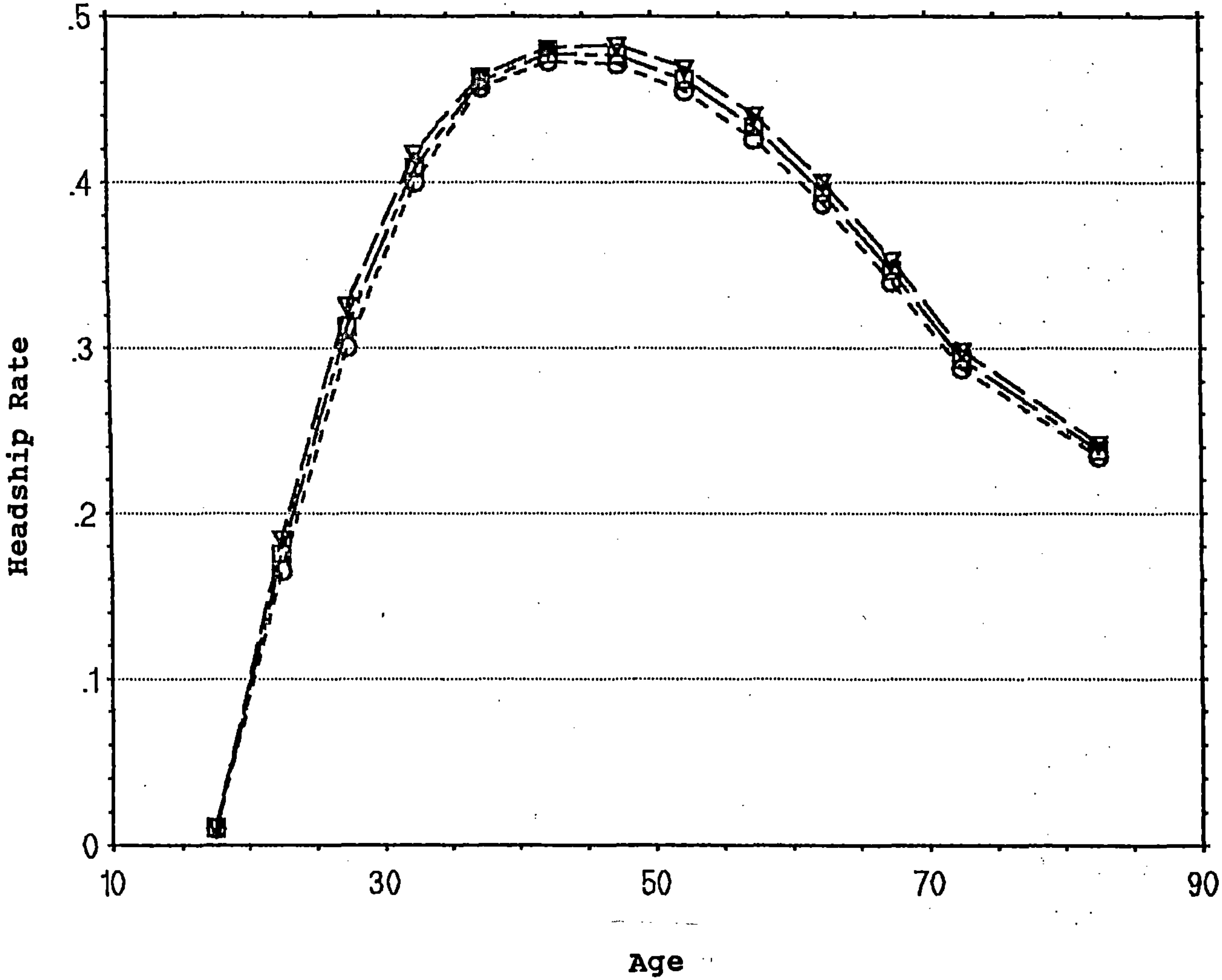
Figure 2 graphs the resulting non-family rates for all Canada for the year 2001, fifteen years out from the base date of 1986. The differences between the high and low series are non-negligible, but except for the oldest ages are approximately 0.02 to 0.03.

Figure 3 presents a similar graph for family headship. As can be seen, the variants are much more closely clustered, with high and low series differing by less than 0.02.

The differences in these two outcomes clearly reflect the greater changes in non-family headship in the base period 1971-86. For example, the family headship rate for Canadians 50-54 varied between 0.453 and 0.465 over that period. The non-family rate for the same age group, by contrast, varied between 0.068 and 0.093, a difference of roughly fifty percent. The greater volatility in non-family rates is picked up by the models and reflected in the projections.

At the provincial/territorial level, of course, differences between high and low series may be greater than for all Canada, to the extent that provincial/territorial values for regressors have shown greater empirical variation in the period 1971-86.

FIGURE 3
Comparison of Pooled Projections to 2001
Family Variants, Canada



Also, the differences between the two series will increase over time to 2011, purely as a result of our procedures. But it seems reasonable to increase the size of the range of estimate, the further into the future one moves.

For the reasons noted earlier, for most uses of headship projections, the 'medium' series is the best choice. Especially in the near term, say to 1996, it seems highly that they represent reliable forecasts.

Substantive and Methodological Lessons

The project has reviewed a large part of the relevant literature and explored several different approaches to headship rate forecasts, using several different bodies of data. A number of lessons have been learned or reinforced, some of which should be useful in planning future work by CMHC and others.

1) *The volatility in household formation behaviour and headship rates (particularly non-family rates) over the last 25 years or so make it extremely difficult reliably to forecast future headship within a narrow range.* This volatility has been associated with large changes in relevant economic factors (income, unemployment, housing prices) and unprecedented changes in cultural norms and social definitions relating to sexual behaviour, parent-child relations, gender roles, marriage and family.

Whether the change is limited to changes in the values of the presumed determinants of headship, or whether there has also been change in the nature of the relationships -- structural change -- is a moot point. The pooled regression procedure used to make our final projections assumed (by necessity, given data and other constraints) that structural change had not and would not occur, that the estimated regression coefficients would remain fixed. But there is no firm evidence to rule out deeper, structural change as one moves further into the future, say to 2011, twenty or so years from now.

The need for realism about the limits of forecasting has been emphasized recently by Keyfitz (1992), perhaps the leading authority on demographic forecasts. Under a section headed 'Forecasting is Too Difficult for Existing Models,' he comments:

> The hazard arising from hidden underlying structural changes is greater the longer the span of time that the models cover. Econometric models have the modest aim of saying what will happen over the next few months or at most few years (p.11).

He summarizes approvingly the ideas of Herbert Simon to the effect that 'prediction...is rarely satisfactory,' and that the most useful exercise involves '...estimating the ultimate condition a present configuration is pointing toward' (p.11).[11] He concludes that models based on this approach '...can be good on testing policy proposals even though unable to predict the future' (p.11).

The results of the pooled regression model are presented in this spirit. The fact that forecasts fall within a fairly narrow range, even with extreme assumptions (in the sense explained earlier) about future values of regressors, gives confidence that it has captured some of the relevant dynamics in recent household formation, and the directions in which they are leading. But the overall assumption clearly is one of continuity, not sharp discontinuity, over the next twenty years or so.

2) *No consensus has been reached among scientists on a best methodology for projecting headship rates or households.* Simple

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[11]. Given recent developments in nonlinear dynamics (chaos, catastrophe theory, etc.), it might be argued that this view reflects a somewhat old-fashioned concern with equilibrium and continuity. But the underlying idea seems to be that policy research can be effective if it suggests that things are being moved in the right direction.

assumptions of continuity worked well for many decades, and led to widespread acceptance of the 'headship rate' method of household projections as the standard method, with extrapolation of cross-sectional rates. But this method, like many others, worked best when it was least needed, that is, when change in headship was small and regular, and failed when most needed. This has prompted interest in alternative approaches.

An interesting illustration of the prevailing methodological uncertainty was provided recently at a one-day workshop on household modelling and forecasting. Presentations by Dutch participants revealed that even in The Netherlands, where arguably the most sophisticated work has been done on household forecasting, there is no agreement on a best approach. Three Dutch presentations argued for the merits of, respectively, a microsimulation model, a macrosimulation model, and a modified headship approach (see: Nelissen, 1992; Hooimeijer and Heida, 1992; de Beer, 1992). The latter is preferred by the central statistical office of The Netherlands because of its transparency and the consistency of resulting household projections with the official population projections. But none of the three participants felt he could claim his approach was optimal. And the differences among them in terms of output were non-negligible.

3) *The use of behavioural models for household forecasting is a scientifically appealing approach, but their use for preparation of routine, general-purpose projections is not without problems, given the amount of work involved.* The intuitve appeal comes from the sense that there is some behavioural rationale to the projections that is lacking with formal statistical approaches. Moreover, there is at least an appearance of breaking down a larger task (predicting headship) into several smaller tasks (predicting several independent variables), a rule-of-thumb for estimation and

prediction exercises.[12] But it is not at all clear that the latter tasks are indeed smaller, at least not when applied to many different geographical units. It could be argued that the behavioural approach substitutes *several* difficult projections tasks for *one* difficult projection task.

For example, projections based on the pooled regression model described above would properly involve separate models for each of several age/household type categories (which we have done), and customized projections of social and economic patterns for each province and territory (which we have not done), patterns involving several regressors (income, divorce rate, in-migration, etc.). If the results are to be comparable across areas, then the forecasts of these regressors for the provinces/territories would have to be prepared using comparable methodologies. The time and other research costs for these tasks would be high.

Apart from the inherent difficulties and costs associated with forecasting relevant independent variables, there is the problem of specifying models that can be relied on to give adequate forecasts (even assuming reasonable forecasts of regressors). Good model specification requires good theory, and as has been noted several times, theory in the area of household formation is less than fully developed. Much theory applies only to specific sub-groups (for example, young unmarried adults, older formerly married females, etc.), and would need considerable modification for application to age, sex, marital status, and household type categories not yet subjected to extensive research.

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[12]. It should be noted that this rule-of-thumb is honoured in the official household projections from Statistics Canada, in that headship rates are projected for very specific sub-groups -- by age, sex, marital status, province, etc., before the final results are aggregated to the national level.

The models estimated in this project fit relatively well by ordinary standards of goodness of fit (making allowance for that fact that some are at the individual level, some at the aggregate, but there is no assurance that the structure they represent will continue to operate fifteen or twenty-five years from now. Models incorporating changing parameters, which might be ideal in the case at hand[13], are beyond the frontiers of contemporary household formation research, and, at least for Canada, may be beyond what the available data base can support. In any case, changes in headship similar in magnitude to those observed in the last twenty-five years cannot be ruled out absolutely for the future, especially for the longer term, although they are not provided for by our projections.

Use of behavioural models such as these for forecasting purposes is based on the judgement that the structure will persist, as well as judgements about the likely future values of predictor variables.

The general econometric problems are complicated in working with individual or micro-data by the need to rely on instrumental variables to measure key regressors (e.g., potential income, housing costs, etc.), and by the problems of dynamics discussed in Working Paper #4A and above. With regard to the former, Kennedy (1985) comments:

> The major problem with the instrumental variables technique is that it is difficult to find a 'good' instrumental variable,

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[13]. We say 'might' because there is no conclusive empirical evidence for a 'structural shift' in headship patterns over the last two or three decades, although the reality of such a shift seems plausible. It seems likely, for example, that increased real income is more apt these days to lead a young adult to leave the parental household to live alone or with non-relatives (perhaps in cohabitation) than to marry and start a family as in the 1950's. Such a pattern might best be modelled with different coefficients on income, although perhaps a time-dummy would suffice.

> i.e., an instrumental variable that is highly correlated with the independent variable with which it is associated, but uncorrelated with the disturbance. Usually the choice of an instrumental variable is highly arbitrary --there is no way of knowing whether the most efficient of the available instrumental variables has been chosen. Worse still, there is really no way of checking if the instrumental variable is in fact independent of the disturbance. (Economic theory may be of help here.) Another objection to this estimator is that it leads to much higher variabnces than OLS....; the OLS estimator could be preferred on the MSE criterion' (p.115).

The instrumental variables used in Working Paper #4A are highly plausible and seem to work, but considerable econometric experimentation would be need to established their optimality from a formal statistical standpoint.

Modelling the dynamics of the situation is an even greater challenge, in the absence of good time series of many of the key variables (including headship rates themselves, which are available on a comparable basis only at fairly recent census dates), and, at the individual level, the absence of retrospective or longitudinal data sets on household status, from which individual event-histories can be constructed and analyzed.[14]

The general approach to more adequate dynamic models would involve considerable use of lagged variables and also development of systems of equations to deal with issues of simultaneity and endogeneity. Such models will become fairly complex. For example, in recent work by Haurin *et al.* (for example, 1992), the model involves upwards of five separate equations for one narrowly defined sub-group. And, their assumptions about the sequencing of

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[14]. Note that recent retrospective surveys by Statistics Canada, notably, the 1985 Family History Survey and the 1990 General Social Survey (on the family) have collected event histories on births, cohabitation, marriage and divorce. To the best of our knowledge, however, nothing approaching a residence or household status history has yet been collected on a large national sample of Canadians.

various choices and behaviours is somewhat arbitrary. The proper formulation and estimation of models such as these for Canada, for all relevant sub-groups, is a major research task.

4. *Future efforts to improve household projections or forecasts, especially efforts aimed at more dynamic models, must include plans for development or collection of new and better data.* Some of the most promising dynamic modelling approaches (for example, LIPRO, a mulststate modelling package developed at NIDI in The Netherlands) require as input transition rates among various household/family statuses. Such rates can be derived from special household surveys (one cross-section with retrospective questions, or, preferably a two-stage panel study), but such data are not yet available for Canada. Partial information can be derived from existing surveys (for example, on home-leaving, marriage, divorce), but several key household formation/change/dissolution events remain undocumented for Canada.

5. *Given the dynamic character of recent household formation patterns, and the lack of adequately detailed data on household formation and related variables, it may be useful to explore the use of simulation rather than empirical model estimation for purposes of household projection.* The tool would be dynamic non-linear systems modelling with feedbacks. The game would be exploration of outcomes, including broad qualitative outcomes, of many different scenarios, including different policy scenarios, rather than attempts at precise quantitative prediction. This would require a change in prevailing attitudes towards towards policy research, which still emphasize an ability to foretell the future.

Concluding Comments

Some specific suggestions concerning future work:

1) The use of multivariate behavioural models as a basis for household projections seems promising. The results have the advantage for the policymaker or policy analyst that there is at least some sense of a behavioural rationale underlying the resulting numbers. The policymaker can think about the content of the model and about the future course of particular variables, as well as about ways in which policy might intervene to change or at least to cope with the system.

2) Given the current limitation on Canadian data, aggregate modelling with pooled time-series/cross-sectional data seems to allow the greatest scope for expansion of regressor sets, and for the elaboration of more complex, particularly more dynamic, models. This approach would be facilitated were CMHC to develop somewhat longer time-series of key variables (say, back to 1951), notably headship by household type, but also of housing costs, income, etc. by province/territory.

3) The full fruits of a behavioural approach will result from work by an interdisciplinary team, representing economics, demography and family sociology. This will help avoid limited, one-sided analyses, and take advantage of complementary analytic skills.

* * *

<u>Working Papers and Other Reports Submitted</u> (in chronological order of original version)

Burch and Skaburskis. March 1992.
Determinants and Predictors of Household Headship: A Review of Literature on Behavioural Models. Working Paper #1. 39 pp.

Burch, Li and Skaburskis. May 1992.
A Cohort Approach to Projecting Household Rates. Working Paper #2. 16 pp. plus graphs.

Skaburskis and Burch. May 1992; revised December 1992.
Determinants and Predictors of Household Headship: Model Specification. Working Paper #3. 45 pp.

Li Sihe. 15 May 1992.
Determinants of Household Headship: A Logistic Analysis. Research Note. 31 pp.

Skaburskis and Burch. 1 August 1992; revised 20 December 1992.
Analysis of Household Formation Behaviour Using the 1986 Census Public-Use Micro-Data Files for Households and Individuals. Working Paper #4A. 25 pp. plus tables.

Burch, Li and Skaburskis. October 1992.
Cohort-Based Projections of Headship Rates for Family and Non-Family Households, 1991-2011. Working Paper #2A. 7 pp. plus tables and graphs.

Burch, Li and Skaburskis. 2 November 1992.
Projecting Household Headship: Aggregate Regression with Pooled Cross-Section and Time-Series Data. Research Note. 5 pp. plus tables.

Skaburskis and Burch. 1 December 1992.
Analysis of Provincial Headship Rate Data, 1971-1986. Working Paper #4B. 44 pp. plus tables.

Burch, Skaburskis and Li. December 1992; revised February 1993.
Projecting Household Headship: Exploration and Comparison of Formal Behavioural Approaches. Final Report. 27 pp. plus tables and graphs.

Burch and Skaburskis. February 1993.
Projecting Household Headship :Exploration and Comparison of Formal and Behavioural Approaches. Project Summary. 7 pp.

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The demand for housing, household headship rates, and household formation: an international analysis. *Urban Studies* 21:401-14.

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Appendix A: Data Matrix

DATA FOR POOLED CROSS-SECTION/TIME-SERIES REGRESSION

Region	Year	Crude Divorce Rate (per 100,000)	Per capita income (1985 $ in $1000)	Un-employment rate	In-migration rate (inter-province & immigration)	Housing costs index (1971=100)	Mortality (Deaths per 1000)
NFLD	1976	76.0	13.780	13.4	4.83	150.1	6.0
	1981	100.2	14.974	13.9	4.08	257.4	5.9
	1986	107.3	14.156	20.0	3.61	341.7	6.2
PEI	1976	98.1	12.320	9.6	12.23	122.3	9.3
	1981	152.6	13.496	11.2	9.79	193.6	8.0
	1986	150.9	13.739	13.4	9.00	243.7	8.9
NS	1976	211.6	14.430	9.5	8.98	139.6	8.4
	1981	269.6	15.434	10.2	8.08	225.6	8.1
	1986	292.0	16.030	13.4	7.84	303.7	8.3
NB	1976	138.5	13.840	11.0	9.73	142.2	7.7
	1981	191.6	14.915	11.5	7.52	237.5	7.4
	1986	239.6	14.870	14.4	6.39	324.4	7.7
QUE	1976	243.6	16.940	8.7	3.25	135.3	6.9
	1981	298.1	17.826	10.3	2.47	220.6	6.7
	1986	281.7	17.057	11.0	2.32	302.0	7.2
ONT	1976	224.9	18.180	6.2	7.42	142.2	7.3
	1981	251.4	19.053	6.6	6.22	223.1	7.3
	1986	314.8	19.462	7.0	6.06	302.5	7.5
MAN	1976	190.0	15.550	4.7	9.11	149.4	8.1
	1981	233.8	16.706	5.9	8.23	236.1	8.2
	1986	274.4	16.796	7.7	7.84	317.1	8.4
SAS	1976	131.0	15.610	3.9	7.38	142.7	8.5
	1981	199.5	17.775	4.7	8.28	227.3	8.4
	1986	237.2	16.828	7.7	6.99	303.4	8.0
ALB	1976	309.9	18.930	4.0	14.07	147.1	6.3
	1981	376.2	21.022	3.8	20.82	250.3	5.6
	1986	396.7	19.661	9.8	10.93	306.6	5.7
BC	1976	333.7	18.910	8.6	13.62	145.1	7.6
	1981	347.4	20.376	6.7	13.09	230.1	7.4
	1986	387.6	18.571	12.6	8.37	286.7	7.4
YUK	1976	306.8	21.460	12.1	35.40	184.5	5.6
	1981	324.0	22.295	12.9	34.83	268.1	5.0
	1986	378.7	19.414	13.3	23.28	333.9	4.8
NWT	1976	136.1	17.320	12.8	26.33	169.6	5.0
	1981	144.3	18.748	13.6	26.48	239.2	4.9
	1986	180.1	20.066	14.0	20.97	297.7	4.5

DATA FOR POOLED CROSS-SECTION/TIME-SERIES REGRESSION (CONT'D)

CND	1976	235.8	16.613	8.3	6.00	147.5	7.3
	1981	278.0	18.593	7.5	5.00	234.1	7.0
	1986	308.8	18.188	9.6	4.00	305.3	7.3

Appendix B: Estimated Models

NON-FAMILY HOUSEHOLD HEADSHIP MODELS

Table 65.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = NON-FAMILY RATE, 15-19

BUSE R-SQUARE = 0.8641

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	ASYMPTOTIC T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	0.54048	0.12165	4.4429	0.6364	0.55515
DIVORCE	0.50364E-05	0.11661E-04	0.43189	0.0799	0.45876E-01
UNEMPLOY	-0.67006E-03	0.26956E-03	-2.4857	-0.4191	-0.25062
INCOME	0.86514E-03	0.48182E-03	1.7956	0.3163	0.21915
INMIGRATE	0.17160E-03	0.13031E-03	1.3168	0.2375	0.14627
HCOST	-0.43228E-04	0.13640E-04	-3.1693	-0.5072	-0.29615
CONSTANT	0.61288E-02	0.61871E-02	0.99059	0.1809	0.00000E+00

Table 66.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = NON-FAMILY RATE, 25-29

BUSE R-SQUARE = 0.9836

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	ASYMPTOTIC T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	0.81856	0.54880E-01	14.915	0.9406	0.85341
DIVORCE	0.19303E-04	0.19499E-04	0.98990	0.1808	0.48438E-01
UNEMPLOY	-0.19266E-02	0.41415E-03	-4.6520	-0.6537	-0.19851
INCOME	0.18546E-02	0.74892E-03	2.4763	0.4178	0.12942
INMIGRATE	0.84246E-04	0.17690E-03	0.47624	0.0881	0.19783E-01
HCOST	-0.43315E-04	0.25581E-04	-1.6932	-0.3000	-0.81752E-01
CONSTANT	0.26908E-01	0.89849E-02	2.9948	0.4860	0.00000E+00

Table 67.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = NON-FAMILY RATE, 35-39

BUSE R-SQUARE = 0.9689

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	ASYMPTOTIC T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	0.99693	0.70476E-01	14.146	0.9346	0.82353
DIVORCE	0.36722E-04	0.14737E-04	2.4919	0.4200	0.14195
UNEMPLOY	-0.46681E-03	0.22293E-03	-2.0940	-0.3624	-0.74092E-01
INCOME	0.13348E-03	0.62913E-03	0.21217	0.0394	0.14349E-01
INMIGRATE	-0.20874E-03	0.15687E-03	-1.3307	-0.2399	-0.75508E-01
HCOST	0.39126E-04	0.12835E-04	3.0483	0.4926	0.11375
CONSTANT	-0.10247E-02	0.83483E-02	-0.12274	-0.0228	0.00000E+00

Table 68.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = NON-FAMILY RATE, 40-44

BUSE R-SQUARE = 0.9667

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	ASYMPTOTIC T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	1.0841	0.53822E-01	20.142	0.9639	0.95835
INCOME	0.84582E-03	0.33993E-03	2.4882	0.4080	0.98857E-01
INMIGRATE	-0.39254E-03	0.92582E-04	-4.2400	-0.6059	-0.15439
HCOST	0.36948E-04	0.83041E-05	4.4494	0.6243	0.11679
CONSTANT	-0.14339E-01	0.48434E-02	-2.9606	-0.4695	0.00000E+00

Table 69.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = NON-FAMILY RATE, 45-49

BUSE R-SQUARE = 0.9916

VARIABLE NAME	ESTIMATED COEFFICIENT	ASYMPTOTIC STANDARD ERROR	T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	1.2623	0.30239E-01	41.743	0.9912	1.0266
INCOME	0.28488E-03	0.25208E-03	1.1301	0.1989	0.34384E-01
INMIGRATE	-0.50314E-03	0.64087E-04	-7.8509	-0.8157	-0.20435
HCOST	0.44770E-05	0.59099E-05	0.75754	0.1348	0.14614E-01
CONSTANT	-0.84758E-02	0.34263E-02	-2.4738	-0.4060	0.00000E+00

Table 70.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = NON-FAMILY RATE, 75+

BUSE R-SQUARE = 0.9865

VARIABLE NAME	ESTIMATED COEFFICIENT	ASYMPTOTIC STANDARD ERROR	T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	1.1583	0.37590E-01	30.813	0.9841	1.1360
MORTALITY	-0.99693E-02	0.19754E-02	-5.0466	-0.6716	-0.16524
INCOME	-0.46305E-02	0.93218E-03	-4.9674	-0.6657	-0.14907
HCOST	-0.13742E-03	0.20772E-04	-6.6158	-0.7651	-0.11965
CONSTANT	0.16843	0.23921E-01	7.0409	0.7844	0.00000E+00

Table 71.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = FAMILY RATE, 15-19

BUSE R-SQUARE = 0.9297

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	ASYMPTOTIC T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	0.32074	0.11382	2.8179	0.4636	0.32738
DIVORCE	-0.70681E-06	0.35673E-05	-0.19814	-0.0368	-0.16501E-01
UNEMPLOY	-0.47372E-03	0.74791E-04	-6.3338	-0.7619	-0.45411
INCOME	0.30677E-03	0.15250E-03	2.0116	0.3499	0.19917
INMIGRATE	0.12179E-03	0.51781E-04	2.3520	0.4002	0.26607
HCOST	-0.51698E-05	0.48461E-05	-1.0668	-0.1943	-0.90777E-01
CONSTANT	0.60908E-02	0.20182E-02	3.0179	0.4889	0.00000E+00

Table 72.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = FAMILY RATE, 25-29

BUSE R-SQUARE = 0.8776

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	ASYMPTOTIC T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	0.53382	0.12389	4.3089	0.6248	0.36817
DIVORCE	-0.22759E-04	0.26711E-04	-0.85205	-0.1563	-0.91062E-01
UNEMPLOY	-0.10845E-02	0.63645E-03	-1.7039	-0.3017	-0.17817
INCOME	-0.12794E-02	0.11656E-02	-1.0977	-0.1997	-0.14236
INMIGRATE	-0.11396E-03	0.27070E-03	-0.42100	-0.0779	-0.42671E-01
HCOST	-0.15979E-03	0.24038E-04	-6.6473	-0.7770	-0.48085
CONSTANT	0.22458	0.54240E-01	4.1405	0.6095	0.00000E+00

Table 73.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = FAMILY RATE, 35-39

BUSE R-SQUARE = 0.3700

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	ASYMPTOTIC T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	0.47454	0.13039	3.6395	0.5599	0.69329
DIVORCE	-0.28412E-04	0.15703E-04	-1.8093	-0.3185	-0.29359
UNEMPLOY	-0.96286E-04	0.34250E-03	-0.28113	-0.0521	-0.40853E-01
INCOME	0.26708E-03	0.80268E-03	0.33273	0.0617	0.76746E-01
INMIGRATE	-0.28474E-04	0.19721E-03	-0.14438	-0.0268	-0.27533E-01
HCOST	-0.62892E-04	0.24764E-04	-2.5396	-0.4265	-0.48878
CONSTANT	0.26179	0.53656E-01	4.8790	0.6714	0.00000E+00

Table 74.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = FAMILY RATE, 40-44

BUSE R-SQUARE = 0.8180

VARIABLE NAME	ESTIMATED COEFFICIENT	STANDARD ERROR	ASYMPTOTIC T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	0.66210	0.76926E-01	8.6070	0.8396	1.1057
INCOME	-0.75679E-03	0.42691E-03	-1.7727	-0.3034	-0.19233
INMIGRATE	0.21915E-03	0.13439E-03	1.6307	0.2811	0.18741
HCOST	-0.65069E-04	0.12699E-04	-5.1239	-0.6772	-0.44724
CONSTANT	0.19113	0.28401E-01	6.7295	0.7705	0.00000E+00

Table 75.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = FAMILY RATE, 45-49

BUSE R-SQUARE = 0.8257

VARIABLE NAME	ESTIMATED COEFFICIENT	ASYMPTOTIC STANDARD ERROR	T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	0.84442	0.10457	8.0749	0.8233	1.1094
INCOME	-0.19386E-03	0.39657E-03	-0.48884	-0.0875	-0.41414E-01
INMIGRATE	0.45205E-06	0.15890E-03	0.28449E-02	0.0005	0.32496E-03
HCOST	-0.76750E-04	0.21894E-04	-3.5056	-0.5328	-0.44344
CONSTANT	0.10111	0.41494E-01	2.4367	0.4009	0.00000E+00

Table 76.

POOLED CROSS-SECTION TIME-SERIES ESTIMATION
12 CROSS-SECTIONS AND 3 TIME-PERIODS
36 TOTAL OBSERVATIONS

DEPENDENT VARIABLE = FAMILY RATE, 75+

BUSE R-SQUARE = 0.8593

VARIABLE NAME	ESTIMATED COEFFICIENT	ASYMPTOTIC STANDARD ERROR	T-RATIO	PARTIAL CORR.	STANDARDIZED COEFFICIENT
PRE-RATE	0.78816	0.78923E-01	9.9865	0.8734	0.86436
MORTALITY	-0.21502E-02	0.20416E-02	-1.0532	-0.1859	-0.88795E-01
INCOME	-0.13002E-02	0.10412E-02	-1.2488	-0.2188	-0.10428
HCOST	0.32379E-04	0.34457E-04	0.93970	0.1664	0.70236E-01
CONSTANT	0.73697E-01	0.50357E-01	1.4635	0.2542	0.00000E+00

Appendix C: Projection of Age-Specific Rates

TABLE 1.

NON-FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 15-19 AGE GROUP

SCENARIO		CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.002	.004	.003	.002	.003	.003	.004	.006	.007
	Low					.002	.002	.001	.001	.001
PEI	High	.003	.008	.007	.005	.006	.007	.009	.011	.013
	Low					.005	.005	.006	.006	.007
NS	High	.004	.009	.008	.006	.007	.008	.010	.013	.015
	Low					.006	.007	.007	.008	.009
NB	High	.003	.007	.007	.006	.007	.008	.009	.010	.012
	Low					.006	.006	.006	.006	.006
QUE	High	.007	.012	.016	.014	.015	.016	.017	.019	.021
	Low					.014	.014	.014	.015	.015
ONT	High	.007	.013	.013	.009	.010	.013	.016	.019	.023
	Low					.010	.011	.013	.015	.017
MAN	High	.014	.024	.028	.018	.018	.020	.022	.026	.029
	Low					.017	.018	.018	.020	.021
SAS	High	.015	.029	.034	.021	.021	.023	.026	.030	.034
	Low					.020	.020	.021	.022	.024
ALB	High	.017	.031	.036	.025	.026	.028	.031	.035	.040
	Low					.024	.025	.026	.028	.030
BC	High	.014	.024	.025	.018	.019	.021	.024	.027	.031
	Low					.018	.019	.020	.021	.023

YUK	High	.024	.032	.032	.016	.017	.020	.024	.029	.035
	Low					.015	.016	.018	.021	.024
NWT	High	.012	.018	.017	.009	.010	.012	.015	.019	.023
	Low					.009	.010	.011	.013	.015
CND	High	.009	.016	.018	.013	.014	.015	.017	.019	.022
	Low					.013	.013	.014	.015	.016

TABLE 2.

NON-FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 25-29 AGE GROUP

	SCENARIO	CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.011	.022	.039	.043	.045	.048	.052	.056	.060
	Low					.040	.036	.031	.025	.019
PEI	High	.019	.043	.063	.071	.074	.077	.082	.086	.091
	Low					.069	.066	.061	.056	.051
NS	High	.032	.058	.086	.090	.093	.096	.101	.106	.112
	Low					.087	.083	.078	.073	.067
NB	High	.022	.043	.064	.067	.069	.073	.078	.083	.088
	Low					.065	.061	.058	.053	.049
QUE	High	.060	.079	.110	.119	.122	.126	.130	.136	.141
	Low					.115	.110	.104	.097	.089
ONT	High	.056	.092	.123	.122	.125	.130	.136	.144	.151
	Low					.120	.118	.116	.114	.112
MAN	High	.051	.091	.128	.133	.157	.177	.194	.207	.218
	Low					.129	.125	.119	.113	.106
SAS	High	.045	.070	.113	.127	.131	.136	.142	.148	.155
	Low					.123	.116	.108	.098	.088
ALB	High	.062	.097	.141	.152	.156	.162	.169	.178	.186
	Low					.148	.141	.134	.125	.116
BC	High	.077	.119	.152	.159	.162	.166	.172	.178	.184
	Low					.155	.150	.144	.137	.130

YUK	High	.087	.113	.139	.133	.135	.140	.146	.153	.161
	Low					.131	.129	.127	.125	.123
NWT	High	.069	.105	.114	.113	.115	.118	.122	.126	.131
	Low					.112	.112	.111	.111	.110
CND	High	.056	.087	.120	.125	.127	.131	.135	.141	.146
	Low					.122	.118	.114	.109	.104

TABLE 3.

NON-FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 35-39 AGE GROUP

	SCENARIO	CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.012	.014	.020	.025	.027	.029	.031	.033	.036
	Low					.024	.022	.019	.016	.013
PEI	High	.021	.023	.038	.047	.049	.050	.052	.054	.056
	Low					.045	.041	.035	.029	.023
NS	High	.022	.029	.044	.057	.060	.063	.067	.070	.074
	Low					.055	.052	.047	.041	.035
NB	High	.019	.026	.036	.047	.050	.053	.056	.060	.063
	Low					.046	.043	.039	.034	.029
QUE	High	.045	.053	.072	.093	.097	.101	.105	.108	.112
	Low					.091	.086	.079	.071	.062
ONT	High	.035	.047	.065	.078	.081	.085	.090	.094	.099
	Low					.076	.073	.068	.063	.057
MAN	High	.034	.043	.060	.077	.081	.085	.089	.093	.097
	Low					.075	.071	.065	.058	.051
SAS	High	.034	.034	.047	.066	.070	.073	.077	.080	.084
	Low					.064	.060	.055	.048	.040
ALB	High	.041	.045	.067	.083	.087	.091	.096	.102	.107
	Low					.081	.076	.070	.063	.055
BC	High	.046	.058	.083	.104	.108	.112	.117	.121	.126
	Low					.101	.096	.088	.079	.069

YUK	High	.079	.070	.077	.104	.109	.113	.116	.119	.122
	Low					.103	.099	.093	.085	.076
NWT	High	.050	.048	.071	.084	.086	.088	.089	.091	.093
	Low					.080	.074	.067	.058	.049
CND	High	.038	.047	.066	.082	.085	.089	.093	.097	.101
	Low					.080	.076	.070	.063	.056

TABLE 4.

NON-FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 40-44 AGE GROUP

SCENARIO		CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.016	.017	.021	.025	.027	.029	.031	.034	.037
	Low					.025	.024	.022	.021	.019
PEI	High	.033	.025	.045	.051	.052	.053	.055	.056	.058
	Low					.048	.043	.037	.030	.023
NS	High	.031	.033	.043	.051	.053	.055	.058	.060	.063
	Low					.050	.047	.043	.039	.035
NB	High	.026	.031	.038	.045	.047	.049	.052	.054	.057
	Low					.044	.042	.039	.036	.032
QUE	High	.048	.054	.070	.087	.090	.094	.098	.101	.105
	Low					.085	.081	.076	.069	.062
ONT	High	.038	.044	.057	.070	.073	.076	.080	.083	.087
	Low					.069	.066	.061	.056	.051
MAN	High	.041	.044	.056	.069	.072	.074	.077	.080	.083
	Low					.067	.064	.059	.054	.048
SAS	High	.042	.041	.046	.058	.061	.064	.066	.069	.072
	Low					.057	.056	.053	.049	.045
ALB	High	.046	.048	.059	.073	.076	.080	.083	.086	.090
	Low					.071	.068	.063	.057	.051
BC	High	.051	.054	.072	.094	.098	.102	.105	.109	.112
	Low					.092	.086	.079	.070	.060

	High					.112	.115	.118	.122	.125
YUK		.095	.087	.091	.108					
	Low					.107	.104	.100	.095	.089
	High					.080	.083	.085	.088	.090
NWT		.055	.062	.068	.078					
	Low					.077	.075	.071	.067	.063
	High					.078	.082	.085	.088	.092
CND		.042	.047	.060	.075					
	Low					.073	.070	.065	.059	.053

TABLE 5.

NON-FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 45-49 AGE GROUP

SCENARIO		CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.025	.026	.029	.030	.030	.031	.032	.032	.033
	Low					.030	.029	.028	.028	.027
PEI	High	.043	.044	.051	.058	.059	.061	.062	.064	.065
	Low					.057	.055	.052	.049	.045
NS	High	.043	.047	.053	.057	.058	.060	.061	.063	.065
	Low					.057	.056	.054	.053	.051
NB	High	.038	.043	.050	.054	.055	.057	.058	.060	.062
	Low					.053	.052	.050	.047	.045
QUE	High	.056	.063	.079	.094	.098	.102	.106	.110	.115
	Low					.093	.090	.086	.081	.075
ONT	High	.047	.053	.061	.070	.072	.075	.078	.081	.084
	Low					.070	.068	.066	.064	.061
MAN	High	.053	.058	.063	.073	.075	.078	.081	.083	.086
	Low					.073	.072	.070	.068	.065
SAS	High	.052	.053	.062	.069	.071	.073	.076	.079	.082
	Low					.068	.067	.064	.062	.059
ALB	High	.058	.059	.069	.079	.081	.084	.087	.090	.093
	Low					.078	.075	.071	.067	.062
BC	High	.061	.067	.078	.098	.102	.106	.110	.114	.118
	Low					.097	.093	.088	.082	.075

YUK	High	.090	.100	.089	.128	.135	.140	.144	.146	.149
	Low					.128	.123	.114	.104	.092
NWT	High	.073	.075	.050	.078	.082	.085	.086	.086	.086
	Low					.078	.073	.066	.057	.047
CND	High	.051	.057	.067	.079	.082	.085	.088	.092	.095
	Low					.078	.076	.073	.069	.065

TABLE 6.

NON-FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 75+ AGE GROUP

SCENARIO		CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.123	.143	.174	.201	.210	.221	.232	.245	.258
	Low					.197	.190	.180	.169	.156
PEI	High	.206	.238	.274	.302	.312	.323	.336	.350	.365
	Low					.298	.290	.280	.267	.254
NS	High	.231	.274	.320	.334	.341	.351	.363	.375	.389
	Low					.329	.320	.310	.298	.286
NB	High	.208	.252	.287	.308	.317	.328	.340	.354	.368
	Low					.305	.299	.290	.280	.270
QUE	High	.177	.217	.259	.291	.299	.309	.319	.329	.340
	Low					.285	.274	.259	.242	.224
ONT	High	.280	.318	.344	.353	.359	.368	.378	.389	.401
	Low					.351	.347	.342	.336	.330
MAN	High	.277	.320	.366	.389	.397	.408	.420	.433	.446
	Low					.384	.374	.362	.349	.334
SAS	High	.284	.317	.350	.372	.384	.374	.362	.349	.334
	Low					.368	.361	.351	.339	.327
ALB	High	.262	.287	.311	.338	.347	.358	.370	.383	.396
	Low					.335	.329	.321	.310	.299
BC	High	.308	.333	.344	.354	.360	.368	.377	.387	.397
	Low					.354	.352	.350	.348	.345

YUK	High	.257	.316	.341	.400	.414	.428	.442	.455	.469
	Low					.397	.386	.371	.351	.330
NWT	High	.186	.221	.151	.179	.196	.214	.234	.255	.276
	Low					.181	.180	.175	.168	.160
CND	High	.253	.288	.318	.336	.343	.353	.363	.375	.387
	Low					.331	.324	.313	.302	.289

TABLE 7.

FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 15-19 AGE GROUP

SCENARIO		CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.004	.005	.004	.004	.006	.006	.006	.006	.006
	Low					.003	.003	.003	.003	.003
PEI	High	.006	.008	.007	.005	.009	.010	.010	.010	.010
	Low					.007	.006	.006	.006	.006
NS	High	.005	.009	.008	.006	.010	.010	.010	.010	.010
	Low					.007	.007	.007	.007	.007
NB	High	.005	.011	.009	.006	.009	.009	.009	.009	.009
	Low					.007	.006	.006	.006	.006
QUE	High	.003	.007	.009	.009	.010	.010	.010	.010	.010
	Low					.008	.008	.008	.008	.008
ONT	High	.007	.010	.009	.007	.012	.013	.013	.013	.013
	Low					.011	.012	.012	.012	.012
MAN	High	.007	.011	.012	.010	.013	.013	.014	.014	.014
	Low					.011	.011	.011	.011	.011
SAS	High	.006	.012	.014	.012	.014	.014	.015	.015	.015
	Low					.012	.012	.012	.012	.012
ALB	High	.008	.013	.018	.013	.018	.018	.018	.018	.018
	Low					.014	.014	.014	.014	.014
BC	High	.008	.010	.011	.009	.013	.014	.014	.014	.014
	Low					.011	.011	.011	.011	.011

YUK	High	.010	.014	.023	.008	.018	.016	.015	.015	.015
	Low					.013	.013	.013	.012	.012
NWT	High	.008	.007	.009	.009	.011	.012	.012	.012	.012
	Low					.010	.010	.010	.010	.010
CND	High	.006	.009	.010	.009	.011	.011	.011	.011	.011
	Low					.010	.010	.010	.010	.010

TABLE 8.

FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 25-29 AGE GROUP

	SCENARIO	CMHC SERIES 1971	1976	1981	1986	PROJECTIONS 1991	1996	2001	2006	2011
NFLD	High	.337	.360	.340	.295	.299	.309	.323	.340	.358
	Low					.290	.287	.285	.284	.284
PEI	High	.345	.357	.349	.316	.319	.327	.338	.351	.366
	Low					.313	.312	.313	.315	.317
NS	High	.351	.359	.339	.316	.320	.327	.336	.347	.359
	Low					.313	.310	.307	.304	.302
NB	High	.357	.377	.357	.327	.330	.337	.346	.358	.370
	Low					.322	.318	.314	.310	.306
QUE	High	.345	.353	.342	.315	.317	.324	.332	.343	.354
	Low					.311	.308	.306	.304	.303
ONT	High	.358	.349	.329	.298	.302	.311	.323	.337	.352
	Low					.295	.294	.293	.294	.295
MAN	High	.368	.357	.344	.320	.323	.329	.338	.349	.361
	Low					.316	.314	.311	.310	.308
SAS	High	.365	.372	.368	.347	.348	.352	.358	.364	.372
	Low					.342	.338	.333	.329	.324
ALB	High	.379	.367	.342	.325	.328	.334	.342	.350	.360
	Low					.321	.316	.311	.306	.300
BC	High	.355	.339	.321	.295	.299	.306	.316	.329	.342
	Low					.292	.289	.288	.287	.286

YUK	High	.364	.331	.324	.303	.304	.307	.311	.317	.324
	Low					.298	.293	.287	.282	.277
NWT	High	.345	.324	.319	.300	.302	.306	.313	.320	.329
	Low					.297	.294	.292	.291	.289
CND	High	.355	.353	.336	.309	.312	.319	.328	.339	.351
	Low					.305	.303	.301	.299	.298

TABLE 9.

FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 35-39 AGE GROUP

SCENARIO		CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.445	.462	.466	.463	.466	.467	.468	.468	.468
	Low					.458	.456	.455	.455	.455
PEI	High	.427	.447	.471	.454	.467	.470	.472	.473	.473
	Low					.456	.460	.462	.463	.464
NS	High	.434	.457	.463	.454	.461	.462	.463	.463	.463
	Low					.451	.451	.451	.451	.451
NB	High	.431	.462	.473	.466	.466	.465	.465	.465	.465
	Low					.456	.453	.452	.451	.451
QUE	High	.439	.457	.464	.453	.462	.463	.464	.464	.464
	Low					.453	.453	.452	.452	.452
ONT	High	.459	.468	.469	.451	.463	.464	.464	.465	.465
	Low					.452	.452	.452	.452	.453
MAN	High	.453	.460	.467	.455	.457	.459	.461	.464	.467
	Low					.453	.452	.452	.450	.447
SAS	High	.441	.453	.466	.467	.468	.469	.471	.473	.477
	Low					.465	.463	.460	.457	.454
ALB	High	.471	.472	.473	.463	.464	.465	.467	.470	.473
	Low					.464	.462	.461	.460	.460
BC	High	.466	.467	.462	.444	.447	.451	.456	.462	.469
	Low					.445	.446	.447	.448	.449

YUK	High	.437	.456	.464	.441	.443	.447	.452	.458	.466
	Low					.442	.443	.443	.443	.443
NWT	High	.459	.441	.447	.457	.459	.461	.463	.465	.468
	Low					.457	.456	.454	.452	.450
CND	High	.452	.464	.467	.453	.456	.460	.464	.468	.471
	Low					.454	.455	.457	.460	.462

TABLE 10.

FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 40-44 AGE GROUP

SCENARIO		CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.457	.473	.484	.481	.483	.485	.487	.489	.492
	Low					.480	.479	.477	.475	.472
PEI	High	.426	.447	.470	.474	.476	.479	.482	.486	.490
	Low					.472	.470	.468	.466	.463
NS	High	.433	.464	.473	.475	.477	.479	.482	.485	.488
	Low					.474	.473	.471	.470	.468
NB	High	.437	.459	.481	.484	.485	.486	.488	.491	.494
	Low					.482	.479	.475	.470	.464
QUE	High	.446	.462	.472	.471	.473	.475	.477	.480	.483
	Low					.470	.469	.468	.466	.464
ONT	High	.467	.480	.482	.476	.477	.479	.482	.485	.489
	Low					.475	.475	.474	.474	.473
MAN	High	.452	.468	.475	.472	.474	.476	.479	.482	.486
	Low					.472	.471	.471	.470	.469
SAS	High	.446	.461	.472	.475	.477	.479	.481	.483	.486
	Low					.474	.472	.470	.468	.465
ALB	High	.474	.488	.488	.482	.483	.485	.488	.491	.495
	Low					.481	.480	.479	.478	.477
BC	High	.469	.488	.479	.467	.471	.476	.481	.487	.493
	Low					.467	.467	.467	.468	.468

YUK	High	.446	.463	.494	.471	.475	.480	.486	.492	.499
	Low					.470	.469	.468	.466	.464
NWT	High	.450	.477	.458	.464	.468	.472	.477	.483	.489
	Low					.464	.464	.464	.464	.464
CND	High	.458	.474	.478	.474	.476	.478	.481	.484	.487
	Low					.474	.473	.473	.472	.472

TABLE 11.

FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 45-49 AGE GROUP

	SCENARIO	CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.463	.471	.492	.491	.492	.494	.496	.499	.502
	Low					.489	.485	.481	.476	.470
PEI	High	.429	.449	.466	.472	.473	.475	.478	.482	.488
	Low					.471	.469	.466	.463	.459
NS	High	.439	.450	.470	.475	.477	.479	.482	.485	.489
	Low					.473	.470	.466	.461	.455
NB	High	.447	.456	.468	.478	.479	.481	.484	.487	.491
	Low					.476	.473	.469	.464	.458
QUE	High	.448	.461	.467	.465	.467	.470	.473	.477	.482
	Low					.465	.465	.465	.464	.464
ONT	High	.458	.478	.485	.479	.481	.484	.487	.491	.496
	Low					.479	.479	.479	.478	.478
MAN	High	.442	.458	.475	.471	.473	.476	.479	.483	.488
	Low					.470	.468	.466	.463	.460
SAS	High	.441	.454	.468	.467	.469	.471	.474	.478	.482
	Low					.466	.465	.463	.461	.458
ALB	High	.459	.479	.489	.479	.481	.484	.488	.493	.499
	Low					.479	.479	.479	.478	.478
BC	High	.448	.476	.486	.467	.470	.475	.481	.488	.497
	Low					.467	.467	.468	.469	.470

	High					.456	.460	.465	.470	.476
YUK		.435	.448	.465	.453					
	Low					.453	.453	.452	.451	.449
	High					.457	.461	.466	.473	.482
NWT		.458	.464	.471	.454					
	Low					.455	.456	.458	.461	.466
	High					.476	.480	.483	.487	.491
CND		.452	.470	.479	.473					
	Low					.473	.472	.471	.471	.471

TABLE 12.

FAMILY HOUSEHOLD HEADSHIP RATES
WITH HIGH & LOW RATE SCENARIOS FOR PROJECTIONS,
CANADA, 1971 TO 2011, 75+ AGE GROUP

	SCENARIO	CMHC SERIES				PROJECTIONS				
		1971	1976	1981	1986	1991	1996	2001	2006	2011
NFLD	High	.321	.308	.274	.285	.286	.288	.290	.293	.297
	Low					.283	.279	.275	.269	.262
PEI	High	.281	.290	.247	.243	.246	.251	.258	.267	.277
	Low					.242	.240	.238	.235	.231
NS	High	.300	.287	.256	.262	.262	.263	.264	.266	.268
	Low					.260	.258	.255	.252	.247
NB	High	.312	.288	.257	.261	.261	.262	.264	.267	.271
	Low					.260	.259	.257	.254	.251
QUE	High	.280	.281	.231	.225	.228	.233	.240	.250	.262
	Low					.225	.225	.225	.224	.223
ONT	High	.255	.246	.221	.226	.227	.228	.229	.230	.232
	Low					.225	.224	.222	.220	.217
MAN	High	.301	.285	.246	.244	.247	.250	.254	.259	.265
	Low					.243	.242	.241	.239	.237
SAS	High	.323	.312	.270	.266	.268	.271	.275	.280	.286
	Low					.265	.263	.260	.257	.253
ALB	High	.280	.275	.246	.245	.245	.246	.248	.252	.257
	Low					.244	.243	.241	.239	.237
BC	High	.267	.257	.241	.248	.247	.246	.245	.243	.240
	Low					.246	.244	.241	.237	.231

YUK	High	.286	.263	.205	.220	.222	.226	.232	.240	.250
	Low					.219	.217	.214	.211	.207
NWT	High	.372	.338	.326	.321	.321	.320	.318	.315	.312
	Low					.319	.316	.312	.307	.301
CND	High	.276	.267	.235	.237	.238	.340	.242	.245	.248
	Low					.236	.235	.234	.232	.230

Appendix D: Projected Cross-Sections, 1991-2011

Table 13.

Non-family household headship projection, 1991-2011, Canada

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.014	0.015	0.017
22.5	0.087	0.09	0.093
27.5	0.127	0.131	0.135
32.5	0.114	0.118	0.122
37.5	0.085	0.089	0.093
42.5	0.078	0.082	0.085
47.5	0.082	0.085	0.088
52.5	0.1	0.103	0.106
57.5	0.132	0.135	0.139
62.5	0.175	0.179	0.185
67.5	0.226	0.232	0.239
72.5	0.283	0.291	0.3
77.5	0.343	0.353	0.363

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.019	0.022
22.5	0.098	0.102
27.5	0.141	0.146
32.5	0.128	0.132
37.5	0.097	0.101
42.5	0.088	0.092
47.5	0.092	0.095
52.5	0.112	0.114
57.5	0.146	0.149
62.5	0.193	0.198
67.5	0.249	0.255
72.5	0.31	0.32
77.5	0.375	0.387

Table 14.

Non-family household headship projection, 1991-2011, Canada

Low variant scenario

age x	1991 interp(vs6,a,l91,x)	1996 interp(vs7,a,l96,x)	2001 interp(vs8,a,l01,x)
17.5	0.013	0.013	0.014
22.5	0.084	0.081	0.08
27.5	0.122	0.118	0.114
32.5	0.109	0.104	0.099
37.5	0.08	0.076	0.07
42.5	0.073	0.07	0.065
47.5	0.078	0.076	0.073
52.5	0.096	0.095	0.093
57.5	0.128	0.126	0.124
62.5	0.17	0.167	0.163
67.5	0.219	0.215	0.21
72.5	0.274	0.268	0.26
77.5	0.331	0.324	0.313

age x	2006 interp(vs9,a,l06,x)	2011 interp(vs10,a,l11,x)
17.5	0.015	0.016
22.5	0.078	0.075
27.5	0.109	0.104
32.5	0.092	0.085
37.5	0.063	0.056
42.5	0.059	0.053
47.5	0.069	0.065
52.5	0.09	0.087
57.5	0.121	0.117
62.5	0.159	0.154
67.5	0.203	0.196
72.5	0.252	0.242
77.5	0.302	0.289

Table 15.

Family household headship projection, 1991-2011, Canada

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.011	0.011	0.011
22.5	0.174	0.179	0.185
27.5	0.312	0.319	0.328
32.5	0.405	0.411	0.418
37.5	0.456	0.46	0.464
42.5	0.476	0.478	0.481
47.5	0.476	0.48	0.483
52.5	0.46	0.466	0.469
57.5	0.432	0.438	0.441
62.5	0.392	0.399	0.401
67.5	0.345	0.351	0.353
72.5	0.293	0.297	0.299
77.5	0.238	0.24	0.242

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.011	0.011
22.5	0.192	0.201
27.5	0.339	0.351
32.5	0.427	0.435
37.5	0.468	0.471
42.5	0.484	0.487
47.5	0.487	0.491
52.5	0.474	0.479
57.5	0.446	0.451
62.5	0.406	0.411
67.5	0.358	0.362
72.5	0.303	0.306
77.5	0.245	0.248

Table 16.

Family household headship projection, 1991-2011, Canada

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.01	0.01	0.01
22.5	0.169	0.167	0.165
27.5	0.305	0.303	0.301
32.5	0.4	0.4	0.4
37.5	0.454	0.455	0.457
42.5	0.474	0.473	0.473
47.5	0.473	0.472	0.471
52.5	0.457	0.456	0.455
57.5	0.428	0.427	0.426
62.5	0.389	0.388	0.387
67.5	0.342	0.342	0.34
72.5	0.29	0.29	0.288
77.5	0.236	0.235	0.234

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.01	0.01
22.5	0.163	0.162
27.5	0.299	0.298
32.5	0.402	0.403
37.5	0.46	0.462
42.5	0.472	0.472
47.5	0.471	0.471
52.5	0.456	0.457
57.5	0.428	0.428
62.5	0.389	0.389
67.5	0.341	0.341
72.5	0.288	0.287
77.5	0.232	0.23

Table 17.

Non-family household headship projection, 1991-2011, NFLD

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.003	0.003	0.004
22.5	0.031	0.033	0.036
27.5	0.045	0.048	0.052
32.5	0.038	0.041	0.044
37.5	0.027	0.029	0.031
42.5	0.027	0.029	0.031
47.5	0.03	0.031	0.032
52.5	0.042	0.043	0.043
57.5	0.064	0.065	0.067
62.5	0.093	0.097	0.1
67.5	0.129	0.134	0.14
72.5	0.169	0.177	0.185
77.5	0.21	0.221	0.232

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.006	0.007
22.5	0.039	0.042
27.5	0.056	0.06
32.5	0.046	0.05
37.5	0.033	0.036
42.5	0.034	0.037
47.5	0.032	0.033
52.5	0.041	0.041
57.5	0.065	0.065
62.5	0.1	0.102
67.5	0.143	0.149
72.5	0.193	0.202
77.5	0.245	0.258

Table 18.

Non-family household headship projection, 1991-2011, NFLD

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.002	0.002	0.002
22.5	0.027	0.025	0.021
27.5	0.04	0.036	0.031
32.5	0.034	0.03	0.026
37.5	0.024	0.022	0.019
42.5	0.025	0.024	0.022
47.5	0.03	0.029	0.028
52.5	0.043	0.041	0.041
57.5	0.064	0.062	0.06
62.5	0.091	0.088	0.085
67.5	0.124	0.119	0.114
72.5	0.16	0.154	0.147
77.5	0.197	0.19	0.18

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.002	0.002
22.5	0.017	0.013
27.5	0.025	0.019
32.5	0.021	0.016
37.5	0.016	0.013
42.5	0.021	0.019
47.5	0.028	0.027
52.5	0.04	0.039
57.5	0.059	0.057
62.5	0.082	0.078
67.5	0.109	0.102
72.5	0.138	0.129
77.5	0.169	0.156

Table 19.

Family household headship projection, 1991-2011, NFLD

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.006	0.006	0.006
22.5	0.161	0.168	0.178
27.5	0.299	0.309	0.323
32.5	0.405	0.41	0.418
37.5	0.466	0.467	0.468
42.5	0.483	0.485	0.487
47.5	0.492	0.494	0.496
52.5	0.487	0.488	0.49
57.5	0.466	0.467	0.468
62.5	0.432	0.433	0.435
67.5	0.389	0.39	0.391
72.5	0.339	0.341	0.342
77.5	0.286	0.288	0.29

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.006	0.006
22.5	0.191	0.205
27.5	0.34	0.358
32.5	0.427	0.435
37.5	0.468	0.468
42.5	0.489	0.492
47.5	0.499	0.502
52.5	0.493	0.495
57.5	0.471	0.473
62.5	0.438	0.439
67.5	0.394	0.397
72.5	0.345	0.348
77.5	0.293	0.297

Table 20.

Family household headship projection, 1991-2011, NFLD

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.003	0.003	0.003
22.5	0.154	0.153	0.151
27.5	0.29	0.287	0.285
32.5	0.395	0.392	0.39
37.5	0.458	0.456	0.455
42.5	0.48	0.479	0.477
47.5	0.489	0.485	0.481
52.5	0.483	0.476	0.471
57.5	0.461	0.453	0.447
62.5	0.427	0.419	0.413
67.5	0.384	0.377	0.372
72.5	0.335	0.33	0.325
77.5	0.283	0.279	0.275

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.003	0.003
22.5	0.15	0.15
27.5	0.284	0.284
32.5	0.39	0.391
37.5	0.455	0.455
42.5	0.475	0.472
47.5	0.476	0.47
52.5	0.464	0.456
57.5	0.439	0.43
62.5	0.405	0.396
67.5	0.364	0.355
72.5	0.318	0.31
77.5	0.269	0.262

Table 21.

Non-family household headship projection, 1991-2011, PEI

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.006	0.007	0.009
22.5	0.051	0.053	0.057
27.5	0.074	0.077	0.082
32.5	0.064	0.067	0.07
37.5	0.049	0.05	0.052
42.5	0.052	0.053	0.055
47.5	0.059	0.061	0.062
52.5	0.078	0.081	0.082
57.5	0.109	0.114	0.115
62.5	0.151	0.157	0.161
67.5	0.2	0.208	0.214
72.5	0.255	0.264	0.274
77.5	0.312	0.323	0.336

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.011	0.013
22.5	0.061	0.065
27.5	0.086	0.091
32.5	0.073	0.077
37.5	0.054	0.056
42.5	0.056	0.058
47.5	0.064	0.065
52.5	0.085	0.086
57.5	0.121	0.123
62.5	0.168	0.172
67.5	0.224	0.231
72.5	0.286	0.297
77.5	0.35	0.365

Table 22.

Non-family household headship projection, 1991-2011, PEI

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.005	0.005	0.006
22.5	0.047	0.045	0.043
27.5	0.069	0.066	0.061
32.5	0.06	0.057	0.051
37.5	0.045	0.041	0.035
42.5	0.048	0.043	0.037
47.5	0.057	0.055	0.052
52.5	0.077	0.077	0.076
57.5	0.107	0.108	0.108
62.5	0.147	0.147	0.146
67.5	0.194	0.192	0.188
72.5	0.245	0.24	0.233
77.5	0.298	0.29	0.28

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.006	0.007
22.5	0.04	0.037
27.5	0.056	0.051
32.5	0.045	0.04
37.5	0.029	0.023
42.5	0.03	0.023
47.5	0.049	0.045
52.5	0.076	0.074
57.5	0.108	0.107
62.5	0.144	0.141
67.5	0.184	0.178
72.5	0.225	0.216
77.5	0.267	0.254

Table 23.

Family household headship projection, 1991-2011, PEI

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.009	0.01	0.01
22.5	0.176	0.182	0.19
27.5	0.319	0.327	0.338
32.5	0.417	0.423	0.43
37.5	0.467	0.47	0.472
42.5	0.476	0.479	0.482
47.5	0.473	0.475	0.478
52.5	0.458	0.459	0.462
57.5	0.43	0.431	0.434
62.5	0.393	0.394	0.398
67.5	0.348	0.35	0.355
72.5	0.298	0.302	0.308
77.5	0.246	0.251	0.258

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.01	0.01
22.5	0.2	0.211
27.5	0.351	0.366
32.5	0.436	0.443
37.5	0.473	0.473
42.5	0.486	0.49
47.5	0.482	0.488
52.5	0.465	0.472
57.5	0.438	0.445
62.5	0.402	0.41
67.5	0.361	0.369
72.5	0.315	0.324
77.5	0.267	0.277

Table 24.

Family household headship projection, 1991-2011, PEI

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.007	0.006	0.006	0.006	0.006
22.5	0.173	0.171	0.171	0.172	0.173
27.5	0.313	0.312	0.313	0.315	0.317
32.5	0.407	0.41	0.412	0.415	0.417
37.5	0.456	0.46	0.462	0.463	0.464
42.5	0.472	0.47	0.468	0.466	0.463
47.5	0.471	0.469	0.466	0.463	0.459
52.5	0.456	0.455	0.452	0.449	0.445
57.5	0.428	0.428	0.425	0.422	0.418
62.5	0.39	0.39	0.388	0.384	0.38
67.5	0.345	0.345	0.342	0.339	0.335
72.5	0.295	0.294	0.291	0.288	0.284
77.5	0.242	0.24	0.238	0.235	0.231

Table 25.

Non-family household headship projection, 1991-2011, NS

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.007	0.008	0.01
22.5	0.063	0.065	0.069
27.5	0.093	0.096	0.101
32.5	0.083	0.086	0.091
37.5	0.06	0.063	0.067
42.5	0.053	0.055	0.058
47.5	0.058	0.06	0.061
52.5	0.078	0.081	0.081
57.5	0.113	0.117	0.118
62.5	0.16	0.165	0.167
67.5	0.215	0.222	0.227
72.5	0.277	0.285	0.293
77.5	0.341	0.351	0.363

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.013	0.015
22.5	0.073	0.078
27.5	0.106	0.112
32.5	0.095	0.101
37.5	0.07	0.074
42.5	0.06	0.063
47.5	0.063	0.065
52.5	0.084	0.086
57.5	0.122	0.125
62.5	0.173	0.178
67.5	0.235	0.242
72.5	0.303	0.314
77.5	0.375	0.389

Table 26.

Non-family household headship projection, 1991-2011, NS

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.006	0.007	0.007
22.5	0.059	0.057	0.054
27.5	0.087	0.083	0.078
32.5	0.077	0.073	0.068
37.5	0.055	0.052	0.047
42.5	0.05	0.047	0.043
47.5	0.057	0.056	0.054
52.5	0.078	0.078	0.077
57.5	0.112	0.112	0.111
62.5	0.157	0.156	0.154
67.5	0.21	0.207	0.202
72.5	0.268	0.262	0.255
77.5	0.329	0.32	0.31

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.008	0.009
22.5	0.051	0.048
27.5	0.073	0.067
32.5	0.061	0.054
37.5	0.041	0.035
42.5	0.039	0.035
47.5	0.053	0.051
52.5	0.078	0.077
57.5	0.111	0.11
62.5	0.152	0.149
67.5	0.198	0.192
72.5	0.247	0.238
77.5	0.298	0.286

Table 27.

Family household headship projection, 1991-2011, NS

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.01	0.01	0.01
22.5	0.179	0.184	0.191
27.5	0.32	0.327	0.336
32.5	0.413	0.417	0.421
37.5	0.461	0.462	0.463
42.5	0.477	0.479	0.482
47.5	0.477	0.479	0.482
52.5	0.463	0.465	0.467
57.5	0.438	0.439	0.441
62.5	0.402	0.403	0.405
67.5	0.359	0.361	0.362
72.5	0.312	0.313	0.314
77.5	0.262	0.263	0.264

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.01	0.01
22.5	0.199	0.208
27.5	0.347	0.359
32.5	0.426	0.432
37.5	0.463	0.463
42.5	0.485	0.488
47.5	0.485	0.489
52.5	0.469	0.473
57.5	0.442	0.446
62.5	0.406	0.409
67.5	0.363	0.366
72.5	0.316	0.318
77.5	0.266	0.268

Table 28.

Family household headship projection, 1991-2011, NS

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.007	0.007	0.007
22.5	0.174	0.172	0.17
27.5	0.313	0.31	0.307
32.5	0.402	0.401	0.399
37.5	0.451	0.451	0.451
42.5	0.474	0.473	0.471
47.5	0.473	0.47	0.466
52.5	0.457	0.453	0.448
57.5	0.431	0.426	0.42
62.5	0.395	0.391	0.385
67.5	0.354	0.35	0.345
72.5	0.308	0.305	0.301
77.5	0.26	0.258	0.255

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.007	0.007
22.5	0.167	0.166
27.5	0.304	0.302
32.5	0.398	0.397
37.5	0.451	0.451
42.5	0.47	0.468
47.5	0.461	0.455
52.5	0.44	0.431
57.5	0.411	0.401
62.5	0.376	0.366
67.5	0.337	0.329
72.5	0.295	0.288
77.5	0.252	0.247

Table 29.

Non-family household headship projection, 1991-2011, NB

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.007	0.008	0.009
22.5	0.047	0.049	0.053
27.5	0.069	0.073	0.078
32.5	0.064	0.068	0.072
37.5	0.05	0.053	0.056
42.5	0.047	0.049	0.052
47.5	0.055	0.057	0.058
52.5	0.076	0.079	0.079
57.5	0.11	0.114	0.114
62.5	0.153	0.158	0.16
67.5	0.204	0.211	0.216
72.5	0.259	0.268	0.276
77.5	0.317	0.328	0.34

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.01	0.012
22.5	0.057	0.061
27.5	0.083	0.088
32.5	0.077	0.081
37.5	0.06	0.063
42.5	0.054	0.057
47.5	0.06	0.062
52.5	0.082	0.084
57.5	0.119	0.121
62.5	0.167	0.172
67.5	0.224	0.232
72.5	0.288	0.298
77.5	0.354	0.368

Table 30.

Non-family household headship projection, 1991-2011, NB

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.006	0.006	0.006
22.5	0.044	0.041	0.04
27.5	0.065	0.061	0.058
32.5	0.06	0.056	0.052
37.5	0.046	0.043	0.039
42.5	0.044	0.042	0.039
47.5	0.053	0.052	0.05
52.5	0.074	0.074	0.072
57.5	0.107	0.106	0.104
62.5	0.149	0.147	0.143
67.5	0.197	0.194	0.189
72.5	0.25	0.245	0.239
77.5	0.305	0.299	0.29

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.006	0.006
22.5	0.037	0.035
27.5	0.053	0.049
32.5	0.046	0.041
37.5	0.034	0.029
42.5	0.036	0.032
47.5	0.047	0.045
52.5	0.068	0.067
57.5	0.099	0.098
62.5	0.138	0.135
67.5	0.182	0.177
72.5	0.23	0.223
77.5	0.28	0.27

Table 31.

Family household headship projection, 1991-2011, NB

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.009	0.009	0.009
22.5	0.185	0.191	0.198
27.5	0.33	0.337	0.346
32.5	0.42	0.422	0.427
37.5	0.466	0.465	0.465
42.5	0.485	0.486	0.488
47.5	0.479	0.481	0.484
52.5	0.459	0.462	0.465
57.5	0.431	0.433	0.436
62.5	0.395	0.397	0.4
67.5	0.353	0.355	0.358
72.5	0.308	0.309	0.312
77.5	0.261	0.262	0.264

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.009	0.009
22.5	0.207	0.216
27.5	0.358	0.37
32.5	0.432	0.438
37.5	0.465	0.465
42.5	0.491	0.494
47.5	0.487	0.491
52.5	0.467	0.471
57.5	0.438	0.442
62.5	0.401	0.405
67.5	0.359	0.363
72.5	0.314	0.318
77.5	0.267	0.271

Table 32.

Family household headship projection, 1991-2011, NB

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.007	0.006	0.006
22.5	0.181	0.178	0.175
27.5	0.322	0.318	0.314
32.5	0.408	0.405	0.403
37.5	0.456	0.453	0.452
42.5	0.482	0.479	0.475
47.5	0.476	0.473	0.469
52.5	0.455	0.452	0.449
57.5	0.426	0.423	0.421
62.5	0.39	0.388	0.386
67.5	0.349	0.348	0.345
72.5	0.306	0.304	0.302
77.5	0.26	0.259	0.257

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.006	0.006
22.5	0.171	0.168
27.5	0.31	0.306
32.5	0.401	0.401
37.5	0.451	0.451
42.5	0.47	0.464
47.5	0.464	0.458
52.5	0.445	0.44
57.5	0.417	0.414
62.5	0.383	0.379
67.5	0.343	0.34
72.5	0.299	0.296
77.5	0.254	0.251

Table 33.

Non-family household headship projection, 1991-2011, QUE

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.015	0.016	0.017
22.5	0.082	0.085	0.088
27.5	0.122	0.126	0.13
32.5	0.118	0.122	0.126
37.5	0.097	0.101	0.105
42.5	0.09	0.094	0.098
47.5	0.098	0.102	0.106
52.5	0.116	0.121	0.125
57.5	0.143	0.148	0.153
62.5	0.176	0.182	0.188
67.5	0.214	0.222	0.229
72.5	0.256	0.264	0.273
77.5	0.299	0.309	0.319

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.019	0.021
22.5	0.093	0.097
27.5	0.136	0.141
32.5	0.131	0.136
37.5	0.108	0.112
42.5	0.101	0.105
47.5	0.11	0.115
52.5	0.13	0.136
57.5	0.159	0.166
62.5	0.195	0.204
67.5	0.237	0.246
72.5	0.282	0.292
77.5	0.329	0.34

Table 34.

Non-family household headship projection, 1991-2011, QUE

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.014	0.014	0.014
22.5	0.078	0.075	0.071
27.5	0.115	0.11	0.104
32.5	0.111	0.105	0.098
37.5	0.091	0.086	0.079
42.5	0.085	0.081	0.076
47.5	0.093	0.09	0.086
52.5	0.111	0.108	0.104
57.5	0.136	0.133	0.128
62.5	0.168	0.163	0.156
67.5	0.204	0.198	0.188
72.5	0.244	0.235	0.223
77.5	0.285	0.274	0.259

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.015	0.015
22.5	0.068	0.063
27.5	0.097	0.089
32.5	0.09	0.08
37.5	0.071	0.062
42.5	0.069	0.062
47.5	0.081	0.075
52.5	0.1	0.093
57.5	0.123	0.115
62.5	0.149	0.14
67.5	0.179	0.167
72.5	0.21	0.195
77.5	0.242	0.224

Table 35.

Family household headship projection, 1991-2011, QUE

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.01	0.01	0.01
22.5	0.176	0.181	0.187
27.5	0.317	0.324	0.332
32.5	0.413	0.417	0.421
37.5	0.462	0.463	0.464
42.5	0.473	0.475	0.477
47.5	0.467	0.47	0.473
52.5	0.448	0.452	0.455
57.5	0.418	0.422	0.426
62.5	0.378	0.383	0.388
67.5	0.332	0.337	0.342
72.5	0.281	0.286	0.292
77.5	0.228	0.233	0.24

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.01	0.01
22.5	0.195	0.204
27.5	0.343	0.354
32.5	0.426	0.431
37.5	0.464	0.464
42.5	0.48	0.483
47.5	0.477	0.482
52.5	0.46	0.466
57.5	0.431	0.439
62.5	0.394	0.402
67.5	0.35	0.359
72.5	0.301	0.312
77.5	0.25	0.262

Table 36.

Family household headship projection, 1991-2011, QUE

Low variant scenario

age x	1991 interp(vs6,a,l91,x)	1996 interp(vs7,a,l96,x)	2001 interp(vs8,a,l01,x)
17.5	0.008	0.008	0.008
22.5	0.173	0.17	0.169
27.5	0.311	0.308	0.306
32.5	0.403	0.402	0.401
37.5	0.453	0.453	0.452
42.5	0.47	0.469	0.468
47.5	0.465	0.465	0.465
52.5	0.446	0.447	0.448
57.5	0.415	0.417	0.418
62.5	0.375	0.377	0.378
67.5	0.329	0.33	0.331
72.5	0.278	0.279	0.279
77.5	0.225	0.225	0.225

age x	2006 interp(vs9,a,l06,x)	2011 interp(vs10,a,l11,x)
17.5	0.008	0.008
22.5	0.167	0.166
27.5	0.304	0.303
32.5	0.4	0.4
37.5	0.452	0.452
42.5	0.466	0.464
47.5	0.464	0.464
52.5	0.448	0.45
57.5	0.419	0.422
62.5	0.379	0.382
67.5	0.332	0.334
72.5	0.279	0.28
77.5	0.224	0.223

Table 37.

Non-family household headship projection, 1991-2011, ONT

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.01	0.013	0.016
22.5	0.085	0.089	0.094
27.5	0.125	0.13	0.136
32.5	0.111	0.116	0.122
37.5	0.081	0.085	0.09
42.5	0.073	0.076	0.08
47.5	0.072	0.075	0.078
52.5	0.087	0.091	0.094
57.5	0.12	0.125	0.128
62.5	0.168	0.173	0.177
67.5	0.226	0.232	0.238
72.5	0.291	0.298	0.306
77.5	0.359	0.368	0.378

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.019	0.023
22.5	0.1	0.106
27.5	0.144	0.151
32.5	0.128	0.134
37.5	0.094	0.099
42.5	0.083	0.087
47.5	0.081	0.084
52.5	0.097	0.1
57.5	0.133	0.136
62.5	0.183	0.188
67.5	0.245	0.252
72.5	0.315	0.325
77.5	0.389	0.401

Table 38.

Non-family household headship projection, 1991-2011, ONT

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.01	0.011	0.013
22.5	0.082	0.081	0.081
27.5	0.12	0.118	0.116
32.5	0.105	0.103	0.099
37.5	0.076	0.073	0.068
42.5	0.069	0.066	0.061
47.5	0.07	0.068	0.066
52.5	0.087	0.085	0.086
57.5	0.12	0.119	0.12
62.5	0.166	0.164	0.165
67.5	0.222	0.22	0.219
72.5	0.285	0.282	0.279
77.5	0.351	0.347	0.342

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.015	0.017
22.5	0.081	0.081
27.5	0.114	0.112
32.5	0.095	0.091
37.5	0.063	0.057
42.5	0.056	0.051
47.5	0.064	0.061
52.5	0.086	0.084
57.5	0.121	0.119
62.5	0.165	0.164
67.5	0.218	0.215
72.5	0.276	0.271
77.5	0.336	0.33

Table 39.

Family household headship projection, 1991-2011, ONT

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.012	0.013	0.013
22.5	0.166	0.173	0.182
27.5	0.302	0.311	0.323
32.5	0.405	0.41	0.416
37.5	0.463	0.464	0.464
42.5	0.477	0.479	0.482
47.5	0.481	0.484	0.487
52.5	0.469	0.473	0.475
57.5	0.441	0.444	0.446
62.5	0.399	0.402	0.403
67.5	0.347	0.35	0.351
72.5	0.289	0.291	0.292
77.5	0.227	0.228	0.229

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.013	0.013
22.5	0.192	0.204
27.5	0.337	0.352
32.5	0.423	0.43
37.5	0.465	0.465
42.5	0.485	0.489
47.5	0.491	0.496
52.5	0.479	0.483
57.5	0.449	0.453
62.5	0.406	0.41
67.5	0.353	0.356
72.5	0.293	0.296
77.5	0.23	0.232

Table 40.

Family household headship projection, 1991-2011, ONT

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.011	0.012	0.012
22.5	0.162	0.162	0.161
27.5	0.295	0.294	0.293
32.5	0.393	0.392	0.392
37.5	0.452	0.452	0.452
42.5	0.475	0.475	0.474
47.5	0.479	0.479	0.479
52.5	0.466	0.465	0.466
57.5	0.436	0.436	0.437
62.5	0.394	0.394	0.395
67.5	0.343	0.343	0.343
72.5	0.286	0.285	0.284
77.5	0.225	0.224	0.222

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.012	0.012
22.5	0.162	0.162
27.5	0.294	0.295
32.5	0.393	0.394
37.5	0.452	0.453
42.5	0.474	0.473
47.5	0.478	0.478
52.5	0.465	0.466
57.5	0.435	0.436
62.5	0.392	0.393
67.5	0.34	0.34
72.5	0.282	0.28
77.5	0.22	0.217

Table 41.

Non-family household headship projection, 1991-2011, MAN

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.018	0.02	0.022
22.5	0.111	0.126	0.139
27.5	0.157	0.177	0.194
32.5	0.128	0.141	0.152
37.5	0.081	0.085	0.089
42.5	0.072	0.074	0.077
47.5	0.075	0.078	0.081
52.5	0.095	0.099	0.103
57.5	0.134	0.139	0.144
62.5	0.187	0.194	0.2
67.5	0.251	0.259	0.267
72.5	0.322	0.332	0.341
77.5	0.397	0.408	0.42

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.026	0.029
22.5	0.15	0.158
27.5	0.207	0.218
32.5	0.161	0.169
37.5	0.093	0.097
42.5	0.08	0.083
47.5	0.083	0.086
52.5	0.105	0.108
57.5	0.146	0.151
62.5	0.204	0.21
67.5	0.274	0.282
72.5	0.351	0.362
77.5	0.433	0.446

Table 42.

Non-family household headship projection, 1991-2011, MAN

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.017	0.018	0.018
22.5	0.091	0.089	0.086
27.5	0.129	0.125	0.119
32.5	0.11	0.105	0.099
37.5	0.075	0.071	0.065
42.5	0.067	0.064	0.059
47.5	0.073	0.072	0.07
52.5	0.095	0.095	0.095
57.5	0.134	0.134	0.133
62.5	0.185	0.183	0.181
67.5	0.246	0.242	0.237
72.5	0.313	0.307	0.298
77.5	0.384	0.374	0.362

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.02	0.021
22.5	0.083	0.079
27.5	0.113	0.106
32.5	0.091	0.084
37.5	0.058	0.051
42.5	0.054	0.048
47.5	0.068	0.065
52.5	0.095	0.093
57.5	0.132	0.131
62.5	0.179	0.175
67.5	0.232	0.225
72.5	0.289	0.279
77.5	0.349	0.334

Table 43.

Family household headship projection, 1991-2011, MAN

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.013	0.013	0.014
22.5	0.183	0.187	0.194
27.5	0.323	0.329	0.338
32.5	0.412	0.416	0.421
37.5	0.457	0.459	0.461
42.5	0.474	0.476	0.479
47.5	0.473	0.476	0.479
52.5	0.458	0.461	0.464
57.5	0.43	0.434	0.437
62.5	0.393	0.397	0.4
67.5	0.348	0.352	0.355
72.5	0.299	0.302	0.306
77.5	0.247	0.25	0.254

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.014	0.014
22.5	0.202	0.21
27.5	0.349	0.361
32.5	0.429	0.437
37.5	0.464	0.467
42.5	0.482	0.486
47.5	0.483	0.488
52.5	0.469	0.474
57.5	0.442	0.448
62.5	0.405	0.411
67.5	0.36	0.366
72.5	0.311	0.317
77.5	0.259	0.265

Table 44.

Family household headship projection, 1991-2011, MAN

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.011	0.011	0.011
22.5	0.178	0.176	0.174
27.5	0.316	0.314	0.311
32.5	0.405	0.404	0.402
37.5	0.453	0.452	0.452
42.5	0.472	0.471	0.471
47.5	0.47	0.468	0.466
52.5	0.453	0.451	0.447
57.5	0.425	0.422	0.418
62.5	0.388	0.385	0.381
67.5	0.343	0.341	0.338
72.5	0.294	0.293	0.29
77.5	0.243	0.242	0.241

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.011	0.011
22.5	0.174	0.173
27.5	0.31	0.308
32.5	0.4	0.397
37.5	0.45	0.447
42.5	0.47	0.469
47.5	0.463	0.46
52.5	0.442	0.437
57.5	0.412	0.406
62.5	0.375	0.369
67.5	0.333	0.328
72.5	0.287	0.283
77.5	0.239	0.237

Table 45.

Non-family household headship projection, 1991-2011, SAS

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.021	0.023	0.026
22.5	0.095	0.099	0.104
27.5	0.131	0.136	0.142
32.5	0.108	0.112	0.118
37.5	0.07	0.073	0.077
42.5	0.061	0.064	0.066
47.5	0.071	0.073	0.076
52.5	0.097	0.097	0.101
57.5	0.137	0.136	0.138
62.5	0.189	0.186	0.185
67.5	0.249	0.244	0.24
72.5	0.315	0.307	0.3
77.5	0.384	0.374	0.362

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.03	0.034
22.5	0.109	0.116
27.5	0.148	0.155
32.5	0.123	0.128
37.5	0.08	0.084
42.5	0.069	0.072
47.5	0.079	0.082
52.5	0.103	0.105
57.5	0.138	0.138
62.5	0.183	0.18
67.5	0.234	0.228
72.5	0.291	0.28
77.5	0.349	0.334

Table 46.

Non-family household headship projection, 1991-2011, SAS

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.02	0.02	0.021
22.5	0.089	0.085	0.08
27.5	0.123	0.116	0.108
32.5	0.1	0.094	0.086
37.5	0.064	0.06	0.055
42.5	0.057	0.056	0.053
47.5	0.068	0.067	0.064
52.5	0.094	0.092	0.088
57.5	0.133	0.13	0.125
62.5	0.182	0.179	0.173
67.5	0.24	0.235	0.228
72.5	0.303	0.297	0.288
77.5	0.368	0.361	0.351

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.022	0.024
22.5	0.075	0.069
27.5	0.098	0.088
32.5	0.076	0.066
37.5	0.048	0.04
42.5	0.049	0.045
47.5	0.062	0.059
52.5	0.087	0.083
57.5	0.123	0.119
62.5	0.169	0.163
67.5	0.222	0.214
72.5	0.279	0.269
77.5	0.339	0.327

Table 47.

Family household headship projection, 1991-2011, SAS

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.014	0.014	0.015
22.5	0.2	0.203	0.207
27.5	0.348	0.352	0.358
32.5	0.432	0.435	0.439
37.5	0.468	0.469	0.471
42.5	0.477	0.479	0.481
47.5	0.469	0.471	0.474
52.5	0.45	0.452	0.456
57.5	0.424	0.425	0.43
62.5	0.39	0.392	0.397
67.5	0.352	0.354	0.359
72.5	0.311	0.314	0.318
77.5	0.268	0.271	0.275

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.015	0.015
22.5	0.211	0.216
27.5	0.364	0.372
32.5	0.443	0.45
37.5	0.473	0.477
42.5	0.483	0.486
47.5	0.478	0.482
52.5	0.462	0.467
57.5	0.436	0.442
62.5	0.403	0.409
67.5	0.365	0.371
72.5	0.324	0.33
77.5	0.28	0.286

Table 48.

Family household headship projection, 1991-2011, SAS

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.012	0.012	0.012
22.5	0.195	0.192	0.189
27.5	0.342	0.338	0.333
32.5	0.428	0.425	0.42
37.5	0.465	0.463	0.46
42.5	0.474	0.472	0.47
47.5	0.466	0.465	0.463
52.5	0.447	0.447	0.445
57.5	0.421	0.421	0.418
62.5	0.387	0.387	0.385
67.5	0.349	0.349	0.346
72.5	0.308	0.307	0.304
77.5	0.265	0.263	0.26

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.012	0.012
22.5	0.186	0.183
27.5	0.329	0.324
32.5	0.416	0.412
37.5	0.457	0.454
42.5	0.468	0.465
47.5	0.461	0.458
52.5	0.443	0.44
57.5	0.416	0.413
62.5	0.382	0.379
67.5	0.343	0.34
72.5	0.301	0.297
77.5	0.257	0.253

Table 49.

Non-family household headship projection, 1991-2011, ALB

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.026	0.028	0.031
22.5	0.113	0.118	0.123
27.5	0.156	0.162	0.169
32.5	0.131	0.136	0.142
37.5	0.087	0.091	0.096
42.5	0.076	0.08	0.083
47.5	0.081	0.084	0.087
52.5	0.1	0.103	0.107
57.5	0.133	0.136	0.141
62.5	0.177	0.182	0.188
67.5	0.229	0.236	0.244
72.5	0.287	0.295	0.305
77.5	0.347	0.358	0.37

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.035	0.04
22.5	0.13	0.137
27.5	0.178	0.186
32.5	0.151	0.158
37.5	0.102	0.107
42.5	0.086	0.09
47.5	0.09	0.093
52.5	0.111	0.114
57.5	0.147	0.151
62.5	0.195	0.201
67.5	0.253	0.26
72.5	0.316	0.327
77.5	0.383	0.396

Table 50.

Non-family household headship projection, 1991-2011, ALB

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.024	0.025	0.026
22.5	0.107	0.103	0.099
27.5	0.148	0.141	0.134
32.5	0.123	0.116	0.109
37.5	0.081	0.076	0.07
42.5	0.071	0.068	0.063
47.5	0.078	0.075	0.071
52.5	0.098	0.095	0.091
57.5	0.131	0.127	0.123
62.5	0.173	0.169	0.165
67.5	0.223	0.218	0.213
72.5	0.278	0.272	0.266
77.5	0.335	0.329	0.321

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.028	0.03
22.5	0.094	0.09
27.5	0.125	0.116
32.5	0.1	0.09
37.5	0.063	0.055
42.5	0.057	0.051
47.5	0.067	0.062
52.5	0.089	0.084
57.5	0.12	0.115
62.5	0.161	0.154
67.5	0.207	0.199
72.5	0.257	0.248
77.5	0.31	0.299

Table 51.

Family household headship projection, 1991-2011, ALB

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.018	0.018	0.018
22.5	0.188	0.192	0.198
27.5	0.328	0.334	0.342
32.5	0.417	0.421	0.426
37.5	0.464	0.465	0.467
42.5	0.483	0.485	0.488
47.5	0.481	0.484	0.488
52.5	0.464	0.467	0.472
57.5	0.434	0.438	0.442
62.5	0.396	0.399	0.403
67.5	0.349	0.352	0.355
72.5	0.298	0.3	0.303
77.5	0.245	0.246	0.248

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.018	0.018
22.5	0.203	0.21
27.5	0.35	0.36
32.5	0.432	0.438
37.5	0.47	0.473
42.5	0.491	0.495
47.5	0.493	0.499
52.5	0.478	0.485
57.5	0.449	0.457
62.5	0.41	0.417
67.5	0.362	0.369
72.5	0.308	0.314
77.5	0.252	0.257

Table 52.

Family household headship projection, 1991-2011, ALB

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.014	0.014	0.014
22.5	0.181	0.177	0.174
27.5	0.321	0.316	0.311
32.5	0.414	0.41	0.407
37.5	0.464	0.462	0.461
42.5	0.481	0.48	0.479
47.5	0.479	0.479	0.479
52.5	0.462	0.463	0.464
57.5	0.433	0.434	0.435
62.5	0.395	0.395	0.396
67.5	0.349	0.349	0.349
72.5	0.298	0.297	0.296
77.5	0.244	0.243	0.241

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.014	0.014
22.5	0.17	0.166
27.5	0.306	0.3
32.5	0.404	0.401
37.5	0.46	0.46
42.5	0.478	0.477
47.5	0.478	0.478
52.5	0.463	0.464
57.5	0.434	0.436
62.5	0.395	0.396
67.5	0.347	0.348
72.5	0.295	0.294
77.5	0.239	0.237

Table 53.

Non-family household headship projection, 1991-2011, BC

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.019	0.021	0.024
22.5	0.112	0.115	0.12
27.5	0.162	0.166	0.172
32.5	0.145	0.149	0.156
37.5	0.108	0.112	0.117
42.5	0.098	0.102	0.105
47.5	0.102	0.106	0.11
52.5	0.12	0.124	0.13
57.5	0.152	0.156	0.163
62.5	0.194	0.2	0.207
67.5	0.245	0.251	0.259
72.5	0.301	0.308	0.317
77.5	0.36	0.368	0.377

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.027	0.031
22.5	0.125	0.13
27.5	0.178	0.184
32.5	0.161	0.167
37.5	0.121	0.126
42.5	0.109	0.112
47.5	0.114	0.118
52.5	0.134	0.14
57.5	0.168	0.175
62.5	0.213	0.221
67.5	0.266	0.275
72.5	0.325	0.335
77.5	0.387	0.397

Table 54.

Non-family household headship projection, 1991-2011, BC

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.018	0.019	0.02
22.5	0.107	0.104	0.102
27.5	0.155	0.15	0.144
32.5	0.138	0.133	0.125
37.5	0.101	0.096	0.088
42.5	0.092	0.086	0.079
47.5	0.097	0.093	0.088
52.5	0.116	0.114	0.11
57.5	0.148	0.147	0.144
62.5	0.19	0.189	0.188
67.5	0.24	0.24	0.238
72.5	0.296	0.295	0.293
77.5	0.354	0.352	0.35

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.021	0.023
22.5	0.098	0.095
27.5	0.137	0.13
32.5	0.116	0.107
37.5	0.079	0.069
42.5	0.07	0.06
47.5	0.082	0.075
52.5	0.107	0.103
57.5	0.143	0.14
62.5	0.187	0.185
67.5	0.237	0.235
72.5	0.291	0.289
77.5	0.348	0.345

Table 55.

Family household headship projection, 1991-2011, BC

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.013	0.014	0.014
22.5	0.167	0.172	0.179
27.5	0.299	0.306	0.316
32.5	0.392	0.397	0.405
37.5	0.447	0.451	0.456
42.5	0.471	0.476	0.481
47.5	0.47	0.475	0.481
52.5	0.454	0.458	0.464
57.5	0.426	0.429	0.435
62.5	0.389	0.392	0.396
67.5	0.346	0.347	0.35
72.5	0.297	0.298	0.299
77.5	0.247	0.246	0.245

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.014	0.014
22.5	0.188	0.196
27.5	0.329	0.342
32.5	0.415	0.427
37.5	0.462	0.469
42.5	0.487	0.493
47.5	0.488	0.497
52.5	0.471	0.482
57.5	0.442	0.452
62.5	0.401	0.41
67.5	0.353	0.358
72.5	0.299	0.301
77.5	0.243	0.24

Table 64.

Family household headship projection, 1991-2011, NWT

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.01	0.01	0.01
22.5	0.162	0.16	0.159
27.5	0.297	0.294	0.292
32.5	0.4	0.398	0.395
37.5	0.457	0.456	0.454
42.5	0.464	0.464	0.464
47.5	0.455	0.456	0.458
52.5	0.44	0.442	0.445
57.5	0.422	0.423	0.426
62.5	0.399	0.4	0.402
67.5	0.374	0.373	0.374
72.5	0.347	0.345	0.343
77.5	0.319	0.316	0.312

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.01	0.01
22.5	0.158	0.157
27.5	0.291	0.289
32.5	0.393	0.391
37.5	0.452	0.45
42.5	0.464	0.464
47.5	0.461	0.466
52.5	0.45	0.458
57.5	0.43	0.439
62.5	0.405	0.412
67.5	0.375	0.378
72.5	0.342	0.341
77.5	0.307	0.301

Table 56.

Family household headship projection, 1991-2011, BC

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.011	0.011	0.011
22.5	0.161	0.159	0.158
27.5	0.292	0.289	0.288
32.5	0.388	0.387	0.387
37.5	0.445	0.446	0.447
42.5	0.467	0.467	0.467
47.5	0.467	0.467	0.468
52.5	0.452	0.452	0.454
57.5	0.425	0.425	0.427
62.5	0.389	0.389	0.39
67.5	0.345	0.344	0.345
72.5	0.297	0.295	0.294
77.5	0.246	0.244	0.241

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.011	0.011
22.5	0.157	0.156
27.5	0.287	0.286
32.5	0.387	0.388
37.5	0.448	0.449
42.5	0.468	0.468
47.5	0.469	0.47
52.5	0.455	0.457
57.5	0.427	0.429
62.5	0.389	0.39
67.5	0.343	0.341
72.5	0.291	0.288
77.5	0.237	0.231

Table 57.

Non-family household headship projection, 1991-2011, YUK

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.017	0.02	0.024
22.5	0.092	0.096	0.101
27.5	0.135	0.14	0.146
32.5	0.129	0.134	0.139
37.5	0.109	0.113	0.116
42.5	0.112	0.115	0.118
47.5	0.135	0.14	0.144
52.5	0.168	0.176	0.181
57.5	0.209	0.218	0.225
62.5	0.255	0.266	0.274
67.5	0.306	0.318	0.328
72.5	0.359	0.372	0.384
77.5	0.414	0.428	0.442

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.029	0.035
22.5	0.108	0.116
27.5	0.153	0.161
32.5	0.143	0.149
37.5	0.119	0.122
42.5	0.122	0.125
47.5	0.146	0.149
52.5	0.182	0.185
57.5	0.226	0.231
62.5	0.277	0.284
67.5	0.333	0.342
72.5	0.393	0.405
77.5	0.455	0.469

Table 58.

Non-family household headship projection, 1991-2011, YUK

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.015	0.016	0.018
22.5	0.089	0.088	0.089
27.5	0.131	0.129	0.127
32.5	0.124	0.12	0.115
37.5	0.103	0.099	0.093
42.5	0.107	0.104	0.1
47.5	0.128	0.123	0.114
52.5	0.159	0.152	0.137
57.5	0.197	0.188	0.172
62.5	0.242	0.232	0.214
67.5	0.291	0.28	0.263
72.5	0.343	0.332	0.316
77.5	0.397	0.386	0.371

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.021	0.024
22.5	0.09	0.091
27.5	0.125	0.123
32.5	0.108	0.101
37.5	0.085	0.076
42.5	0.095	0.089
47.5	0.104	0.092
52.5	0.122	0.104
57.5	0.153	0.131
62.5	0.193	0.17
67.5	0.242	0.218
72.5	0.295	0.273
77.5	0.351	0.33

Table 59.

Family household headship projection, 1991-2011, YUK

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.018	0.016	0.015
22.5	0.174	0.175	0.177
27.5	0.304	0.307	0.311
32.5	0.389	0.392	0.397
37.5	0.443	0.447	0.452
42.5	0.475	0.48	0.486
47.5	0.456	0.46	0.465
52.5	0.422	0.425	0.429
57.5	0.385	0.388	0.391
62.5	0.346	0.349	0.353
67.5	0.306	0.309	0.313
72.5	0.264	0.268	0.273
77.5	0.222	0.226	0.232

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.015	0.015
22.5	0.181	0.185
27.5	0.317	0.324
32.5	0.403	0.411
37.5	0.458	0.466
42.5	0.492	0.499
47.5	0.47	0.476
52.5	0.433	0.439
57.5	0.396	0.401
62.5	0.357	0.364
67.5	0.319	0.326
72.5	0.279	0.288
77.5	0.24	0.25

Table 60.

Family household headship projection, 1991-2011, YUK

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.013	0.013	0.013
22.5	0.168	0.164	0.159
27.5	0.298	0.293	0.287
32.5	0.387	0.385	0.382
37.5	0.442	0.443	0.443
42.5	0.47	0.469	0.468
47.5	0.453	0.453	0.452
52.5	0.422	0.423	0.422
57.5	0.386	0.388	0.387
62.5	0.347	0.349	0.347
67.5	0.306	0.306	0.305
72.5	0.263	0.262	0.26
77.5	0.219	0.217	0.214

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.012	0.012
22.5	0.155	0.151
27.5	0.282	0.277
32.5	0.38	0.378
37.5	0.443	0.443
42.5	0.466	0.464
47.5	0.451	0.449
52.5	0.422	0.421
57.5	0.388	0.386
62.5	0.348	0.346
67.5	0.304	0.302
72.5	0.258	0.255
77.5	0.211	0.207

Table 61.

Non-family household headship projection, 1991-2011, NWT

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.01	0.012	0.015
22.5	0.077	0.08	0.084
27.5	0.115	0.118	0.122
32.5	0.108	0.11	0.112
37.5	0.086	0.088	0.089
42.5	0.08	0.083	0.085
47.5	0.082	0.085	0.086
52.5	0.09	0.094	0.095
57.5	0.104	0.11	0.112
62.5	0.123	0.131	0.137
67.5	0.145	0.156	0.166
72.5	0.17	0.184	0.199
77.5	0.196	0.214	0.234

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.019	0.023
22.5	0.088	0.093
27.5	0.126	0.131
32.5	0.115	0.118
37.5	0.091	0.093
42.5	0.088	0.09
47.5	0.086	0.086
52.5	0.093	0.093
57.5	0.112	0.113
62.5	0.14	0.144
67.5	0.174	0.184
72.5	0.213	0.228
77.5	0.255	0.276

Table 62.

Non-family household headship projection, 1991-2011, NWT

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.009	0.01	0.011
22.5	0.075	0.077	0.078
27.5	0.112	0.112	0.111
32.5	0.102	0.098	0.092
37.5	0.08	0.074	0.067
42.5	0.077	0.075	0.071
47.5	0.078	0.073	0.066
52.5	0.084	0.076	0.066
57.5	0.096	0.087	0.076
62.5	0.113	0.104	0.093
67.5	0.134	0.127	0.117
72.5	0.157	0.153	0.145
77.5	0.181	0.18	0.175

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.013	0.015
22.5	0.08	0.082
27.5	0.111	0.11
32.5	0.086	0.079
37.5	0.058	0.049
42.5	0.067	0.063
47.5	0.057	0.047
52.5	0.051	0.035
57.5	0.059	0.04
62.5	0.077	0.059
67.5	0.103	0.087
72.5	0.134	0.122
77.5	0.168	0.16

Table 63.

Family household headship projection, 1991-2011, NWT

High variant scenario

age x	1991 interp(vs1,a,h91,x)	1996 interp(vs2,a,h96,x)	2001 interp(vs3,a,h01,x)
17.5	0.011	0.012	0.012
22.5	0.166	0.169	0.174
27.5	0.302	0.306	0.313
32.5	0.403	0.406	0.41
37.5	0.459	0.461	0.463
42.5	0.468	0.472	0.477
47.5	0.457	0.461	0.466
52.5	0.44	0.444	0.447
57.5	0.42	0.423	0.426
62.5	0.398	0.399	0.401
67.5	0.373	0.374	0.374
72.5	0.347	0.347	0.347
77.5	0.321	0.32	0.318

age x	2006 interp(vs4,a,h06,x)	2011 interp(vs5,a,h11,x)
17.5	0.012	0.012
22.5	0.179	0.186
27.5	0.32	0.329
32.5	0.414	0.419
37.5	0.465	0.468
42.5	0.483	0.489
47.5	0.473	0.482
52.5	0.454	0.464
57.5	0.431	0.44
62.5	0.404	0.412
67.5	0.376	0.381
72.5	0.346	0.347
77.5	0.315	0.312

Table 64.

Family household headship projection, 1991-2011, NWT

Low variant scenario

age x	1991 interp(vs6,a,191,x)	1996 interp(vs7,a,196,x)	2001 interp(vs8,a,101,x)
17.5	0.01	0.01	0.01
22.5	0.162	0.16	0.159
27.5	0.297	0.294	0.292
32.5	0.4	0.398	0.395
37.5	0.457	0.456	0.454
42.5	0.464	0.464	0.464
47.5	0.455	0.456	0.458
52.5	0.44	0.442	0.445
57.5	0.422	0.423	0.426
62.5	0.399	0.4	0.402
67.5	0.374	0.373	0.374
72.5	0.347	0.345	0.343
77.5	0.319	0.316	0.312

age x	2006 interp(vs9,a,106,x)	2011 interp(vs10,a,111,x)
17.5	0.01	0.01
22.5	0.158	0.157
27.5	0.291	0.289
32.5	0.393	0.391
37.5	0.452	0.45
42.5	0.464	0.464
47.5	0.461	0.466
52.5	0.45	0.458
57.5	0.43	0.439
62.5	0.405	0.412
67.5	0.375	0.378
72.5	0.342	0.341
77.5	0.307	0.301