Immiserizing of the Baby Boom and Changes in Living Arrangement: Recent Evidence for Canada

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In the past decade, the popular press in Canada and the United States has given much attention to the idea that the baby boom generation has been immiserized compared to the generation that came before and (more speculatively) that which will follow. Several questions naturally come to mind.

First, is there indeed empirical evidence that the baby boomer have suffered poorer income prospects than their predecessors? The paper will show that there is evidence of immiseration, but it is relative, and not equally applicable to all baby boomers.

Second, are these poorer prospects a short-term phenomenon, or will they persist? In part, this is still a speculative question. Older baby boomers are now only in their mid 40s, the trailing edge is around age 30; it will still be a while before the life-time income prospects of the baby boom have been fully realized. However, more data are available today than was the case a decade ago when empirical work on this question was begun.

Third, and perhaps most important to housing policy makers and analysts, what are the policy implications in terms of living arrangements and housing demand? To answer the latter two questions, we need an explanation for the phenomenon evidenced by the first. To wit, what caused the immiseration?

Running through the scholarly work in labour economics that began with Welch (1979), Easterlin (1980), and Freeman (1979) is a hypothesis about the effect of cohort size that can be stated, simplistically for the moment, as follows. The postwar baby boom swelled the number of people in particular birth cohorts. As the boom cohorts aged and moved into the labour force, the "surplus" of young labour (compared with earlier generations) depressed wage rates and heightened unemployment among young workers. Further, it affected the choices and opportunities of young adults with regard to formal schooling and on-the-job training. As the cohorts aged further, their very size will make for fierce competition for managerial positions; dashing the career...
expectations of people who, in another
generation among smaller numbers,
could have expected to do better.\(^1\) To
this, one could add related, pessimistic
conjectures about the future of public
pension schemes when the boom cohort
reaches retirement age and, by sheer
number, ratchets up demands on the
public purse.\(^2\)

If this hypothesis is correct, there could
be substantial implications for
household formation and housing
demand. Since housing expenditure
makes up about one-quarter of personal
consumer expenditure in Canada, baby
boomers and their families might well
cope with a lower real wage by reducing
their consumption of housing.
Household formation, the demand for
floorspace, lot size, location, quality of
construction, and other housing
attributes, and tenure choice may all be
affected. In addition, households might
cope with a lower wage rate by
increasing their labour force
participation or hours of work, with
consequent implications for domestic
production and use of the home. The
purpose of this paper is to describe
empirically how the income prospects of
the baby boom cohort in Canada have
changed and to examine the shift in
living arrangements of adults that
accompanied this.

THE BABY BOOM AND IMMISSERATION;
EXISTENT EVIDENCE

There have been few published studies
of changes in the profile of earnings or
income by age in Canada. Of these, only
Dooley (1986), considers directly the
effects of the entry of the baby boom into
the labour force on such a profile.

Dooley estimates and analyzes period
profiles of annual earnings for selected
men; earnings here include wages,
salaries, and net income from self-
employment.\(^3\) The data are taken from
the Survey of Consumer Finances public-
use (census family) samples. The sample
consists of males heading census families
(of two persons or more) and nonfamily
men. Dooley’s sample is restricted to
full-time full-year workers, aged 20-64,
and excludes men who were out of the
labour force at any time during the year
because of schooling, retirement, or
permanent disability. Persons whose
principal source of income was self-
employment were excluded as were
unpaid family workers.

Dooley pools unlinked data from cross-
section samples available biennially from

\(^1\)See Foot and Venne (1990) and Wolf (1983).

\(^2\)Hinting at the susceptibility of the U.S. Social
Security Act to political change, Doescher and
Turner (1988, p. 78) points out that major
changes have been enacted to the legislation
seven times between 1956 and 1983. They (p. 76-
77) also points out that under the current regime,
Social Security before-tax benefits for retirees for
a person born in 1955 are expected to be about 60
percent higher for men (72 percent higher for
women) in real terms than for retirees in 1986.
This is partly offset by a legislated increase in the
minimum age, from 65 to 67 years, for social
security benefits starting in the year 2000.

\(^3\)Dooley also examined weekly earnings.
1971 to 1981 to estimate period profiles of earnings by age. From these data, Dooley concludes:

- Most age-schooling groups experienced gains in average real income during the first half of the 1970s. In contrast, average real income dropped markedly for almost all of these groups in the last half of the 1970s. 4

- Over the decade, adults with primary or secondary schooling only had larger increases in average real income than did adults with post-secondary schooling.

- No systematic change in the slope of the period profile of earnings by age. See Chart 1. 5

- From regression analysis, cohort size was found to have a negative impact on earnings, but that the effect diminishes with age. 7

4Dooley did not consider or discuss the effect of national wage and price controls that operated in Canada from late 1975 though 1978.

5Since Dooley’s data cover only years since the baby boom began to flood the labour market, the age profile of earnings may have changed earlier than this.

6The dependent variable was the logarithm of ratio of age group mean income, 1979-81 to 1971-73; the independent variables were the group mean age, change in the size of the cohort, an interaction between age and cohort size, and change in the proportion of the cohort that worked part time. A separate model is estimated for each of four levels of education.

7Dooley’s analysis is limited by a change in survey methodology that took place in 1975 with respect to how post-secondary training was coded. As a result, Dooley’s regression analysis is restricted to changes that occurred overall between 1971-73 and 1979-81.

- Again from regression analysis, changes in cohort size did not explain the compression in earnings differences across levels of schooling.

In a related study, Robb and Burbidge (1989) analyzes period profiles of after-tax spending unit income 8 by age, but this time for selected categories of husband-wife couples, and without considering the effect of cohort size. They use unlinked cross-section data for 1978, 1982, and 1984 from the Family Expenditure Survey public-use samples. They restrict themselves to married couples who head spending units, to cases where the husband is between 25 and 75 years old, and omit non-urban spending units, spending units in which there was a compositional change during the preceding year, and spending units whose primary source of income is self-employment, farming, fishing, forestry, or logging.

Robb and Burbidge (1989) find little evidence of change in the period profile of real after-tax spending unit income by age between 1978 and 1984. See Chart 2. The slope of their profile for young adults is modest by comparison to Chart 1. While the effect of progressive taxation is important here, the discrepancy in slope between Chart 2 and Chart 1 suggests also that the profile of income by age for wives is flat.

8Total spending unit income net of personal and payroll taxes, and contributions to private pension plans.
In Table 1 are presented comparisons of the two Canadian studies with five similar U.S. studies. Unfortunately, none of these studies present basic earnings data in the form of Chart 1 or Chart 2. Instead, they report only on regression analyses wherein the effects of cohort size are measured by slope coefficients.

- Welch (1979, p. 591) finds that, among white males, the earnings of young workers fell 10 to 15 percent relative to those of prime-aged workers between 1967 and 1975; the drop is more marked in categories of workers with higher levels of schooling. Welch (1979) predicts that the negative effect of cohort size will decrease over the career but not vanish altogether.

- Freeman (1979) finds similar results for all male workers. In contrast, however, he finds that the relative earnings of young women did not fall correspondingly.

- Stapleton and Young (1984) also finds a widening gap for young workers with higher levels of schooling. However, they find that the hourly wage of high school graduates actually rose relative to that of a prime aged worker between 1967 and 1977.

- Using data almost identical to that employed by Welch, Berger (1985) finds that increased cohort size did slow down earnings growth over the careers of white males: in contrast to Welch's conclusion of a dampened effect.

- Berger (1989) finds that larger cohorts have flatter earnings profiles, whereas cohorts close in age to large cohorts have steeper weekly earnings profiles. The net effect is that, for those who enter the labour market before or after the peak of the demographic cycle, earnings start out lower but grow faster. This pattern is found to be common to all levels of schooling.

A CRITIQUE OF EXISTENT EVIDENCE

Neither Canadian study is satisfactory. In both cases, living arrangement is important in determining who is included in the samples; to the extent that living arrangement is a response to income prospects, part of the effect of immiseration is hidden. Neither covers a broad range of Canadians. Dooley ignores women; he also ignores men not working full-time and full-year. Robb and Burbidge ignore men and women other than those in couples who head a spending unit. Robb and Burbidge do include persons not working full-time, but the effect of labour force participation on their income profiles cannot be deciphered. Foot and Li (1986), in contrast, does present age profiles of unemployment, but does not look at earnings at all. Finally, neither study estimates profiles of income by age for individual birth cohorts; Chart 1 and Chart 2 combine data for a large number of cohorts making it difficult to see how the profile may have changed for any one cohort.

In several respects, the U.S. studies are similar to the Canadian studies. For example, all are based on cross-section data. Many of these studies also exclude categories of individuals: e.g., women, nonwhites, the part-time employed, the self-employed, or sundry other labour
force statuses (retirees, students, and persons unemployed or not otherwise in labour force). For the most part, these studies also examine annual or weekly earnings; continuing to confound changes in wage rate and hours of work. These studies also ignore unemployment. And, finally, with the exception of Berger (1989), none of these studies examine income or earnings past the 1970s.

The U.S. studies differ from Canadian work in one major respect. The U.S. studies use the incomes of individuals, rather than just the incomes of spending units, families, or family heads. These studies look at the income prospects of everyone, and are not filtered by the living arrangements that people may have chosen in response to those income prospects. Such a perspective is essential in a study of the effect of income on living arrangement.

Some of the U.S. studies also differ from Canadian work in that they emphasize substitution by employers among labour market segments. Although interesting findings are reported in this work, such studies take a narrow view of the factors affecting the employer. In general, these studies view the hiring problem simply as substitution to minimize the unit cost of production; typically assuming a time-invariant production function. Hence, these studies ignore the effects of changes in technology, regional competitiveness, and the demand for various goods and services (including the demands of the baby boomers themselves). As well, these studies largely ignore factor prices other than wages. Further, these studies do not even have wage rate data, and must settle for either annual or weekly earnings; mixing hours of work and overtime with the hourly wage rate.

Of special note in this regard is the sharp rise in labour force participation among women with young children that occurred in the 1970s and 1980s: combined with pay equity and other

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9Welch (1979, p. S74) argues that asymmetry in substitution, and the effect of experience in lowering/raising substitutability are also important here. In one job, the employer may well be able to replace an inexperienced youth with an older worker, but in another job find that the experienced worker is not easily replaced by a youth. However, I am not aware of any attempts to look at this issue empirically.

10Welch (1979, p. S77) uses a CES function. Freeman (1979) uses both CES and translog production functions. In related work, Grant and Hamermesh (1981) use a translog function with four categories of labour (youth, adult blacks, white women, and white men), Berger (1983) uses a translog function with four categories of male labour (two levels of education by two levels of experience), one category of female labour, and regional dummies. Rather than a translog approach, Levine and Mitchell (1988) estimate an output share equation with eight age-sex categories (2 sexes by teen, young, mature, and older age groups). In contrast, Stapleton and Young (1984) use a multiple skill model approach that makes the designation of categories endogenous to the model.

11Grant and Hamermesh (1981) include capital as a factor of production.
anti-discrimination legislation. This greatly increased supply of female labour may well have depressed wages in labour market segments that are close substitutes. Berger (1983, p. 187) finds that female workers and young male high school graduates are particularly substitutable. Grant and Hamermesh (1981, p. 359) argue that the growth of the female labour force accounts for perhaps 10 percent of the relative decline in earnings of young workers that occurred in the late 1960s and 1970s. In other words, the income prospects of baby boom males may well have dimmed even if the cohort had not been so large.

Finally, none of these studies directly estimates cohort-specific profiles of income by age. Berger’s two studies come closest. These two studies include cohort size as an explanatory variable in the earnings equations, allowing larger cohorts to have profiles of income by age that differ from those of smaller cohorts.

**WHY DOES COHORT SIZE MATTER?**

What gives the immiseration hypothesis its punch in the popular press is the implication that a smaller boom cohort would have done better in the job markets of the 1970s and 1980s. In developing this argument, we distinguish between an initial (or, early career) wage and the downstream profile of earnings by age that describes career progression.

Labour market segmentation is a central assumption in the immiseration hypothesis. The accumulation of work experience and on-the-job training (i.e., specific human capital) differentiates workers broadly by age. As well, the needs of the job may simply require maturity or judgement in the worker. In other cases, the age of an employee may be important in the marketing strategy of the employer. Whatever the reason, workers of different ages may not fully substitute for one another. Where employers require experience, maturity, or other characteristics that are proxied by age, wage rates will appear to increase with age in labour market equilibrium: at least through the ages at which such attributes change most rapidly.

Just how complementary, or substitutable, are various labour market segments? In modern empirical research, segmentation is usually examined in terms of schooling, gender,
and age/experience. In some industries, the nature of the production process, or costs of errors, make it difficult to replace experienced workers with youthful inexperience. In other cases, it might be difficult to replace women with men, or to replace a more-educated worker with someone who has less schooling. Of special note here are the substitution between levels of experience, the substitution between levels of schooling, and the substitution between experience and schooling.

Will baby boomers recover from initially-low salaries as they move along their career paths? Here, research opinion is divided. In part, this is because the question is speculative; we must await the passing of time to see how the the earnings history of the baby boom is actually realized.

To understand how the slope of the profile of earnings by age might have changed because of the baby boom, we need to consider the postschooling acquisition of job skills (or, equivalently, investment in specific capital) that helps drive it. For the worker, on-the-job training is associated with a lower initial wage (compared to other jobs available at the time). In a direct sense, the higher wage foregone by the worker is part of his or her investment in human capital; the payback for that investment is a steeply sloped profile of earnings by age culminating in higher earnings than would have occurred in the absence of training.

There are differing views of the effect of the baby boom on returns to investment in specific human capital. Berger (1989, p. 312-314) summarizes these. The central question here is the effect of the growth in the labour force induced by the baby boom on the earnings of experienced workers 10 to 20 years or more downstream. Some suggest that the wages of such workers will rise sharply, raising the return on job training today, making such training more attractive, lowering the typical wage received today, but steepening the profile of income by age. Others suggest that post-school investment in training typically declined when the baby boom entered the labour force. The latter argument assumes that, in long run growth equilibrium, a short-term increase in the labour force growth rate causes labour to become more plentiful relative to other factors of production, and hence causes the real wage to fall. They argue that the baby boom made rational decisions, when entering the workforce, in favour of jobs with less training and a higher initial wage because the lowered downstream returns to such investment made it less attractive.

The latter explanation is plausible. However, other explanations also suggest a flattening of the profile of income by age. One explanation concerns various supply or capacity constraints (e.g., admissions into medical schools and other internship programs, and restricted hospital and university
staff hiring) that prevented baby boomers from moving into occupations with traditionally steep profiles of income by age. Another explanation concerns the effect of rising workforce participation among women for whom the profile of earnings by age has traditionally been less steep.

Still another explanation concerns the dampening effect that higher youth unemployment had on career development of the baby boomers. Youth unemployment reduces earnings in the short term. Over the longer term, it can also reduce earnings prospects because specific human capital (e.g., skill acquisition and on-the-job training) is not acquired as quickly.

This raises the question of the effect of cohort size on unemployment rates. Why does cohort size affect unemployment? When the supply of young workers rises, why don't their wages simply fall until unemployment is returned to a "natural" level? To argue that an increase in cohort size boosts unemployment, we must assume either a stickiness to the wage rate of young workers that prevents equilibrium from being established or a limit to substitution among workers by age that prevents employers from making full use of this cohort.

Did unemployment rates rise among the baby boom cohort. After correcting for business cycle effects, Russell (1982, p. 60) finds that unemployment rates increased among young adults (especially teen-agers) in the United States, but argues that these increases had been happening for some time and did not correspond to the time at which the supply of labour increased. In contrast, Foot and Li (1986) argued that the rise and fall of unemployment among 15-24 year olds in Canada (which peaked around 1980) was directly attributable to the baby boom cohort. Foot and Li (1986, p. 503) predicted an increase in unemployment among 25-34 year olds that would peak near 1990.

DATA SOURCE AND VARIABLES

In the absence of a suitable panel study, data are taken from the 2 percent public-use samples of individuals of the 1981 and 1986 Census of Canada; these unlinked, cross-section samples are large; there are almost 500,000 persons in the 1986 sample.

In this study a subsample was drawn from each public-use sample. Excluded are all persons under the age of 25, and a small number of persons who were not resident in a private household, living in

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14 This aspect is ignored in much of the empirical labour economics literature. Welch (1979), for examples, looks at weekly earnings only of persons working 50-52 weeks in the past year: i.e., persons who are fully employed.

15 Again, in contradiction to Russell, Flaim (1990) claims that the baby boom did heighten U.S. unemployment rates in the relevant age groups. Flaim (p. 4) also emphasizes the role of the Vietnam War in lowering unemployment rates among young men, something that Russell does not take into account.
private households enumerated outside Canada, or were only temporarily resident in a private household. The variables used in this analysis are defined as follows:

Total Real Noninvestment Income

Total real noninvestment income of the individual (hereinafter simply "income") is the dependent variable in this analysis. This includes all money received during the calendar year 1985 in the 1986 Census (or 1980 in the case of the 1981 Census) from the following sources:  

- Gross wages, salaries, military pay and allowances, tips, commissions, cash bonuses and casual earnings.
- Net receipts (gross receipts minus expenses of operation) from a non-farm unincorporated business or professional practice.
- Net receipts (gross sales minus depreciation and cost of operation) from the operation of a farm.

16 Individuals immigrating to Canada since January 1 of the Census year were deemed to have zero incomes in the preceding year. Also, because of response problems, individuals in Hutterite colonies were assigned zero income. In a partnership, only the respondent's share of income is reported. Data on family allowances and child tax credits were imputed and added to the income of one parent. Income paid "in kind" is excluded. Other receipts not counted as income include gambling gains and losses, money inherited lump-sum, capital gains or losses, receipts from the sale of property or personal belongings, income tax refunds, loan payments received, loans repaid to an individual as the lender, lump sum settlements of insurance policies, rebates of property taxes and other taxes, and refunds of pension contributions.

including advance, supplementary, or assistance payments by governments.
- Old Age Security, Guaranteed Income Supplement, Spouses' Allowance, Extended Spouses' Allowance (the latter only in the 1986 Census), Canada or Québec Pension Plan benefits.
- Regular receipts from an employee pension plan, including payments received from annuities, pensions paid to widows or other relatives or deceased pensioners, but excluding lump-sum benefits, withdrawals from a pension plan or RRSP, and refunds of overcontributions.
- Unemployment Insurance benefits, including benefits for sickness, maternity, fishing, work sharing, retraining and retirement.
- Other transfer payments from government: e.g., family allowances and federal child tax credits (1986 Census only), payments received by mothers with dependent children, persons temporarily or permanently unable to work, and the elderly, blind and the disabled. Included are provincial income supplement payments to seniors including shelter allowances, veterans' pensions, war veterans' allowance, pensions to widows and dependants of veterans, workers' compensation, transfer payments for training under the National Training Program, and provincial tax credits and allowances claimed on income tax returns.
- Alimony, child support, periodic support from persons outside the household, net rental revenue from roomers and boarders, noninvestment income from abroad, non-refundable scholarships and bursaries, severance
pay, royalties, strike pay and other regular cash income received.

Excluded from this measure of income are dividends, interest, and other investment income: e.g., interest received from deposits in financial institutions, savings certificates, and bonds and debentures, stock dividends, net rents from real estate, mortgage and loan interest received, regular income from an estate or trust fund, and interest from insurance policies. Investment income is related to savings behaviour and hence to the lifetime consumption plans of the consumer; excluding such income in this analysis permits us to better focus on the underlying source of funds to the consumer.

To preserve confidentiality, individual incomes in the 1986 Census public-use sample are truncated at -$30,000 and +$100,000 for both men and women (except for men outside the Atlantic Provinces where the upper limit is +$140,000). The number of censored cases being small, no adjustment was made in estimation.

In this study, average incomes are smoothed using centered running means of length 3. For group $s$ of individuals under study, let $x_{ijst}$ be the real income, CPI-adjusted to 1980 dollars, of individual $j$ at age $i$ at date $t$. Let $n_{ist}$ be the number of individuals in the group at age $i$ at time $t$. Then, the average income of an individual in the group at age $i$ at date $t$ is

$$y_{ist} = \frac{1}{n_{ist}} \sum_{j=1}^{n_{ist}} y_{ijst}$$

Smoothed average income, $\bar{y}_{ist}$ for persons at age $i$ in the group is calculated as follows

$$\bar{y}_{ist} = \frac{1}{3} \sum_{k=i-1}^{i+1} y_{kst} \quad i \in \{26, 27, \ldots, 65\}$$

and

$$\bar{y}_{25s \ t} = y_{25s \ t}$$

Formal Schooling

Individuals are divided into three groups by level of schooling.

- Little schooling: highest grade attended not more than grade 8. As sample sizes are small here, and shrinking steadily over time, this group is considered only briefly below.
- Moderate schooling: highest grade attended is beyond grade 8 but individual has not attended a post-secondary educational institution.
- Advanced schooling: individual attended a post-secondary educational institution (includes both programs for which a degree, certificate or diploma is conferred upon successful completion and training at a non-degree-granting educational institution.

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17 The corresponding figures for the 1981 Census public-use sample were -$30,000 and +$75,000; +$100,000 for men outside the Atlantic Provinces). In all, 883 cases were removed out of 316,539, reducing estimated average individual income by about $124 on average, and the estimated total income of all Canadians by about $39 m. Hanoch and Honig (1985) discusses methods of adjusting for censoring effects.
institution other than at the elementary-secondary level).

Work Status

In addition, individuals are classified by work status during the year preceding the census.

- full-time full-year: person worked at least 49 weeks (including paid time off) during the year, and reported that these were mainly weeks of full-time work.
- other: person worked no more than 48 weeks during the year, or reported that weeks were not mainly full-time.

Suppose that, within a specified group of individuals, there are \(n_{ifl}\) employed full-time full-year and \(n_{iof}\) others. Let \(p_{it}\) be the proportion of persons of age \(i\) that work full-time and full-year at date \(t\): i.e.,

\[
p_{it} = \frac{n_{ifl}}{n_{ifl} + n_{iof}}
\]

The smoothed proportion, \(\bar{p}_{it}\), is defined as:

\[
\bar{p}_{it} = \frac{1}{3} \sum_{k=i-1}^{i+1} p_{kt} \quad i \in \{26, 27, \ldots, 65\}
\]

and

\[
\bar{p}_{25t} = p_{25t}
\]

The Census provides no information about the work history of the individual beyond status in the previous year. We lack, for example, information on work status at earlier dates, or about the entry or re-entry of workers into the labour force. There likely are substantial differences in income between individuals (e.g. between men and women) that could be accounted for by such variables.

Geographic Location

Two categories of location are considered.

- Metro: person lives in a specified Census Metropolitan Area (CMA). In the 1981 Census public-use sample, specified CMAs include Calgary, Edmonton, Halifax, Hamilton, Kitchener, London, Montréal, Ottawa-Hull, Québec City, St Catharines-Niagara, Toronto, Vancouver, Winnipeg. In the 1986 sample, Halifax, London, and Québec City were excluded, but Regina and Saskatoon were added.
- Nonmetro: persons living elsewhere in Canada. This includes persons living in rural and smaller urban centres as well as those living in an unspecified CMA.

Marital status

Four categories of current marital status are considered. Marital status is assessed at the census date in either 1981 and 1986.

- Single: never-married person.
- Married: person currently married including persons who are separated, or otherwise not residing with spouse. By census convention, common-law partners are included as marrieds, but same-sex couples are not.
- Widowed.
- Divorced.

Living Arrangement
This paper distinguishes between two kinds of living arrangement: as enumerated at the census date in either 1981 and 1986.

- Economic family person: an individual who shares a private dwelling with at least one other person to whom he or she is related by blood, marriage, or adoption: e.g., spouse, child, parent, or sib. In the 1981 and 1986 censuses, marriage refers only to opposite-sex couples, but does include common-law relationships. There may also be other persons in the dwelling to whom this individual is unrelated.

- Other person: an individual who lives alone in a private dwelling (i.e., a one-person household), shares a private dwelling with others to whom he or she is not related by blood marriage or adoption, or lives in a collective dwelling.

Most households in Canada consist of either a nuclear family living alone (i.e., where everyone present is also an economic family member) or a person living alone (hence, an "other person"). The distinction between an economic family person and other persons is to separate largely a living arrangement that is typically more expensive (i.e., living alone or sharing a dwelling with just one other unrelated person), from one that is typically less expensive (i.e., sharing accommodation with a family).

Estimates are presented below of the proportion of a single year birth cohort that are economic family persons. The estimates presented are smoothed using the same centered, three-year running means procedure as for $\tilde{y}_{it}$ and $\tilde{p}_{it}$.

**Profiles of Income by Age, Canada, 1980 and 1985**

Let us first consider men with advanced schooling who live in metropolitan Canada. Then, let us examine the effect of changing schooling, the different experiences of men and women, and metropolitan versus nonmetropolitan individuals.

**Metro Men With Advanced Schooling**

Smoothed incomes and participation rates, calculated from the 1981 and 1985 Census public-use samples, are shown in Table 1 arrayed by age at the time of the 1981 Census. Consider first the 1981 Census data. From such data, it is possible to draw profiles of income by age: i.e. $\tilde{y}_{i80}$ and $\tilde{y}_{i080}$, $i \in \{25, 26, \ldots, 65\}$. See Chart 3. Such profiles show how average income (either all persons or just those working full-time full-year) differ by age among members of this group in 1980. Separate profiles can be drawn using the 1986 Census data. These too are shown in Chart 3.

A striking feature of Chart 3 is the decline in average income that occurred from 1980 to 1985. Among men working full-time full-year in panel (a), average income dropped at every year of age up to 37 with scattered gains and losses at older ages. The losses are more widespread when we include men not working full-time full-year as in panel (b). These losses suggest that the drop in
average income for almost all age groups in the late 1970s found by Dooley (1986) continued into the first half of the 1980s.

Chart 3 makes it easy to compare the average income of a 25 year old in 1980 with the average income of a 25 year old in 1985. However, to see how the profile of income by age for a birth cohort changed, we need a different diagram. To focus thinking for the moment, consider the change in profile of income by age within the cohort of men born between 2 June 1955 and 1 June 1956: i.e. those who would be 25 years old on the Census date, 1 June 1981. From Table 2, 52 percent of such men worked full-time full-year during 1980: i.e., \( p_{25\,80} = 0.52 \). From the same table, the average income \( (\bar{y}_{25\,80}) \) of these men was $17,382; men not working full-time full-year averaged only $9,693 \( (\bar{y}_{25\,80}) \). By 1985, the participation rate in this same cohort (now aged 30 as of 1 June 1986), \( p_{30\,85} \), had increased to 67 percent. The average income of the full-time full-year worker, \( \bar{y}_{30\,85} \), had risen to $21,882 (in 1980 dollars). The income of others, \( \bar{y}_{30\,85} \), now averaged $11,007 (also in 1980 dollars).

In terms of these three variables, this cohort became better off on average from 1980 to 1985. At the same time, the increase might well have fallen short of their expectations in 1980. In 1980, 71 percent of metro men with advanced schooling who were then 30 years old, worked full-time full-year. Their average income, \( \bar{y}_{30\,80} \), was $22,694; men of the same age and schooling but not working full-time full-year averaged \( \bar{y}_{30\,80} = 13,267 \). Thus, if our cohort of 25 year olds at 1 June 1981 expected to do at least as well in 1985 as their 30 year old counterparts had done in 1980, they were to be disappointed.\(^{18}\)

Shown in Table 3 are the 1980-85 expectations gaps for metro men with advanced schooling; the birth cohorts shown range from 1955-56 back to 1920-21. An expectation gap is the relative difference between the average income (or participation rate) in 1985 at a particular age, and the average income (or participation rate) that would have been received by someone of the same age in 1980. In other words, the expectation gaps for a person at age \( i \) in 1981 are given by:

\[
(7) \quad \frac{\bar{y}_{i+5\,85} - \bar{y}_{i+5\,80}}{\bar{y}_{i\,80}} \quad i \in \{25,26,\ldots,60\}
\]

\(^{18}\)In fact, there is good reason to believe that these men expected to do even better than their predecessors. King and Dicks-Mireaux (1982, p. 257), in a study of the asset holding behaviour of Canadian households, found that only one half of the growth rate of real earnings was accounted for by improvements in education, changes in occupational structure, and other explanatory variables, and assumes that the remainder was a result of technical progress and capital accumulation. Annual growth rates of real earnings attributed to the latter by King and Dicks-Mireaux (1982) were 0.75% before 1936, 1.25% in 1936-46, 1.5% in 1946-56, and 1.75% in 1956-76.
Consider first the expectation gaps with respect to income. From age 25 to age 34 (as at the 1981 Census), the gap in income for full-time full-year workers is between -4 and -7 percent; for those not working full-time full-year at the same age, the gap is -20 to -33 percent. There is evidence here that these male baby boom cohorts did not fare as well as earlier generations. The incomes of cohorts born between mid 1946 and mid 1956 (the youngest in our sample) each fell substantially short of expectations. On the other hand, the gap is narrowed, eliminated, or even reversed among older cohorts.

The evidence is more muddied, however, if we turn to the expectation gaps in terms of the full-time full-year participation rate. The cohorts born between mid 1943 and mid 1965 did relatively poorly. However, so too did many of the older cohorts; especially those born in the 1920s and 1930s.

Unfortunately, diagrams like Chart 3 provide only two points on the cohort profile of income by age: i.e., the average incomes for that cohort for 1980 and 1985. A model and assumptions are needed to sketch a lifetime cohort profile from these two points. Such a model presumably must also make use of related information about younger and older cohorts.

Most attempts to model a cohort’s profile of income by age assume that income is a quadratic function of age or experience. The attraction of a quadratic form is its simplicity; the drawback is that a quadratic form simply may not be a good empirical approximation, or even worse, that it may give systematically biased estimates of income. Quadratic forms have been widely used: e.g., Welch (1979, p. 585), Angle and Wissmann (1983, p. 77), Dooley and Gottschalk (1984, p. 68-9), Berger (1985, p. 571), Berger (1989, p. 316), Robb and Burbidge (1989), and Ilmakunnas and Pudney (1990, p. 208).

The approach of this paper is to assume that birth cohorts anticipate that their income prospects after 1985 will be the same as their experience between 1980 and 1985. In other words, suppose that they expect to do better or worse over time according to an age effect combined with a cohort effect. The

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19 A cautionary note is in order here. Some of the decline in labour force participation may have been due to other changes (e.g., improvements in disability benefits) that left individuals better off than they might have been had they continued in the paid work force.

20 Murphy and Welch (1990).

model for future incomes and participation rates employed here is as follows:

\[
\hat{y}_{i+5s}^{90} = \frac{\bar{y}_{i+5s}^{85}}{\bar{y}_{i+5s}^{80}}
\]

\[
\hat{y}_{i+10s}^{95} = \frac{\bar{y}_{i+10s}^{95}}{\bar{y}_{i+10s}^{90}}
\]

\[
\hat{p}_{i+5s}^{90} = \frac{\bar{p}_{i+5s}^{85}}{\bar{p}_{i+5s}^{80}}
\]

\[
\hat{p}_{i+10s}^{95} = \frac{\bar{p}_{i+10s}^{95}}{\bar{p}_{i+10s}^{90}}
\]

To backcast, equations (9) though (12) are reversed to yield:

\[
\hat{y}_{i-15s}^{70} = \frac{\bar{y}_{i-15s}^{75}}{\bar{y}_{i-15s}^{80}}
\]

\[
\hat{y}_{i-10s}^{75} = \frac{\bar{y}_{i-10s}^{80}}{\bar{y}_{i-10s}^{85}}
\]

\[
\hat{p}_{i-15s}^{70} = \frac{\bar{p}_{i-15s}^{80}}{\bar{p}_{i-15s}^{85}}
\]

\[
\hat{p}_{i-10s}^{75} = \frac{\bar{p}_{i-10s}^{80}}{\bar{p}_{i-10s}^{85}}
\]

Backcasts and forecasts of income and participation rates for selected birth cohorts are presented in Table 4.

These extrapolation equations are useful, but problematic. They do not, for example, guarantee a priori that

\[
\hat{y}_{it} \geq \hat{y}_{iot},
\]

\[
0 \leq \hat{p}_{it} \leq 1,
\]

\[
\hat{y}_{it} = \hat{p}_{it}\hat{y}_{it} + (1-\hat{p}_{it})\hat{y}_{iot}
\]

in every case. Further, these extrapolations assume that the age effect and the cohort-specific (e.g., size) effect stay the same over time. Consequently, a drop in income for full-time full-year workers is extrapolated during the first half of the 1970s; since the opposite happened, presumably something else had changed. Finally, these models indirectly assume that there is a correspondence between the slope of the age profile for one birth cohort, and the subsequent experience of younger cohorts. This makes it difficult to draw reliable conclusions about how the slope of the profile has changed from one cohort to the next. These extrapolations should therefore be thought of simply as what might have been had the patterns of the early 1980s been a continuation of past experience.

These projections allow us to sketch profiles of income by age by birth cohort. See Chart 4. Overall, the cohort profile of income by age among those employed full-time full-year characteristically increases by about 50 percent from the mid 20s and plateaus around age 50.

After taking into account participation rates, the average income of all men peaks around age 45 and falls above 45 about as quickly as it rises below that age.

From panel (a) of Chart 4 the cohort profile of income by age has indeed shifted downward substantially for more-recent cohorts. At age 40, the 1955-56 birth cohort working full-time full-year is projected to have an income that, in 1980 dollars, would be about $4,000 (or about 13 percent) less than that backcast for cohorts born in the 1930s.
The difference is even more marked if we look incomes averaged over work status. In panel (b), the average is about $10,000 (or over 30 percent) less at age 40 than that backcast for cohorts born in the 1930s.

**Metro Men with Moderate Schooling**

Chart 5 presents similar extrapolations of the cohort profiles of income by age for men of moderate schooling who live in metropolitan areas. There are striking similarities between Chart 4 and Chart 5 in that the baby boom cohorts appear to be doing substantially worse than the cohorts born in the 1930s. At age 40, among those employed full-time full-year, the difference in income between the 1930-31 cohort and the 1955-56 cohort is again expected to be about $4,000. The difference in average income for all metro men with moderate schooling is also again expected to be near $10,000.

Since men with moderate schooling have lower incomes to begin with, these similar dollar losses also mean that the relative loss has been greater among the less educated. This runs counter to U.S. studies which suggest that the greatest relative losses have occurred among young adults with more schooling. Dooley (1986) also found that, during the 1970s, men with moderate schooling saw more improvement in their income prospects than did men with advanced schooling.

**Metro Men With Little Schooling**

Chart 6 presents the same kind of extrapolations of the cohort profiles of income by age for men of little schooling who live in metropolitan areas.

The cohort profiles of income by age here are unlike those of men with more schooling. None of the birth cohorts in this category shows any increase in income with age, even among those working full-time full-year. In each cohort, average income declines with increasing age.

Further, the baby boom cohorts appear to be doing substantially worse here than in the case of those with more schooling. At age 40, among those employed full-time full-year, the difference in income between the 1930-31 cohort and the 1955-56 cohort is expected to be about $7,000. The difference in average income for all metro men with moderate schooling is expected to be near $11,000.

**Metro Women With Advanced Schooling**

Changes in the cohort profile of income by age for metro women in the early 1980s were quite different from those for men. Chart 7 shows the estimated cohort profile of income by age for women with advanced schooling; Chart 8 is for women with moderate schooling.

First, consider panel (a) of Chart 7. More-recent cohorts have experienced substantial (albeit erratic) gains in
income overall in recent decades. This is in stark contrast to the steady losses among male cohorts. The gain for women working full-time full-year at age 40 from the 1930-31 to the 1950-51 birth cohort is estimated to be almost $3,000.

Even more impressive are the gains when we include women who are not working full-time full-year. See panel (b). The gain for all women at age 40 from the 1930-31 to the 1955-56 birth cohort is projected to be over $5,000. And, the gains tend to accrue steadily from one birth cohort to the next.

At the same time, there remains a large gap between the sexes; women in the 1955-56 birth cohort working full-time full-year can look forward to an income at age 40 that is about $7,000 (or 27 percent) less than their male counterparts.

The sexes differ in another respect. The average income of women working full-time full-year appears to plateau at about age 40. A similar plateau is evidenced in all the older birth cohorts in panel (a) of Chart 7. In contrast, the corresponding male cohorts working full-time full-year evidence a continued rise in average income through about age 50; see panel (a) of Chart 4.22

There are implications here for family income in the case of metro couples where both partners have advanced schooling. Consider a husband and wife, each born the 1955-56 birth cohort. If both work full-time full-year, they might expect a combined income at age 40 that is $3,000 higher for the wife and $4,000 lower for the husband: a net loss of $1,000 to the family compared to a similar couple from a 1930s cohort. However, among couples where the husband works full-time but the wife does not, there may actually have been an increase in income: presumably because of increased part-time participation by women in the paid workforce. However, single men working full-time became on average worse off relative to couples.

Metro Women With Moderate Schooling

The pattern is similar among women of moderate schooling. Women born in the 1950s are projected to earn about $3,000 (or 40 percent) more annually by age 40 than did women born in the 1930s: see panel (b) of Chart 8. Among those working full-time full-year, the average

22Some of this difference between men and women may be attributable to systematic differences in work history: differences that are overlooked when we account simply for age and current work status. Angle and Wissmann (1983) also present evidence of a substantial gender gap. They find that young U.S. men and women have about the same rate of return to a full-time equivalent month of work experience after controlling for formal education. The gap between women's and men's wages increases with age, even after controlling for work experience. The authors conclude that young men are paid more as they age because of age; young women are not.
increase is smaller: about $2,000 (or 16 percent).

Again, women in the baby boom cohorts have done better than men of the same age. Also, as with women of advanced schooling, the gains of women with moderate schooling working full-time full-year have not been sufficient to offset the losses to men with moderate schooling. At the same time, the gains of women working part-time have again been substantial.

Metro versus nonmetropolitan Income Prospects

Finally, let us consider the differences between cohort profiles of income by age for metro and nonmetro individuals. To illustrate, let us consider nonmetro males with advanced schooling. Contrast Chart 9 with Chart 4.

Nonmetro men differ from metro men in several respects. Although incomes at age 25 are quite similar, nonmetro men do not do as well at older ages. The incomes of those working full-time full-year peak earlier (around age 40), then slowly drop off. From the 1930-31 cohort to the 1955-56 cohort, the projected drop in income at age 40 among nonmetro men is larger than that for metro men.

LABOUR FORCE ADJUSTMENT, 1981-1986

Between 1981 and 1986, the schooling, geographic location, and work status composition of each birth cohort changed. See the three columns on the right side of Table 5. There was a big increase in the incidence of women working full-time full-year in cohorts born since the 1930s. Women born in 1955-56, for example reported a participation rate 13 percent higher in 1986 than did women of that age in 1981: i.e., $\hat{p}_{30\,85}/\hat{p}_{30\,80} = 1.13$. Other changes include the rising incidence of advanced schooling among both women and men, and the declining incidence of full-time full-year work among the older cohorts.

What effect did these changes have on the income prospects of individuals? Shown in the middle column of Table 5 is the income expected on average in 1986 if persons in that birth cohort had had the same schooling, geographic location, and work status mix as the cohort, born five years earlier, in 1981.

Women born in 1955-56, for example, had an average income of $8,215 (in 1980 dollars) in 1985. If they had had the same mix of schooling, geographic location, and work status as women born in 1950-51 did in 1971, their average income would have been only $7,831. This, in turn is higher than the average income received in 1971 by a woman in the 1950-51 birth cohort ($7,602) because of the real increase in women's incomes over the period (cf. Chart 7 and Chart 8); for men, the pattern is the opposite.

For the cohorts of women born since the early 1930s, the actual average income is higher than the income expected without labour force adjustment. This matches the cohorts for
which the increase in full-time full-year work status has been the largest.

For men, average income realized in 1985 is much closer to the expected income, implying that changes in schooling, geographic location, and work status have been less important. In the male cohorts born in the 1950s, real income at a given age declined by 5 to 10 percent from 1980 to 1985 primarily because of worsened income prospects in all schooling, geographic location, and work status categories.

Of particular interest here is that improvements in schooling produced only a small increase in income. For example, men in the 1940-41 birth cohort were 30 percent more likely to have advanced schooling than the 1935-36 cohort, yet the increase in average income ($21,390 versus $20,494) was only $896.23

Also of interest is that the big drop in full-time full-year work in the 1920-21 cohort as it approached age 65 was not matched by a drop in income. Whether the change in work status is due entirely to earlier retirement, enhanced disability and unemployment insurance benefits, or other changes is not clear.24 What is clear is that the increase in income among those not working full-time full-year increased by enough to offset the effect of a substantial decline in the incidence of full-time full-year work.

CORRESPONDING SHIFTS IN LIVING ARRANGEMENT

How have living arrangements in Canada changed in recent years?25

Table 6 presents data on the proportions of women in Canada who are economic family persons from the 1981 and 1986 censuses arrayed by current marital status and age as of 1981. Among single women aged 20 in 1981,

---

23This raises the question of whether the schooling of the baby boomers differed from its predecessors? Did the baby boom suffer, for example, from overcrowded school facilities? Russell (1982, p. 21-49) suggests not, arguing that spending on schools, colleges, and universities increased apace with growth of the cohort. Welch (1984, p. 632) argues that we must be mindful that overcrowding occurred nonetheless and that measures of school output such as College Board exam scores show a decline in the quality of schooling that might be attributed to cohort size.

24In a U.S. study based on the National Longitudinal Survey data for 1969, Parsons (1980) finds empirical evidence that reduced workforce participation among prime-aged males was largely explicable in terms of the improved benefits under the Social Security disability program. Keil and Symons (1990) argues that part of the modern increase in unemployment rates in Canada was due to a liberalization of Unemployment Insurance benefits in 1979.

25The baby boom may well have affected the housing market in other ways. See Mankiw and Weil (1989) who finds evidence that the baby boom generation was the major cause of the increase in real housing prices in the 1970s, and suggests that real housing prices will fall substantially over the next two decades as the baby boomers are succeeded by new smaller cohorts of first-time home buyers. See also Manchester (1988) who considers the effect of the baby boom on housing consumption, interest rates, and savings using a multi-period equilibrium model.
80 percent were economic family persons: the vast majority of these were living in a parent's home. By 1986, of the remainder of this birth cohort (remember that a substantial proportion married during the intervening years), only 59 percent of singles were economic family persons.

Again, it is useful to contrast the period and cohort effect. A single woman of age 20 in 1981 might observe that only 50 percent of 25 year old singles at the time were economic family persons. By the time, she herself reached age 25, the figure had risen to 59 percent. In other words, over the early 1980s, young single women became less likely to be living alone or in the absence of other family members.

In a manner identical to that used to derive cohort profiles of income by age above, it is possible to estimate cohort profiles of propensity to be an economic family person by age. See Chart 10 for women and Chart 11 for men.

Consider first the single women in panel (a) of Chart 10. In Chart 7 and Chart 8, we saw evidence of a pronounced upward shift in the cohort profile of income by age for women born in the early 1950s compared with women born in the 1930s. There is little evidence however of a corresponding shift in living arrangement. Only in the 1955-56 cohort is the change more substantial. in this case, young single women are about 10 percent more likely to be economic family persons than was the 1950-51 cohort at the same age. This result is consistent with the argument that the smaller real incomes of the the 1955-56 cohort, compared with the 1950-51 cohort, led these women to find a less expensive form of accommodation.

Among single men, the patterns are similar. See panel (a) of Chart 11. The principal difference is that the increase in incidence of economic family persons from the 1950-51 to the 1955-56 cohort is relatively muted: especially when considered in light of the drop in real income in Chart 4, Chart 5, and Chart 6.

Also shown in Chart 10 and Chart 11 are the estimated cohort profiles of propensity to be an economic family person by age for divorced men and women. Here, we must be cautious in interpretation. An important determinant of living arrangement will be the presence of dependent children. The cohorts born in the 1920s and the 1930s begat the baby boom. Having had more children, it should not be surprising to find that they currently are more likely to live with a child. There is evidence in panel (b) of both charts to suggest that the incidence of economic family status went up among these cohorts and fell for the cohorts born in the 1940s who had much lower fertility rates. What also stands out in panel (b) is the rise in propensity to be an

26Marrieds are omitted here because they almost always live with a spouse, hence are economic family persons. The widowed are excluded because there are relatively few in the younger cohorts.
economics family person for the 1955-56
cohort: especially in the case of men.

CONCLUSIONS

There are few empirical studies of
variations in income prospects of
Canadians by birth cohort. There have
been more studies of the effect of the
baby boom on income prospects in the
United States, but many of these use
data from the late 1960s through mid
1970s only, and are period rather than
cohort-based. Further, there is an
unhealthy schism in the empirical
literature between studies of the
earnings or income of fully-employed
persons and studies of labour force
participation and unemployment.
Integration of these two kinds of studies
enables us to better see the scope of the
change in income prospects.

Evidence presented in this paper
suggests that Canadian men in almost all
birth cohorts of working age had lower
real incomes in 1985 than did their
predecessors in 1980. The only
exceptions were the birth cohorts near
age 65 where improved disability,
unemployment insurance, and pension
benefits may well have stemmed the
losses typical of younger cohorts.

In contrast, most cohorts of women did
better in 1985 than did their counterparts
in 1980: partly on the strength of
heightened participation in the paid
workforce. Nonetheless, the youngest
cohorts of women working full-time
examined in this study (i.e., those born
in or after 1955-56), also experienced
lower real incomes in 1985 than did their
predecessors in 1980.

Among young single women, the
proportion living with relatives rose by
about 10 percent from 1981 to 1986. This
is consistent with the argument that a
drop in real income forced young adult
women to either delay home-leaving or
opt for another inexpensive form of
accommodation. living with a relative.
There was a similar change in the living
arrangements of men but much smaller
in magnitude, even though the decline in
income prospects was greater.

The effect of declining income
prospects of young men on living
arrangements is more evident among the
divorced. Divorced men were more
likely to live with relatives in 1986
compared with 1981. The change is
more muted among divorced women.

Overall, the income prospects of the
baby boom cohorts shrank faster than
did the prospects of other cohorts, and
there were accompanying changes in
living arrangements which suggest that
the baby boom cohorts did seek out less-
expensive forms of shared
accommodation. At the same time, the
largest changes in living arrangement
did not correspond to the cohort that
experienced the greatest drop in income
prospects.

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composition and male earnings: a production


TABLE 1 Summary of characteristics of selected empirical studies of the profile of income or earnings by age for Canada and the United States.

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<th>Author, year published</th>
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<td>Robb and Burbidge, 1989</td>
<td>FES Cross (7)</td>
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SOURCE Compiled by the author.

NOTES
(1) Not stated.
(2) Sample excludes single adults living with a parent.
(3) Age of husband.
(4) Includes only spending units in urban areas.
(5) Includes only spending units headed by husband-wife couple with no change in household composition over the year.
(6) Census nuclear family (i.e., husband-wife or lone-parent family) or nonfamily person.
(7) Spending unit.
(8) Dependent variable is ratio of earnings of mature to young workers.
(9) Cohort differences considered only in terms of size effect.
(10) Weekly earnings are calculated as annual earnings divided by weeks worked in year.
TABLE 2 Total individual noninvestment income (1980 dollars) and work status of men with advanced schooling, metropolitan Canada, 1980 and 1985.

<table>
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<th>Age at 1981 Census</th>
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<th>1985 Income and work status</th>
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SOURCE: Computed by the author from the 1981 and 1986 Census public use samples (individual file).

NOTE: Estimates of income and participation rates are smoothed using centered running means of length 3 over adjacent single years of age. Incomes in 1986 Census deflated using CPI.
TABLE 3  Expectations gaps for metro men with advanced schooling, Canada, 1980 to 1985.

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<tr>
<th>Age at 1981 Census</th>
<th>Full-time full-year participation rate (%)</th>
<th>Full-year, full-time workers (%)</th>
<th>Average annual income Others (%)</th>
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SOURCE  Computed by author. See text for details
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**SOURCE** Observed smoothed values computed by the author from the 1981 and 1986 Census public use samples (individual file). Backcasts and forecasts made using equations (9) through (16). See text for details.

**NOTE** Participation rate is the proportion of cohort that is working full-time full-year.
TABLE 5  Actual and expected incomes by birth cohort and gender, 1985, showing actual income in 1980 and ratio of proportions of cohort by location, schooling, and work status, 1986 over 1981.

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<th>Birth cohort</th>
<th>$\bar{y}_{i80}$</th>
<th>$\bar{y}_{i+5,80}$</th>
<th>$\bar{y}_{i+5,85}$</th>
<th>Expected in 1985 without adjustment</th>
<th>Living in CMA</th>
<th>Advanced schooling</th>
<th>Full-time full-year</th>
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SOURCE  Computed by the author using the 1981 and 1986 Census public-use samples (individual file). See text for details.
TABLE 6  Proportion of all women living as economic family persons in private households by current marital status and age in 1981, Canada, 1981 and 1986.

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SOURCE  Computed by the author using the 1981 and 1986 Census public use samples (individual file).

NOTE  Denominator includes individuals in collectives as well as private dwellings. Numerator does not include economic family members in collectives. Proportions are smoothed using centered running means of length 3 over adjacent single years of age. Blank indicates that cohort sample size was under 100 persons.
CHART 1  Average annual earnings (1971 dollars) of men working full-time by level of schooling and age group, Canada, 1971-73 and 1979-81.

![Chart 1](image1)

**SOURCE**  Dooley (1986, p. 148)


![Chart 2](image2)

**SOURCE**  Robb, et al. (1989, p. 528)
CHART 3  Average income (1980 dollars) of men with advanced schooling and living in metropolitan areas by age, Canada, 1980 and 1985.

(a) Men working full-time full-year

(b) All men

SOURCE  See Table 2.
CHART 4  Average income (1980 dollars), extrapolated and actual, of men with advanced schooling and living in metropolitan areas by age and selected birth cohorts, Canada.

(a) Men working full-time full-year

(b) All men

SOURCE Table 4.
CHART 5  Average income (1980 dollars), extrapolated and actual, of men with moderate schooling and living in metropolitan areas by age and selected birth cohorts, Canada.

(a) Men working full-time full-year

(b) All men

SOURCE  See text.
CHART 6  Average income (1980 dollars), extrapolated and actual, of men with little schooling and living in metropolitan areas by age and selected birth cohorts, Canada.

(a) Men working full-time full-year

(b) All men

SOURCE  See text.
CHART 7 Average income (1980 dollars), extrapolated and actual, of women with advanced schooling and living in metropolitan areas by age and selected birth cohorts, Canada.

(a) Women working full-time full-year

(b) All women

SOURCE See text.
CHART 8  Average income (1980 dollars), extrapolated and actual, of women with moderate schooling and living in metropolitan areas by age and selected birth cohorts, Canada.

(a) Women working full-time full-year

(b) All women

SOURCE  See text.
CHART 9  Average income (1980 dollars), extrapolated and actual, of men with advanced schooling and not living in metropolitan areas by age and selected birth cohorts, Canada.

(a) Men working full-time full-year

(b) All men

SOURCE  See text.
CHART 10  Proportion of women living as economic family persons, extrapolated and actual, by age for selected birth cohorts and marital statuses, Canada.

(a) Single

(b) Divorced

SOURCE  See text.
NOTE  Profiles not shown for cohorts with sample size under 100 persons.
CHART 11  Proportion of men living as economic family persons, extrapolated and actual, by age for selected birth cohorts and marital statuses, Canada.

(a) Single

(b) Divorced

SOURCE  See text.

NOTE  Profiles not shown for cohorts with sample size under 100 persons.