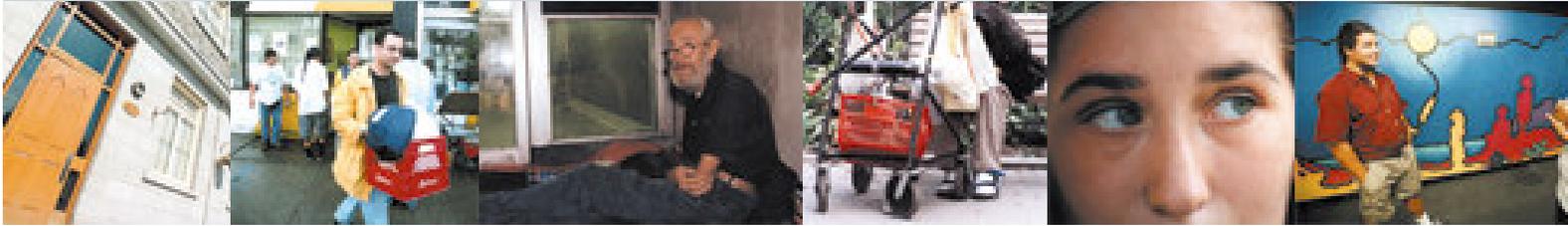


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Shelter Costs and Income in Canada: Social and Geographic Dimensions

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ABSTRACT

Shelter-cost/income ratios as a measure of affordability are important indicators of the relative risk of homelessness across different housing markets and over time. This report uses data on shelter costs and before-tax income from the Family Expenditure (FAMEX), Survey of Household Spending (SHS) and the 1991 and 1996 Public Use Microdata Files (PUMF), to measure affordability problems by two variables: households who spend more than 30 percent of income on shelter and households who spend more than 50 percent of income on shelter.

Findings indicate that affordability problems for Canada as a whole increased consistently over the last two decades, even during the 1990s when other economic indicators were improving. There are strong differences in regional and urban experiences. While British Columbia has consistently had the highest incidence of affordability problems, Ontario has experienced the most dramatic increases in the 1990s. Affordability problems are also most serious in the largest cities both in terms of level and degree of increase between 1991 and 1996.

Affordability problems are highly concentrated among low-income renters who fall below Statistics Canada's Low Income Cut-Off (LICO). Women are significantly more likely to experience problems, with older single women and younger female lone parents being the most vulnerable. The most disturbing finding is that, for the most vulnerable groups, affordability problems worsened during the 1990s, reflecting the larger context of increasing income inequality in Canadian society during this period.

EXECUTIVE SUMMARY

This report has been prepared to provide background information on the nature and extent of the risk of homelessness in Canadian society. While the immediate causes of homelessness for individuals reflect specific events and personal circumstances in which mental illness, alcohol and drug addiction and loss of social support play significant roles, the conditions in housing markets which produce limited supply and high prices for low quality housing also increase the likelihood of individuals experiencing homelessness. The underlying premise of the report is that declining affordability of housing is an *indicator* of a higher risk environment for the occurrence of homelessness

HIGHLIGHTS

Measuring Affordability

- Measures of affordability are tailored to the nature of available Canadian data across housing markets and over time.
- Two measures of affordability problems are defined: (i) households who spend more than 30% of before-tax income on shelter; and (ii) households that spend more than 50% of before-tax income on shelter.
- Long-term trends utilize data from the Family Expenditure (FAMEX) and Survey of Household Spending (SHS) files, while more detailed analysis of socio-demographic changes in individual housing markets uses the Public Use Microdata Files (PUMF) from the 1991 and 1996 Censuses of Canada. FAMEX/SHS include more detailed and comprehensive questions about housing costs and sources of income than in the Census; estimates of income and expenditure are more accurate from these surveys and the resulting estimates of the occurrence of affordability problems are lower than from the 1991 and 1996 Censuses. However, the relative ordering of affordability problems for different sub-groups is not affected in significant ways.

The National Picture

- According to the FAMEX/SHS surveys, the estimated number of household paying more than 50% of income on shelter increased by 59% from 560,000 to 891,000 between 1992 and 1999.
- Increasing shelter cost/income ratios are a long-term trend over the last two decades that, for the most extreme cases (those paying more than 50% of income for shelter), continued through the latter part of the 1990s.
- The trend in shelter/cost ratios takes place in the larger context of increases in income inequality over the last twenty years, a trend which has become more marked during the latter part of the 1990s.
- Housing affordability was highest among renters with almost 15% of renters paying more than 50% of before-tax income on shelter in 1999. 6% of owners with mortgages spent more than 50% of income on shelter while only 2% of owners without mortgages experienced this level of affordability problem.
- Affordability problems increased most for renters between 1992 and 1999. They also grew for owners with mortgages, while they stayed relatively constant for owners without mortgages.

Variation Across Sub-Groups

- Housing affordability is highly differentiated across socio-demographic sub-groups.
- Female household heads are more likely to have serious housing affordability problems than males. Using data from the 1996 Census, among those who are below Statistics Canada's Low-Income Cut-Off (LICO), women are twice as likely as men to spend more than 50% of income on shelter
- Single person households and lone parents, who are overwhelmingly female, both have lower incomes and high shelter-cost/income ratios than married couples. In 1999 almost 25% of unattached females and 20% of lone parent renters spent more than 50% of

income on shelter. Affordability differences between household types are driven by their income distributions.

- Single females with affordability problems are, on average, much older than members of other household types, reflecting financial disadvantage with respect to pensions and other benefits. In contrast, it is younger lone parents who are most likely to have affordability problems.
- Age plays an important differentiating role by household type. For married couples and lone parents, the majority of those at risk are younger households with the heads in the age range 25-44. Unattached males are somewhat older, while unattached females are the oldest group with more than 50% of the high ratio group being over 65.
- Further statistical analysis shows that, in addition to the age and household type effects previously reported, greater affordability problems are found among recent immigrants and recent movers.
- Particularly important is the role of labour force attachment. For those with full-time jobs, the risk of severe affordability problems is reduced by 83% relative to those who have no job. Having a part-time job reduces the risk by 46%.

Regional Differences

- There are regional differences in trends in shelter-cost/income ratios.
- British Columbia is consistently high and the Prairies low in terms of the percentage of renters with affordability problems. In British Columbia 17.8% of renter households spent more than 50% of income on shelter; the comparable figures were 14.8% in Ontario, 12.6% in Quebec, 11.0% in the Atlantic provinces and 9.9% in the Prairies.
- Ontario shows the most dramatic change from low percentages during the 1980s followed by dramatic increases during the 1990s. Ontario had the second lowest percentage of 6.4% of renters paying 50% or more in 1990 which increased to the second highest of 14.8% in 1999.

The Urban Focus

- The major concentrations of severe affordability problems are the in largest cities, especially among renters. In 1996, Montreal had the highest percentage with 12.2% of households below LICO paying more than 50% of income on shelter; Vancouver was second highest at 10.6% and Toronto was at 9.3%.
- The Census data shows that these problems escalated between 1991 and 1996 with the largest increases again in the major cities with Ontario cities leading the way.

Conclusions

- Affordability problems have increased steadily over the last two decades in concert with increases in income inequality both nationally and locally. In particular, the most disadvantaged, those who fall below the Low-Income Cut-Off (LICO), especially women, have suffered the greatest. Not only must policies be in place to address the problems of individual homelessness, but attention must also be given to incomes and housing policies which address the growing income inequality and limited supply of low income housing.
- The geographical variation in housing affordability is considerable both at provincial and city-specific scales. However, the ability to monitor the detailed changes in housing affordability problems is limited by the current data available. FAMEX/SHS do not provide geographical detail at the city level, while the Census data in PUMF are not as rigorous in terms of measuring income and shelter costs. More attention should be given to improving the survey sources for monitoring affordability over time.

SHELTER COSTS AND INCOME IN CANADA: SOCIAL AND GEOGRAPHIC DIMENSIONS

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INTRODUCTION

The goal of this report is to provide an analysis of changes in costs of shelter in Canada over the last two decades as a background to consideration of the prevalence of homelessness among the Canadian population in the 1990s. Homelessness is a complex, multi-faceted problem. Increases in homelessness in the last two decades reflect both structural changes in social policy and housing circumstances at both national and local levels as well as a broad range of events which affect the lives of individuals and families (Wolch et al., 1988). In particular, as housing consumes a greater proportion of income to the point at which severe stresses are placed on the ability to afford other necessities of life such as food, clothing, medicine, and transportation, individuals and households are at greater risk of becoming homeless.

The national surveys undertaken by Statistics Canada have not directly identified homelessness, although an attempt was made to do so in the most recent Census (2001). Nor do these surveys identify underlying events such a loss of job or spouse or conditions of mental illness or drug addiction in ways which allow populations at risk for homelessness to be readily identified. However, they do permit an analysis of the changing role that shelter costs have played in the financial lives of households at national, provincial and local levels.

In this report we provide a first cut at available data on the changing patterns of households experiencing significant shelter costs using standard measures of affordability, namely those households which spend more than 30 percent of before tax income on shelter and those who spend more than 50 percent of before tax income on shelter. These patterns are primarily structured by tenure, age and household type (including gender) for two different geographical breakdowns: the five major regions of Canada (Atlantic Provinces, Quebec, Ontario, Prairies and British Columbia/Territories) and the 14 largest Census Metropolitan Areas in 1996. We also provide more extended descriptions based on regression analyses using a broader range of socio-economic and demographic variables.

HOUSING AND HOMELESSNESS

- Homelessness is a complex, multifaceted problem.
- Changes in both structural factors (welfare policy, economic restructuring producing job loss and tight housing markets) and personal attributes and events (mental health, addiction, family crisis, job loss) contribute to explanations of homelessness.
- Both theoretical and empirical research indicates that tight housing markets, restricted supply of low quality housing and higher levels of income inequality are all associated with higher levels of homelessness.
- Declining affordability is an *indicator* of a higher risk environment for the occurrence of homelessness.

Although the definition of homelessness can be elusive if one moves beyond the simple notion of “an absence of a stable residence, of a place where one can sleep and receive mail” (Wolch et al., 1988), its growing social and political importance is undisputed. The predominant views in the literature affirm the multi-faceted causes of homelessness (Wolch et al., 1988; Crane and Warnes, 2000; Quigley et al., 2001), embracing both structural and personal conditions. When individual experiences of homelessness are analyzed, especially long-term as opposed to episodic homelessness, the importance of mental illness, alcohol and drug addiction and the lack of social support emerge (Crane and Warnes, op.cit). Specific instances are often precipitated by events such as the loss of spouse or parent, retirement or job loss, frequently associated with increased drinking or drug use and deteriorating health. The inability to keep up with rental payments and subsequent eviction follow.

While the validity of these direct chains of causality are widely recognized, the role of structural factors, including housing and housing policies, are both more indirect and significantly more controversial (Jenks, 1994; O’Flaherty, 1996; Troutman et. Al, 1999, Quigley et. al, 2001). Structural factors both increase the demand for lower cost housing and decrease the supply. Economic restructuring which changes the mix of skills demanded in local labour markets is often associated with significant local job losses (Wolch et al., 1988), financial hardship and increased pressures on households seeking affordable housing. With respect to housing, the role of tight housing markets is a frequently cited, though sometimes controversial contributor to homelessness. Jenks’ contention, for example, that no relationship exists between low vacancy rates, tight markets and homelessness is specifically countered by Park (2000) who shows that

one must consider both the geographical context of local markets and the distribution of vacancies within individual markets, focusing explicitly on lower quality housing. The need to consider the relation between housing and homelessness in individual housing markets is emphasized. The core issue then becomes whether city or location-specific market conditions create environments in which those events which precipitate homelessness become more likely. At best, then, housing market measures would be considered as *indicators of higher risk environments* in which personal problems, social isolation and events not directly related to housing are still more likely to be the immediate causes of homelessness.

The theoretical argument (O'Flaherty, 1995, Quigley et al., 2001) for the link between housing and homelessness is that if the price of low quality housing is higher than the price a given individual is willing to pay for that quality of housing, the individual will become homeless. Given a distribution of price quality preference curves for a low income population, the higher the price for low quality housing, the greater will be the likelihood that a given individual's preferences fall below that line and that homelessness will result. Greater homelessness will ensue when prices rise relative to incomes or when the supply of low-income housing is reduced.

Quigley et al. (2001) analyze the relation between homelessness and housing market conditions for 4 different measures of homelessness in several samples of metropolitan areas in the United States and counties in California. The empirical evidence shows that tighter housing markets and high rent-to-income ratios are associated with significant positive effects on measures of homelessness. The analysis also indicates that areas with higher levels of income inequality experience higher levels of homelessness as the price of lower quality housing reflects the pressure of demand from more affluent households, both increasing the price and reducing the supply of lower quality housing.

O'Flaherty (1995) and Park (2000) also emphasize the importance of the supply of low quality housing. Park indicates that vacancy rates per se can be misleading. In a number of markets in the U.S., vacancy rates at the low end of the rental market have increased (units renting for less than \$250) but the supply of such units has declined significantly. The limited supply at a high price is a contributing factor to homelessness. Troutman et al. (1999) also notes that specific housing policies such as rent control which makes renting unattractive to the owner of the building or the imposition of high building standards which prevents housing from falling

in quality to meet demand may also have direct impacts on limiting supply of low quality housing.

Both from a theoretical and empirical perspective, the argument is persuasive that changes in the affordability of housing is an important *indicator* of changes in *the risk of homelessness* in a given market. Except when changes in affordability are extreme, they are unlikely to be direct causes of homelessness for an individual or household, but they do mediate the response to other personal characteristics and events and affect the likelihood that homelessness will result.

METHODOLOGICAL ISSUES IN THE ANALYSIS OF AFFORDABILITY

- Measures of affordability are tailored to the nature of available data across housing markets and over time.
- Primary focus is on households spending more than 30% and more than 50% of before-tax income on shelter.
- Long-term trends utilize data from the Family Expenditure (FAMEX) and Survey of Household Spending (SHS) files, while more detailed analysis of socio-demographic changes in individual housing markets uses the Public Use Microdata Files (PUMF) from the 1991 and 1996 Censuses of Canada.
- Bi-variate statistics are used to identify the characteristics of households spending more than 30% and more than 50% of their income on shelter.
- Regression analysis is employed to assess the simultaneous effects of a wide range of factors on measures of affordability.

Measuring affordability

The primary task is to identify those conditions which can be linked to higher risk of homelessness. One approach to identifying those experiencing housing difficulties is that of Canada Mortgage and Housing Corporation which defines households in “core need”. The official definition of households with severe housing problems considers the economic circumstances of households, their composition and the nature of the housing market. Households in “core need” are ones that cannot obtain adequate and suitable housing in their city by paying a third of their income in rent. Adequate is defined by repair status and suitable is defined in accordance to family type and the number, age and sex of children.

While this approach has considerable merit, it is also very demanding of data, particularly for comparative purposes in local markets and for measuring trends over time. The more traditional approach has been to summarize high levels of shelter costs as ‘30 percent of before tax income spent on shelter’ and ‘50 percent of before tax income spent on shelter’. The 30 percent figure has been accepted as a rule of thumb ratio defining the amount of money a household can afford to spend on housing.¹ The analysis shows that in almost all cases the only difference between using these two ratios is in the level of the problem, the incidence and distribution across the geographic, demographic and ethnic categories remains the same.

¹ It used to be 25 percent and this ratio was established by bankers simply asserting that it is reasonable to a household to spend one-weeks earnings for a month’s supply of housing.

Some would argue that it is more important to measure affordability in relation to after-tax income as public policy often addresses concerns of low-income households via tax policy. However, the basis for any analysis depends on the relation between questions being asked and available data. The emphasis in this report is on comparisons both over time and across housing markets with particular emphasis placed on the ability to identify levels of risk for different socio-demographic segments of the population. Strengths and constraints of different data sources lead to selection of different sources to address different questions and we need to consider available data as a methodological issue.

The Data Files

We were asked to provide data on the changing patterns of shelter costs in Canada, with particular emphasis placed on three issues:

- a. What are the socio-demographic characteristics of those with high shelter-cost/income ratios?
- b. To what extent are high shelter-cost/income ratios a metropolitan issue and how do these patterns vary across CMAs in Canada?
- c. How have patterns varied during the 1990s with particular emphasis on the latter part of the decade?

The need to provide both geographic and socio-demographic detail dictate the sources of data we can use. We were limited to available public use data files and decided to use three major sources:

- i) The Family Expenditure files (FAMEX) were collected on a regular basis for over two decades. We used the surveys for 1982, 1984, 1986, 1990, 1992 and 1996². Each is a national stratified survey of approximately 10,000 households which asks detailed questions about household income and household expenditures, including shelter.

² 1994 was not used as the survey for this year only collected data from urban areas.

- ii) The Survey of Household Spending (SHS) began in 1997 and is an annual survey with approximately 18000 households per year. It replaces the FAMEX and contains very similar information although some definitions have been modified, especially those which relate to the treatment of mortgage expenditures.

The strengths of both FAMEX and SHS are that they provide the most accurate data on shelter costs available and the series extends up to 1999 (the SHS file for 1999 is built on a survey conducted in January to March in 2000 and was only released in May of 2001). Both before-tax and after tax income data are provided. The two series together provide the basis for assessing the national picture over the last two decades. From a geographic perspective the detail is limited, largely because of the sample size. Province can be identified as well as urban areas over 30,000 but specific CMAs cannot. In addition, the sample size and the variables included limit the amount of detail that can be extracted on socio-demographic characteristics.

- iii) The Public Use Microdata Files (PUMF) from the 1991 and 1996 Censuses. These files are a simple random sample of the census records. We have used the household files which contain approximately 300,000 records in 1991 and 1996.

The strengths of the PUMF derive from their very large size and rich socio-demographic detail. Size permits individual CMAs to be analyzed and cross-tabulations of socio-demographic variables (household type by age of primary household maintainer by education, for example) by shelter costs to be constructed. The main drawback is in the fact that income is self-reported without the requirement that its use be broken down in detail. As a result, the income statistics are not as accurate as the ones in the FAMEX files and systematic errors are expected. The 2001 PUMF data will not be available before 2003.

We, therefore, use the FAMEX and SHS data to set the absolute levels of severe affordability problems and the PUMF to describe in greater detail the distribution of the problems across cities and household characteristics.

In PUMF only before-tax income can be measured. While we can measure after-tax income in FAMEX/SHS, the overall story regarding the long-term trends ³ and the differentiation

³ Appendix A provides a comparison of trends in shelter cost/income ratios using both before-tax and after tax incomes. While the after-tax rates are necessarily higher, the long-term trends are the same and both function as appropriate indicators of change.

by age, gender and household type remain the same, although the numbers of those with high shelter costs increase.

In FAMEX/SHS we use the shelter costs for the principal residence. As a comparator for tenants we also use the rent paid as a separate measure. One area of difficulty is the costs of shelter for owners with mortgages. The SHS includes the payment of principal on the mortgage whereas FAMEX excludes it and regards this payment as forced savings. The earlier FAMEX shelter figures have been adjusted by adding the mortgage principal reduction for each year.

The definitions of the affordability problems within the PUMF that are thought to correlate with the risk of becoming homeless are measured by the housing expenditure to gross income ratio. High ratios do not necessarily reflect affordability problems as households may choose to spend more to buy a house or to pay off a mortgage or to rent a luxury suite. To censor the households paying large proportions of their income on housing out of a free choice, we further constrain the definition of the households at risk by limiting the selection to the households in the following way:

1. Identify all households paying more than 30 and 50 percent of their income on housing.
2. From this group, remove all the households that are NOT defined as having incomes below the official low-income cutoff (LICO).
3. From this group, exclude households whose primary head is a full-time student.
4. Exclude all homeowners who do not have a mortgage.

The residual is the population that we consider to be at risk of homelessness. The problem households are defined as: (i) being “poor” when considering their city, household size and income; (ii) having to pay more than half of their pre-tax dollars on housing; (iii) they are not full-time students; and (iv) they do not own a home outright. By excluding the households with incomes above the LICO who spend more than half of their income on housing and by excluding students, the numbers and ratios presented in this report represent the lower boundary of the estimate of the number of Canadians with severe housing problems.

We have incorporated gender into the definition of household type. The shelter cost variation is concentrated between four household types: Single Males living alone; Single Females living alone; Married couples (with and without children), and Lone Parents. The overwhelming number of lone parents are female and the number of male lone parents is too small in FAMEX/SHS to be considered separately.

Analysis

The analysis is developed through two stages. The first produces bi-variate statistics on the proportion and also the number of households that are at risk given the 30 and 50 percent of income spent on housing. It considers the geography of the problem, the demographic and gender composition, the immigration status and the education and employment status of the primary maintainers. Both data sets are used for the overall statistics but only the 1991 and 1996 PUMF can offer the more refined breakdowns.

The second stage of the analysis looks at the factors simultaneously to allow us to see the unique contribution of each. This work involves the use of logistic and probit regressions (Kleinbaum, 1994). In logistic regression, the log of the odds⁴ of being in a given category (such as spending more than 50 percent of income on shelter) is regressed on a set of independent variables (such as age, household type, income, immigrant status and region of residence). The parameters of the estimated model are used to estimate the marginal effect of individual variables on these odds, controlling for the effects of other variables. Thus if the parameter for lone parent is 1.342 (Table 2a below), then $\exp(1.342) = 3.828$, indicating that being a single parent increases the odds of experiencing severe affordability problems by almost 4 times relative to the reference category, which is married couple, provided that all other factors remain constant.

⁴ If p is the probability of being in a category, the $\log [p/(1-p)]$ is the log of the odds.

SHELTER COST/INCOME RATIOS AT THE NATIONAL LEVEL

- Income inequality increases during the 1990s even as economic performance improves.
- Increases in numbers of low-income households particularly evident in the largest cities.
- Renters have significantly higher proportions with affordability problems than owners.
- Among owners, those without mortgages have the lowest incidence of affordability problems.
- Increasing shelter cost/income ratios have been pervasive for the last two decades.

The evolution of shelter cost/income ratios takes place within the larger context of economic and social trends in Canadian society. Of particular importance to the present discussion is that as the economy improved during the 1990s, not only did average incomes increase but so did the degree of income inequality (Figure 1).

**Figure 1. Trend in Gini Coefficients⁵ in Canada:
Economic Family Income, After-Tax, 1989-1998**



Source: *Statistics Canada 2000*

The increase in inequality is particularly noticeable in the latter part of the decade. Increasing inequality can arise from a variety of situations, including increases in the more affluent tail of the income distribution (Moore and Pacey, 2001). However, the evidence is that a considerable part of the increase is likely to stem from increasing proportions of the population that lie below Statistics Canada's Low Income Cut-Off (LICO)⁶. Using PUMF, Table 1 shows that between 1991 and 1996, the proportion of the population below the LICO increased along with inequality. This increase was predominantly a metropolitan issue and was concentrated among those in the labour force years and not among the elderly. The CMAs in Ontario also experienced more consistent increases than the rest of the country.

The suggestion from these observations is that the economically disadvantaged continued to experience problems although the economy was rebounding from the downturn at the beginning of the decade. The data from the 2001 Census will be very important in assessing whether these trends continued.

The Long Term Trends in Shelter Costs

Over the last two decades there have been nine implementations of FAMEX AND SHS. Data from these surveys were used to identify four series of shelter cost/income ratios from which the graphs in Figure 2 were constructed. Tenure is a fundamental differentiator of the incidence of high ratios. Renter households have the highest percentages of households paying more than 30 percent and more than 50 percent of income on shelter. Owners with mortgages are less likely to experience these stresses while the incidence among those without mortgages is both relatively low and has stayed relatively stable over the period from 1982-1999.

The significant issue here is that both the 30% and the 50% rates have risen significantly over the 17 years. The 30% rates have virtually doubled for renter households while the 50% rate has tripled from 4.5% to 13.6% for the same group. After a decline in 50% rates among owners with mortgages during the mid and late 1980s, the 50% ratio for this group increased from 3.0% to 5.9% during the 1990s. There is some indication of a downturn between 1998 and 1999 for the

⁵ Gini coefficients represent the difference between a uniform distribution of population across the income range and the actual distribution. A value of 0 is a uniform distribution while values approaching 1 indicate that the majority of income is concentrated in a small proportion of the population.

⁶ LICO is a measure of relative deprivation; it is not a measure of poverty.

30% rates, which are statistically significant, but this is not the case for the 50 % rate. The trends in high shelter cost ratios did not reflect the buoyancy of the economy.

TABLE 1: THE PERCENTAGE OF THE POPULATION BELOW STATISTICS CANADA'S LOW INCOME CUT-OFF (LICO) BY CMA AND POPULATION AGE - 1991 AND 1996

<i>CMA</i>	<i>% below LICO 1996</i>	<i>CMA</i>	<i>Change in % below LICO 1991-1996</i>
Population 18-64			
Montreal	25.2%	Toronto	6.7%
Sherbrooke/Trois-Rivières	23.0%	Vancouver	6.0%
Quebec	21.6%	Montreal	5.7%
Vancouver	21.5%	Ottawa-Hull	5.4%
Winnipeg	20.5%	Quebec	4.8%
Edmonton	20.2%	London	4.8%
Toronto	19.3%	Halifax	4.7%
Calgary	18.9%	CANADA	4.3%
CANADA	18.7%	Hamilton	4.2%
Regina/Saskatoon	18.4%	Kitchener	4.1%
Ottawa-Hull	18.2%	St.Catherines	4.0%
London	17.1%	Edmonton	3.8%
Hamilton	16.6%	Winnipeg	3.8%
NON CMA	16.5%	Oshawa	3.5%
Halifax	16.5%	Sudbury/Thunder Bay	3.2%
Victoria	15.5%	Sherbrooke/Trois-Rivières	3.1%
St.Catherines	14.9%	Calgary	3.1%
Kitchener	14.6%	NON CMA	2.9%
Sudbury/Thunder Bay	14.5%	Regina/Saskatoon	2.0%
Windsor	14.2%	Victoria	1.7%
Oshawa	11.2%	Windsor	1.2%
<hr/>			
<i>CMA</i>	<i>% below LICO 1996</i>	<i>CMA</i>	<i>Change in % below LICO 1991-1996</i>
Population 65 and over			
Quebec	34.2%	Oshawa	4.0%
Montreal	32.7%	Toronto	2.3%
Winnipeg	27.0%	Sudbury/Thunder	2.0%
Vancouver	25.4%	NON CMA	0.7%
Toronto	23.4%	Hamilton	0.5%
Sherbrooke/Trois-Rivières	23.4%	London	0.5%
Hamilton	23.0%	Kitchener	0.5%
Edmonton	21.9%	Vancouver	0.4%
Calgary	21.7%	CANADA	0.3%
CANADA	19.0%	Windsor	0.2%
Ottawa-Hull	18.2%	Regina/Saskatoon	0.1%
Sudbury/Thunder	17.1%	Quebec	-0.5%
Halifax	15.7%	Montreal	-0.8%
Windsor	15.1%	St.Cath./Niagara	-1.0%
Regina/Saskatoon	14.7%	Ottawa-Hull	-1.1%
Oshawa	14.2%	Victoria	-2.1%
NON CMA	13.4%	Sherbrooke/Trois-Rivières	-2.6%
St.Cath./Niagara	13.0%	Halifax	-2.8%
Kitchener	12.0%	Edmonton	-2.8%
London	11.4%	Winnipeg	-2.9%
Victoria	10.6%	Calgary	-4.7%

Source: Census of Canada Public Use Microdata Files (PUMF) 1991 and 1996

FIGURE 2a: PERCENT OF HOUSEHOLDS PAYING MORE THAN 30 PERCENT OF INCOME ON SHELTER: 1982-1999

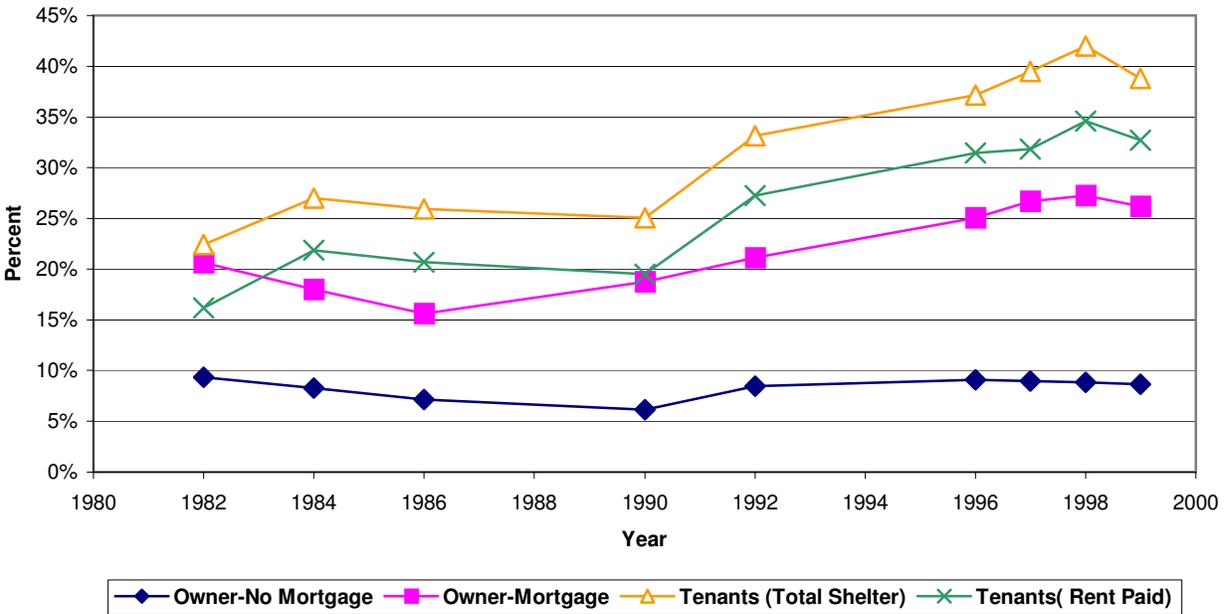
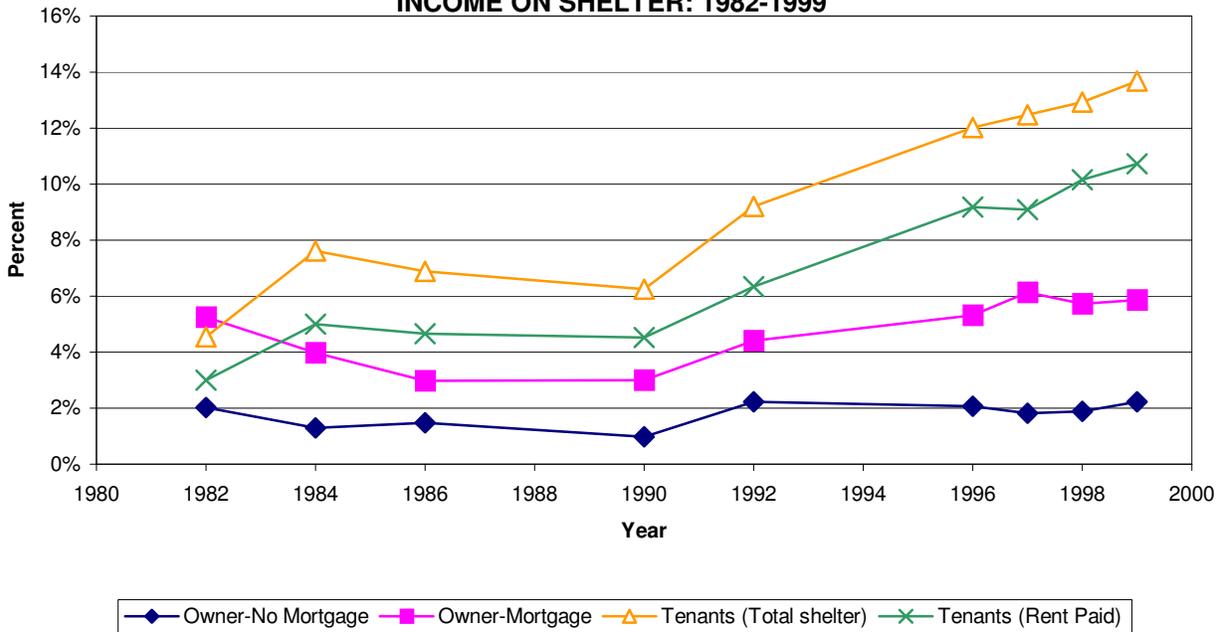


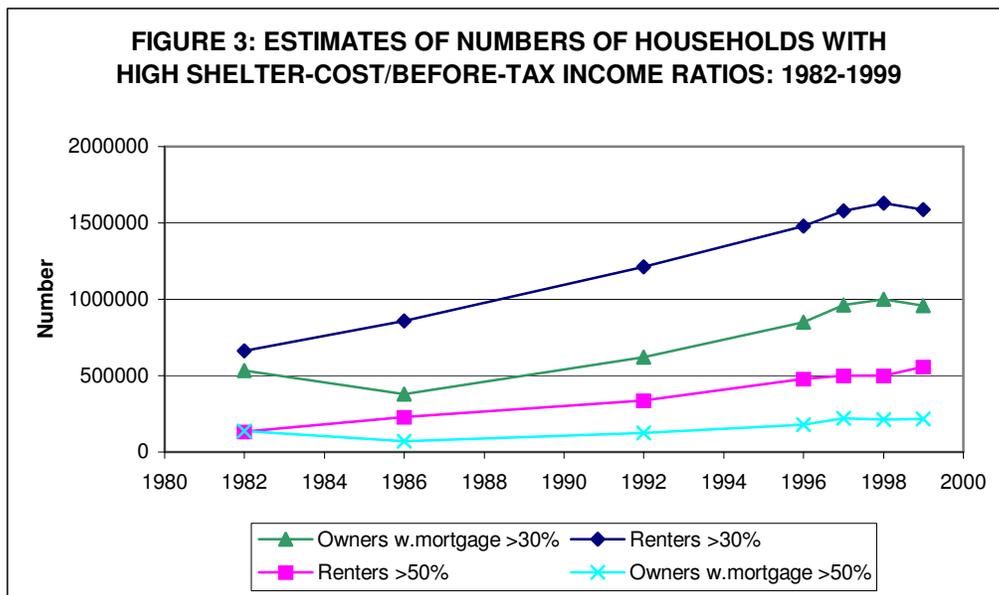
FIGURE 2b: PERCENT OF HOUSEHOLDS PAYING MORE THAN 50 PERCENT OF INCOME ON SHELTER: 1982-1999



Source: FAMEX, 1982, 1984, 1986, 1990, 1992, 1996; SHS 1997, 1998, 1999

Absolute Growth in Numbers

The escalation in rates at a time when the overall population and numbers of households has continued to grow means that the total numbers of those with high relative housing costs has also grown apace (Figure 3). Since 1982, the number of renter households exceeding the 30% ratio has more than doubled while the number of owners with mortgages exceeding this ratio have increased by 80 percent. For households paying more than 50%, the number of owners with mortgages has increased by 58 percent, while renter households have more than quadrupled, indicating clearly where the major problem is located. At the same time the total population has increased by just under 20 percent.



Source: FAMEX, 1982, 1986, 1990, 1992, 1996; SHS 1997, 1998, 1999

Shelter/Cost Profiles Using the Public Use Microdata Files (PUMF)

The effect of the screening that limits our definition of the at-risk population is illustrated in Figures 4 and 5. The first two vertical bars in Figures 4 show the proportion paying more than 30 percent of their before-tax income on housing before the numbers have been screened in the way described in the last paragraphs. The first column shows the 1991 number of households and

the next adjacent column shows the corresponding 1996 numbers. In Figure 5 we show the 1996 rates but disaggregate the proportions by the sex of the primary household maintainer.

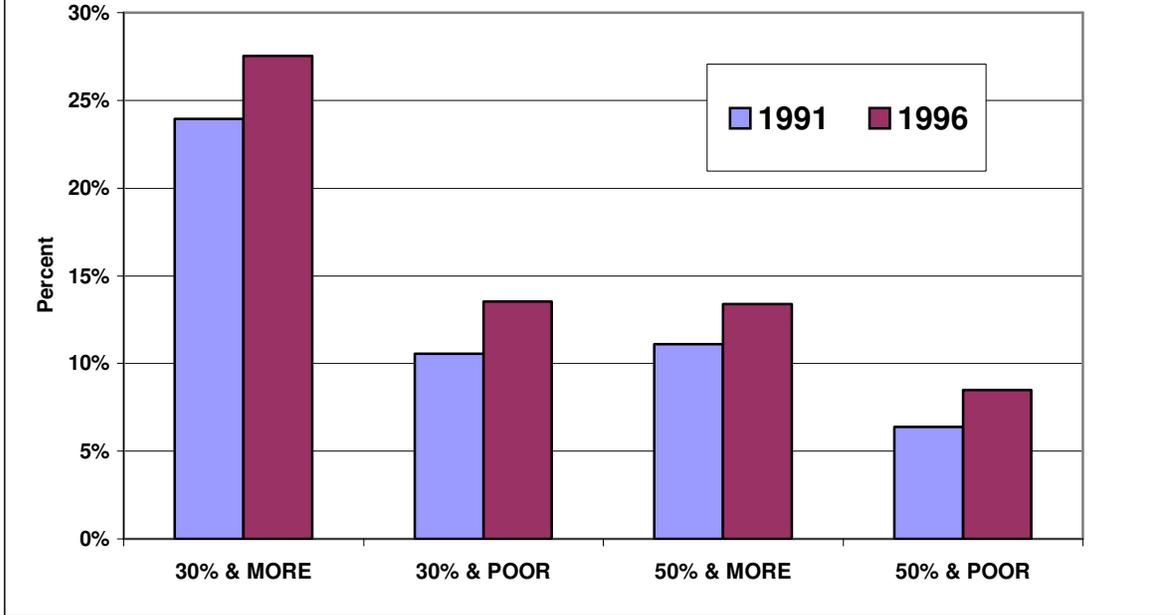
Figure 4, and in fact all the statistics presented in this report from the different data sources, show that, regardless of the definition used to identify the households at risk, the prevalence of problems increased substantially between 1991 and 1996.⁷ In 1991, the Census estimates that 23.9% of Canadian households (2.171 million) spent more than 30 percent of their pre-tax income on housing and the proportion had grown to 27.5% (2.976 million) by 1996. Figure 4 shows that 13.4% of households (1.448 million) were spending more than a half of their income on housing in 1996. After applying the screening criteria listed above, the 1996 percent of poor households spending more than a half of their income on housing is 8.5% (916,560). These are the households that have the most severe housing affordability problems and both the number and the proportion grew through the first half of the 1990s and the data from FAMEX/SHS show that the size of the at risk population continued to grow through the late 1990s.⁸

It is important to note that the FAMEX files and PUMF generate somewhat different numbers, even if the socio-demographic structures and trends are very similar. The PUMF data produce higher estimates than FAMEX. In 1991, the PUMF files indicate that the total number of households prior to screening spending more than 30 percent on shelter is 2.976 million while FAMEX estimates the number at 2.674 million. A larger discrepancy exists for those over 50 percent with the Census recording 1.448 million and FAMEX 0.746 million. The primary reason for these differences is attributable to way in which the data are collected. FAMEX (and also SHS) ask a large number of detailed questions about sources and amounts of income and expenditures while the Census asks relatively crude questions about the previous years income and housing costs. Although no direct comparisons are possible, the results suggest that there may be a strong tendency to underreport incomes in the Census, which would lead to an overestimation of the shelter cost/income ratios. However, there is no reason to believe that the bias is systemic to the degree that it would fundamentally change the structure of differences between population sub-groups.

⁷ The analysis shows that in almost all cases the only difference between using these two ratios is on the level of the problem, the distribution across the geographic, demographic and ethnic categories remains the same.

⁸ Discussions with Toronto experts on homelessness (Ann Golden) suggest that the size of the homeless population has increased substantially in the last two years.

FIGURE 4
PERCENT SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER BY LOW
INCOME CUTOFF STATUS: 1991 AND 1996



Source: PUMF 1991, 1996

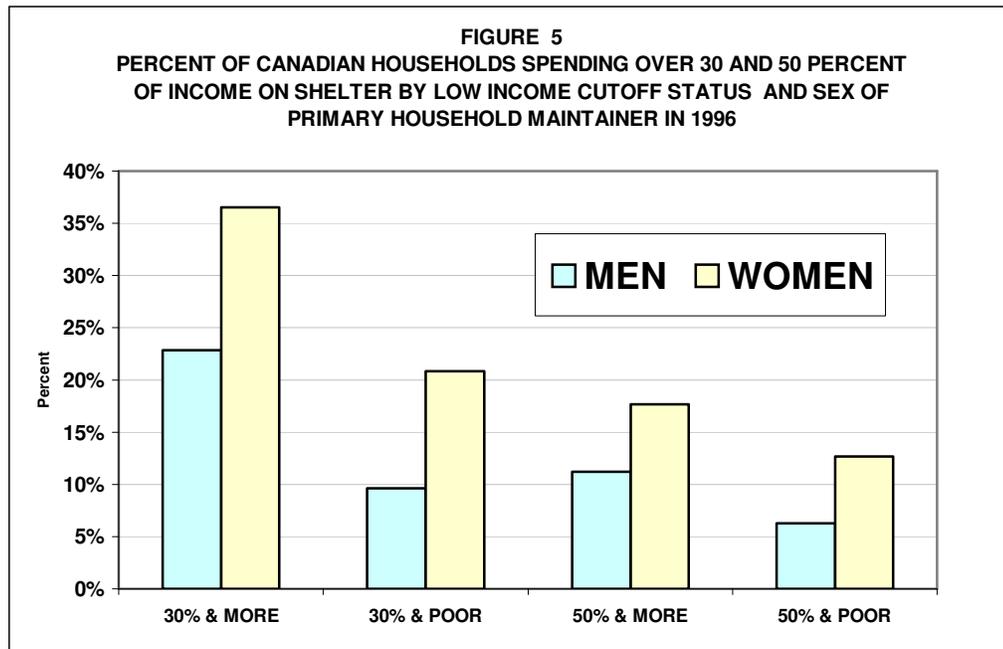
Variations in Affordability between Sub-Groups

- Housing affordability is highly differentiated across socio-demographic sub-groups.
- Female household heads are more likely to have serious housing affordability problems than males.
- Single person households and lone parents, who are overwhelmingly female, both have lower incomes and high shelter-cost/income ratios than married couples. Affordability differences between household types are driven by their income distributions.
- Single females with affordability problems are, on average, much older than members of other household types, reflecting financial disadvantage with respect to pensions and other benefits.

Gender Differences

The screening that is carried out to define the “at risk” population in PUMF makes one important difference in the profiles as illustrated in Figure 5; it changes the gender mix within the most severely affected population. In both the 30 and 50 percent groups that are not screened for their LICO status, the number of households with male primary maintainers exceeds those headed by women. When the numbers are restricted to the households below LICO, non-student population, the relative number of female-headed households exceeds those with male primary heads. To an extent, this is due to the way primary heads are defined in households formed by married or common-law households. However, our analysis of the most seriously affected group within the population at risk, the renters who are not couples, the single person households, the single parents or the non-family groups, shows that female-headed households are the majority in the population at risk.⁹ In 1996 and by all groupings, women-headed households with affordability problems exceed the number of male headed non-couple households and the gender disparity is greatest for those who lie below LICO.

⁹ The statistics are presented in the figures attached in appendix to the report. Breakdowns by CMA are in the CD attached to the report. The 1996 breakdowns also show that among the renter households with the most severe affordability problems 357,588 are headed by women and 179,676 by men.



Source: PUMF (Households) 1996

Women are clearly more likely to be at risk for high shelter cost/income ratios but their status is further affected by their degree of attachment to the labour force. Although the number of observations in FAMEX/SHS is limited, more detailed statistical analysis using PUMF shows that full or part-time employment further reduces the likelihood of paying more than 50% of income on shelter. Males are more likely to be employed in all sub-groups.

The Influence of Household Type

High shelter-cost/income ratios are concentrated among lower income groups and those segments of the population with lower average incomes are more likely to experience proportionally higher shelter costs. The income distributions and average incomes of the four main household types are quite different (Figure 6). While unattached males and females and lone parents are concentrated in lower income groups, married couples have a more broad-based income distribution with relatively few in the low-income categories. Given that the likelihood of paying more than 50% of income for shelter varies little by household type once income

FIGURE 6: PERCENT DISTRIBUTION OF HOUSEHOLDS BY INCOME BY HOUSEHOLD TYPE IN 1999

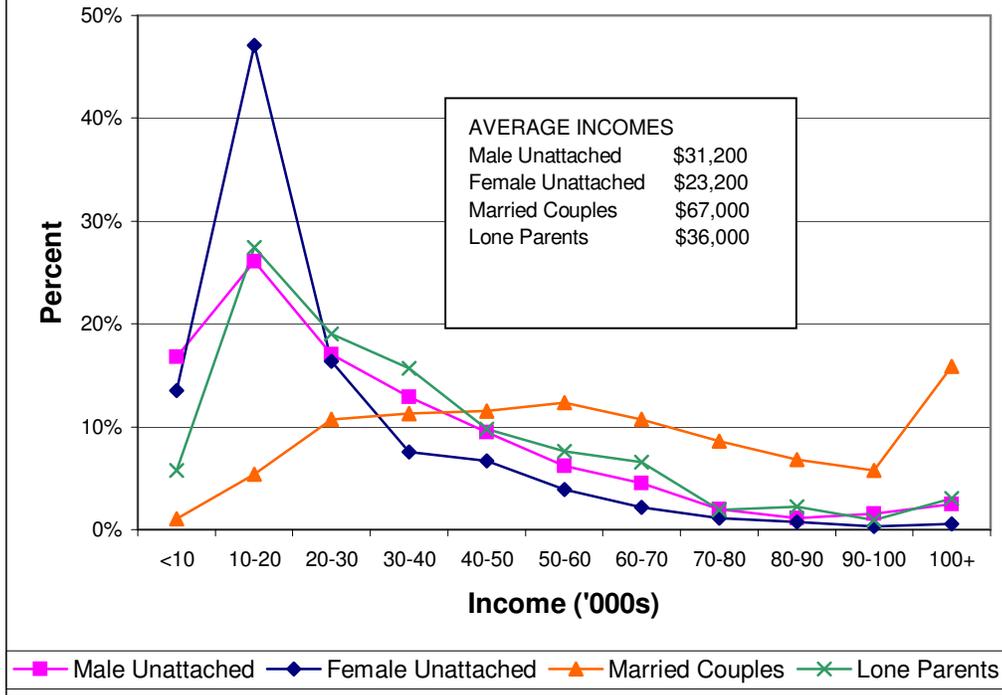
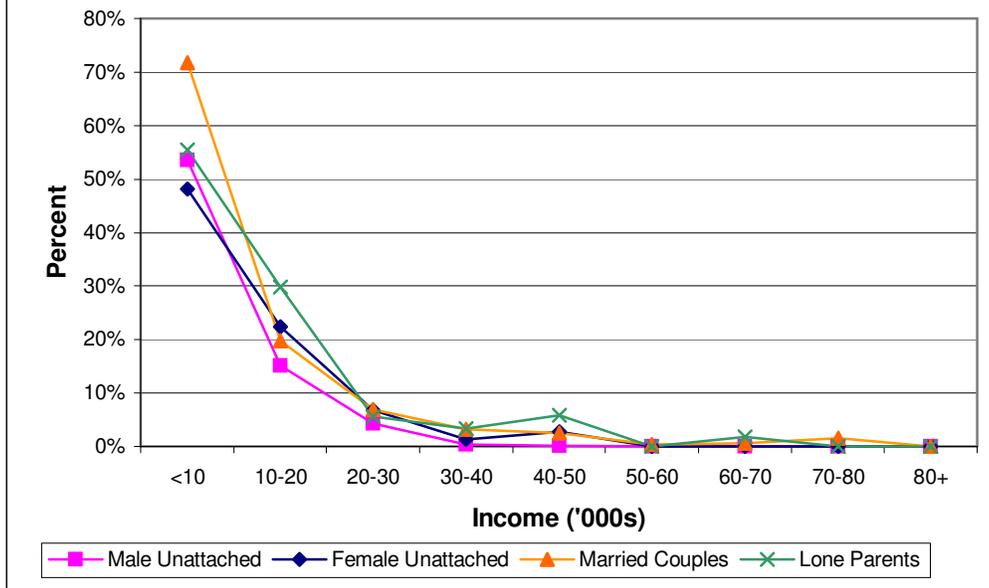
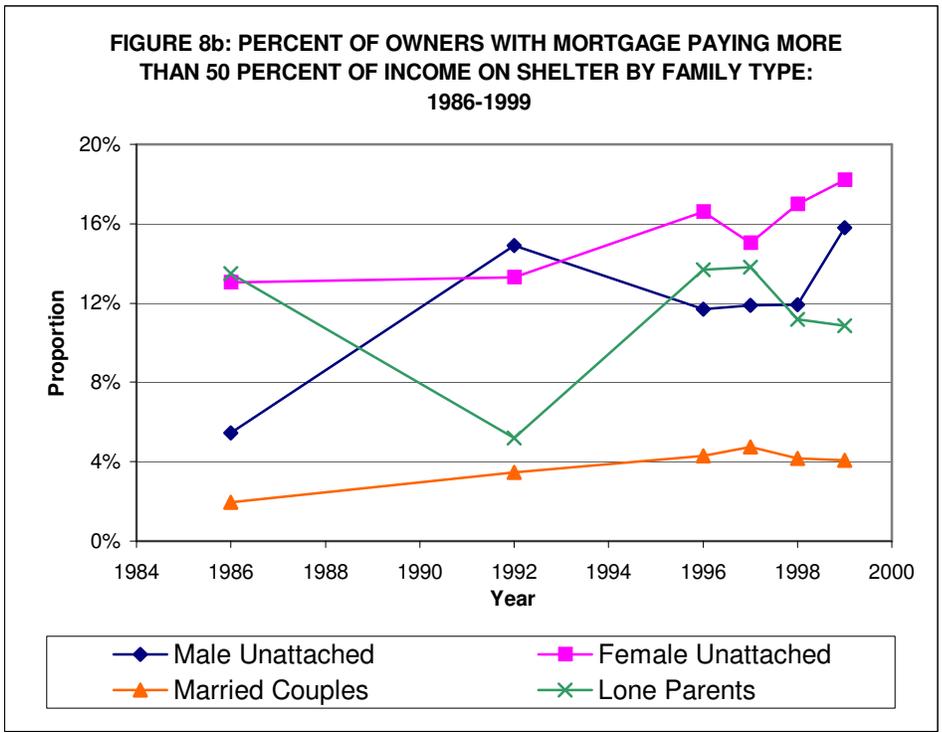
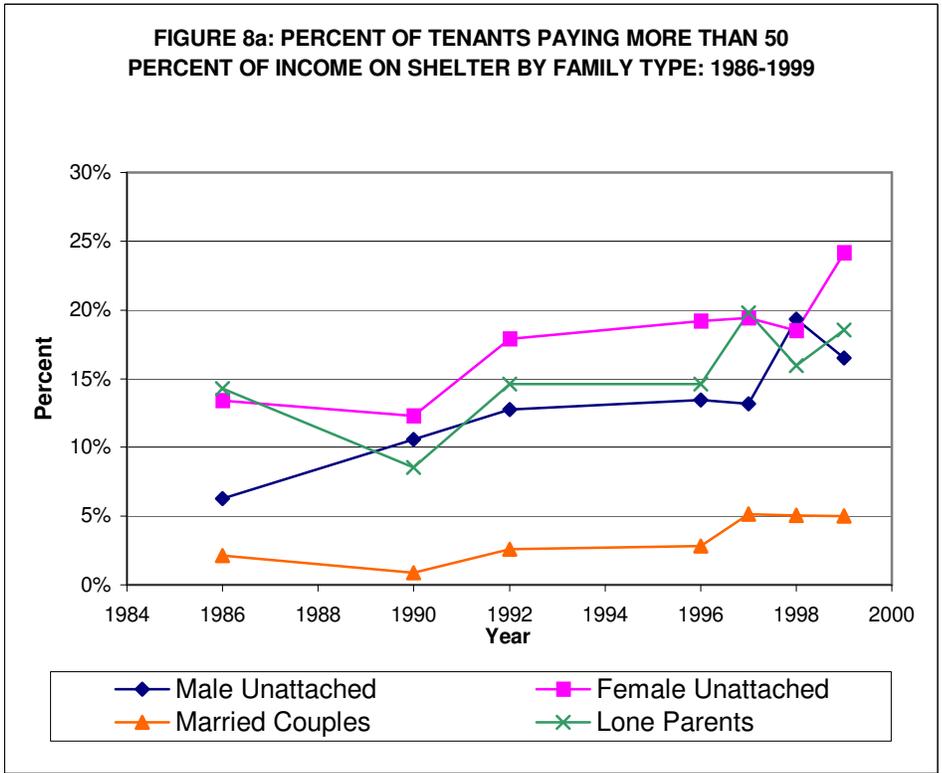


FIGURE 7: PERCENT PAYING MORE THAN 50% OF INCOME ON SHELTER BY HOUSEHOLD TYPE IN 1999



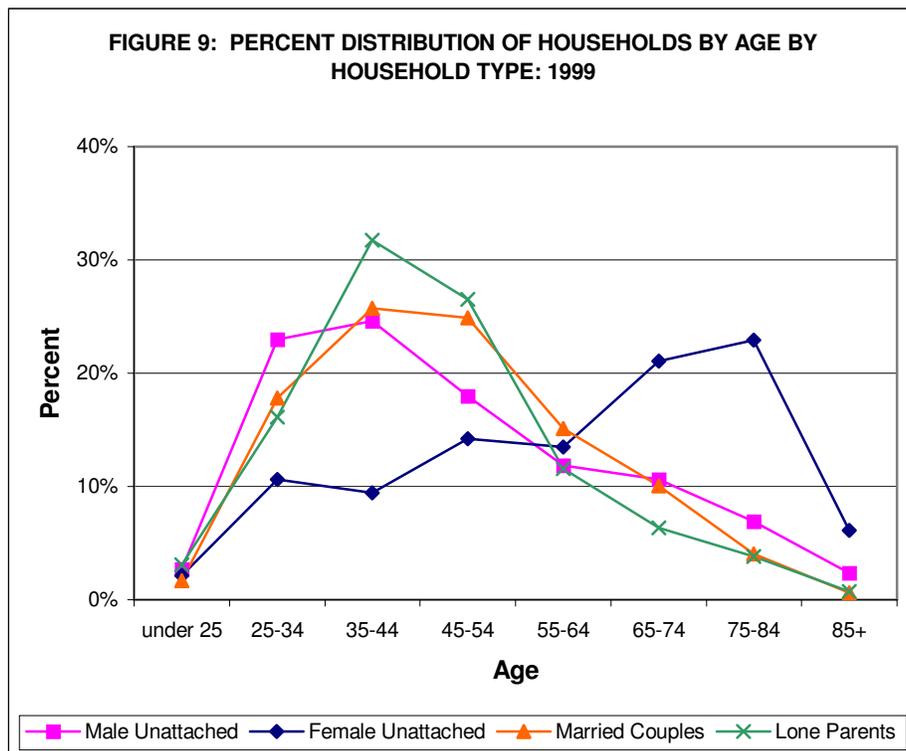
Source: FAMEX 1986, 1992, 1996; SHS 1997, 1998, 1999



Source: FAMEX 1986, 1992, 1996; SHS 1997, 1998, 1999

is controlled (Figure 7), the proportions of each household type that pay more than 50% of income for shelter is essentially driven by the differing income distributions (Figure 8). Married couples are far less likely to experience these serious affordability problems in relation to the other three categories, partly because they are more likely to have two income recipients.

Although single males and females and lone parents are each high-risk groups with respect to high shelter cost/income ratios, they have very different age distributions (Figure 9). Unattached males, married couples and lone parents have similar age structures with lone parents somewhat more concentrated in the ages 35-54 and unattached males having higher proportions at the youngest and oldest ages. Unattached females, in contrast, are a much older group with just over 50% in 1999 being over 65. The overwhelming majority of this group is no longer in the workforce and many depend financially on pensions and a wide range of government benefits.



Source: SHS 1999

Profiles of those with high shelter cost/income ratios

- The general structure of those with high affordability problems has remained the same through the 1990s.
- All groups of renters have experienced significant increases in numbers.
- Owners with mortgages have also shown marked increases.
- Married couples and lone parents are noticeably younger than unattached males and females.

The discussion so far has identified the likelihood that households with different characteristics will have high shelter cost/income ratios. As we saw in Figure 3 the different propensities across groups are also associated with increasing absolute numbers with high ratios. What does this sub-population with high ratios actually look like?

Figure 10 represents the distribution of households paying more than 50% of income for shelter by tenure and household type. The overall pattern has stayed roughly the same during the 1990s (from 1992-1999) although the numbers have increased. All categories of tenants have increased significantly with the greatest increases occurring among unattached males and females. There has also been noticeable growth among owners with mortgages, although in this case the larger increases are for married couples and lone parents. Owners without mortgages make only a small contribution to the overall profile.

The age distributions of renters and owners with mortgage exceeding the 50% ratio (Figure 11) does not provide any real surprises given the known differences in age distributions by household type (Figure 9). The married couple and lone-parent renter households are younger than unattached males, and unattached females are the oldest group. Very few households headed by someone under 25 are in this group. The 'owners with mortgage' profile is dominated by younger married couples.

FIGURE 11a: AGE DISTRIBUTION OF RENTER HOUSEHOLDS PAYING MORE THAN 50% OF INCOME FOR SHELTER BY HOUSEHOLD TYPE: 1999

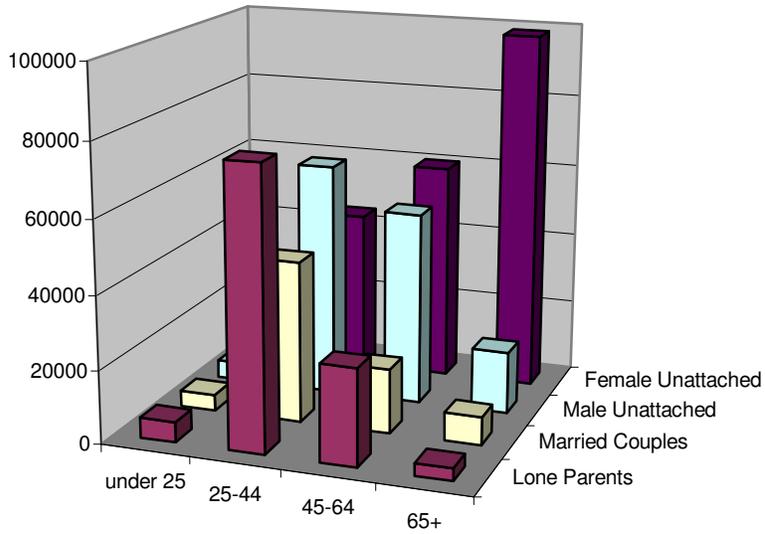
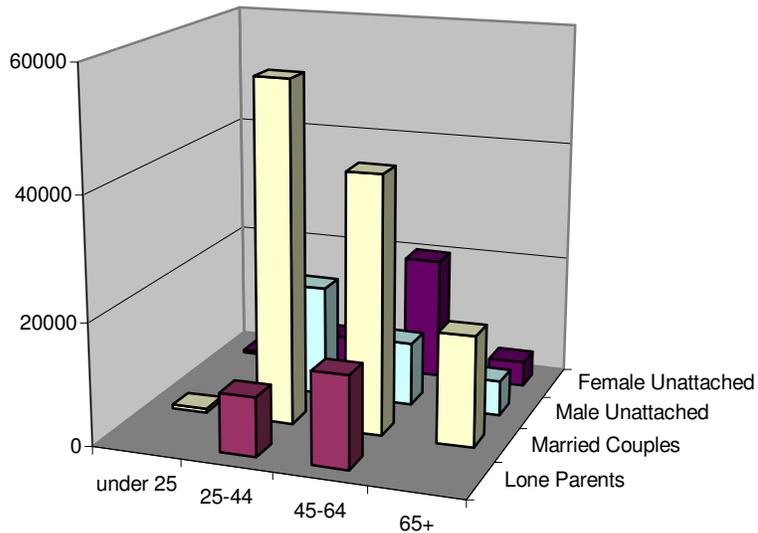


FIGURE 11b: AGE DISTRIBUTION OF OWNER HOUSEHOLDS WITH MORTGAGES PAYING MORE THAN 50% OF INCOME FOR SHELTER BY HOUSEHOLD TYPE: 1999



Are the yearly differences at the end of the decade significant?

- Logistic regression is used to test whether decline in affordability measures for renters in 1999 is significant.
- Decline in likelihood of paying more than 30% of income on shelter between 1998 and 1999 is small but statistically significant.
- Decline in likelihood of paying more than 50% of income on shelter between 1998 and 1999 is not statistically significant.

While Figures 2 and 3 show some evidence of a downturn in the 30 percent rate from 1998-1999, it is difficult to assess whether the decline is significant in terms of the incidence of high shelter cost/income ratios without controlling for the composition of the samples which also change. We therefore ran a series of logistic regressions using a file that we created which merged the SHS files for 1997, 1998 and 1999. Spending more than 30% of income and more than 50% of income on shelter were used to define two binary dependent variables that were regressed on variables representing household type (compared to married couples), region (compared to Ontario) and age¹⁰. A second panel added the age distributions of each household type (relative to the age distribution of married couples).

Table 2a shows the results of the two regressions for the 30% shelter cost/income ratios for renters. In the table, the direction and significance of the individual parameters are of interest as are the odds ratios, although interpretation of the odds ratios in the second panel must be undertaken with care. In the first panel, only main effects (i.e. no interactions) are included in the model. All but two parameters are significant; the odds ratios for lone parents, for example, indicates that, after controlling for province, age and year of survey, lone parents are 3.8 times as likely to pay more than 30% of their income on shelter as married couples (the reference group). In fact, all four household types have significantly higher rates than married couples with single females and lone parents having the highest. Quebec and the Prairies have lower rates than Ontario while there is no significant difference between Ontario, BC/Territories and the Atlantic provinces.

¹⁰ The observations were weighted by the population weights rescaled to a mean of 1 for the analysis group (namely renters). This is the procedure recommended by Statistics Canada (1997, p.107)

Although the signs of the parameters for 1997 and 1998 (compared to 1999) are positive indicating that rates were higher in the two former years, the difference for 1997 is not significant at all, while that for 1998 is marginally significant at the .007 level. This suggests that the decline from 1998 to 1999 was small but statistically significant.

Table 2b repeats the exercise for the 50% rate. The results are essentially the same except that year is not significant at all although the signs are negative for both 1997 and 1998 indicating that the rates are tending to be higher and no firm conclusions can be drawn.

Table 2c presents the regression results in a different form. The model in Table 2b was augmented to permit interactions between age and household type and the resulting parameters were used to estimate the likelihood of paying more than 30% or 50% of income on shelter for a range of specific household scenarios in 1999¹¹. The probabilities are given for 25 year-old, 40 and 65 year-old reference persons for each household type in Ontario, and for the 40 year-old in the other four regions. The ratios of the 25 and 65 year-old probabilities to the 40 year-old probabilities are the same in each region and therefore can be calculated in a straightforward fashion for the other provinces and are not given in the table. The lower likelihoods of affordability problems in the Prairies and in Quebec based on SHS are readily seen, while the high shelter costs for young lone parents and older single females also emerge.

These data highlight one potential problem with the available data. The results for Quebec are somewhat inconsistent between analyses based on FAMEX/SHS and the PUMF files from the Census, although timing of the data collection is important. In the PUMF analyses, Quebec and particularly the major cities in Quebec have the highest affordability problems, although PUMF is consistent in highlighting the higher rate of increase in these problems in Ontario relative to Quebec. In FAMEX/SHS the relative degree of affordability is also higher in 1996 than it is in 1999, which is the year for which the scenarios in this section are constructed.

Even given these caveats, the story from the two sources is somewhat different. The relative likelihood of households experiencing affordability problems in Quebec is higher using PUMF than FAMEX/SHS. The initial reaction is that the more detailed questions relating to the components of income and shelter expenditures in FAMEX/SHS suggests that these surveys are more accurate on income and expenditure dimensions than PUMF. It is, however, important to note that the cities of Quebec, especially Montreal, have experienced considerable economic

stress in the last two decades and this will associated with greater unemployment and more problems with affordability; it was only possible to explore the city structures using PUMF.

There is no definitive solution to the ambiguity in the data sets at this time. What is needed is more in-depth analysis of the two sources, together with a commitment to ensuring that the meaning of questions asked in both censuses and surveys is the same in both official languages.

¹¹ To estimate the probability the values of variables for a given scenario (e.g. lone parent=1, age=40, British Columbia=1) are inserted in the equation represented by the parameters of Table 2b. This gives the estimated odds ratio z . Then the probability $z = \exp(z)/(1 + \exp(z))$.

Table 2a: LOGISTIC REGRESSIONS OF LIKELIHOOD OF RENTER HOUSEHOLD SPENDING 30 PERCENT OF INCOME ON SHELTER FOR PERIOD 1997-1999

Dependant Variable		Spending more than 30% of income on Shelter				
<i>Variables</i>	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp(B)</i> <i>(Odds Ratio)</i>	
1997	0.079	0.058	1.853	0.173	1.083	
1998	0.159	0.058	7.399	0.007	1.172	
Atlantic	-0.026	0.106	0.060	0.806	0.974	
Quebec	-0.391	0.058	45.172	0.000	0.677	
Prairies	-0.561	0.080	49.632	0.000	0.571	
BC/Terr	0.047	0.075	0.395	0.530	1.048	
Single Male	0.764	0.068	126.699	0.000	2.147	
Single Female	1.335	0.068	387.527	0.000	3.798	
Lone Parents	1.342	0.073	335.449	0.000	3.828	
Other non Families	0.486	0.092	27.819	0.000	1.626	
Age of Reference Person	0.017	0.001	135.617	0.000	1.017	
Constant	-1.772	0.090	386.714	0.000		
-2 Log Likelihood	10055.752					
N	16522					

Table 2b: LOGISTIC REGRESSIONS OF LIKELIHOOD OF RENTER HOUSEHOLD SPENDING 50 PERCENT OF INCOME ON SHELTER FOR PERIOD 1997-1999

Dependant Variable		Spending more than 50% of income on Shelter				
<i>Variables</i>	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp(B)</i> <i>(Odds Ratio)</i>	
1997	-0.084	0.081	1.068	0.301	0.919	
1998	-0.062	0.081	0.587	0.443	0.940	
Atlantic	-0.211	0.150	1.958	0.162	0.810	
Quebec	-0.384	0.082	21.895	0.000	0.681	
Prairies	-0.624	0.121	26.651	0.000	0.536	
BC/Terr	0.148	0.098	2.296	0.130	1.160	
Single Male	1.315	0.108	148.097	0.000	3.724	
Single Female	1.636	0.106	236.595	0.000	5.134	
Lone Parents	1.414	0.113	157.398	0.000	4.114	
Other non Families	0.814	0.146	31.046	0.000	2.257	
Age of Reference Person	-0.002	0.002	1.101	0.294	0.998	
Constant	-2.617	0.134	379.057	0.000		
-2 Log Likelihood	6018.254					
N	16552					

Parameters in bold face are significant at .001

Reference categories: Year=1999 - coefficients indicate odds of spending innameded year relative to 1999
Region =Ontario
Household type = Married Couples

Source: SHS 1997,1998,1999 (merged by authors)

Table 2c: Estimated Probabilities of Experiencing Affordability Problems for Selected Age, Household Type and Regional Scenarios in 1999

<i>Region</i>	<i>Household Type</i>	<i>Age of Reference Person</i>	<i>Estimated Likelihood of > 30% Income on Shelter</i>	<i>Estimated Likelihood of > 50% Income on Shelter</i>
Ontario	Married Couple	25	0.201	0.0580
	Single Male	25	0.344	0.1890
	Single Female	25	0.418	0.2450
	Lone Par	25	0.684	0.3170
	Married Couple	40	0.253	0.062
	Single Male	40	0.418	0.197
	Single Fem	40	0.523	0.248
	Lone Par	40	0.574	0.211
	Married Couple	65	0.357	0.071
	Single Male	65	0.550	0.212
	Single Fem	65	0.689	0.253
	Lone Par	65	0.377	0.097
Prairies	Married Couple	40	0.157	0.038
	Single Male	40	0.284	0.114
	Single Fem	40	0.377	0.147
	Lone Par	40	0.425	0.123
Atlantic	Married Couple	40	0.242	0.043
	Single Male	40	0.405	0.162
	Single Fem	40	0.509	0.207
	Lone Par	40	0.560	0.175
Quebec	Married Couple	40	0.186	0.037
	Single Male	40	0.328	0.144
	Single Fem	40	0.426	0.183
	Lone Par	40	0.477	0.155
BC/Terr	Married Couple	40	0.257	0.060
	Single Male	40	0.424	0.218
	Single Fem	40	0.530	0.272
	Lone Par	40	0.579	0.234

Source: Estimates calculated by authors

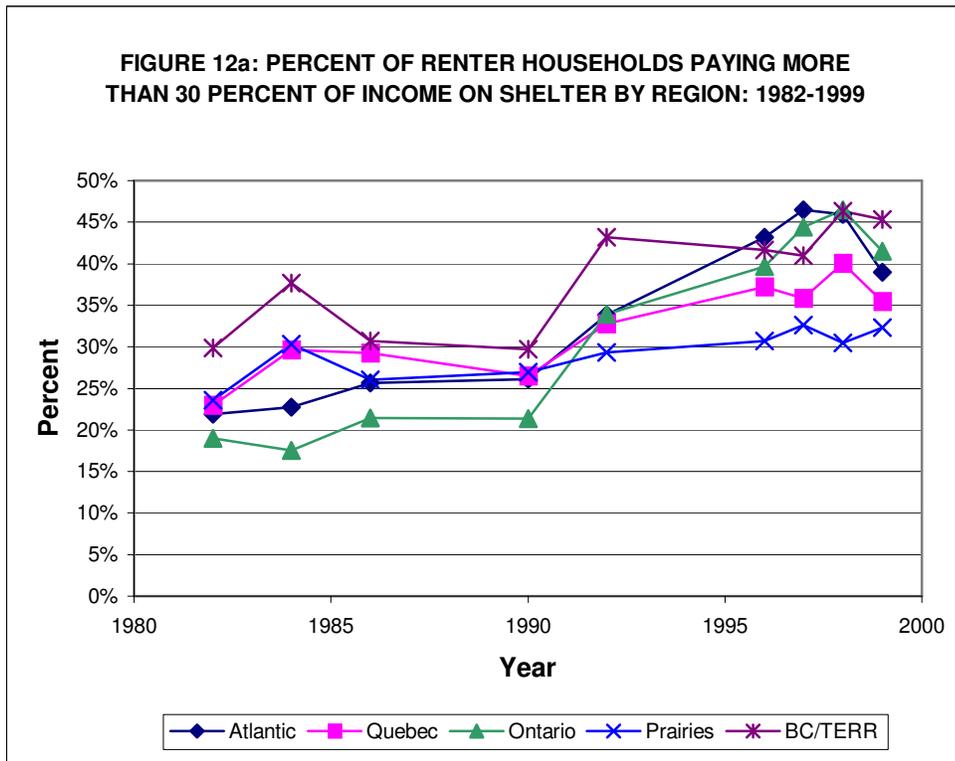
REGIONAL VARIATIONS IN SHELTER COSTS

- There are regional differences in trends in shelter-cost/income ratios.
- British Columbia is consistently high and the Prairies low in terms of the percent of renters with affordability problems.
- Ontario shows the most dramatic change from low percentages during the 1980s followed by dramatic increases during the 1990s.
- The major concentrations of severe affordability problems are the in largest cities, especially among renters.
- The Census data shows that these problems escalated between 1991 and 1996 with the largest increases again in the major cities with Ontario cities leading the way.

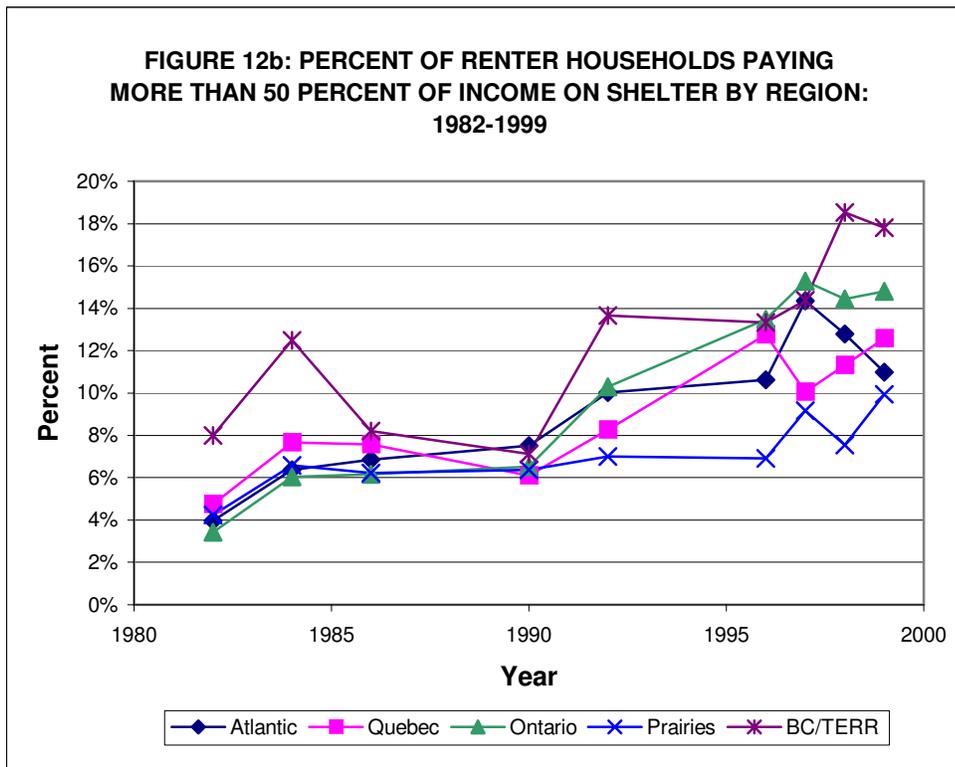
We would not expect the behaviour of shelter costs to be uniform across the country as not all areas benefit uniformly from upturns or downturns in the economy. There are sufficient observations in FAMEX/SHS to estimate rates separately for renters for the five major regions, although the smaller numbers tend to generate larger sampling errors and greater year-to-year variability (Figure 12). We must be cautious in interpreting the more variable figures for 1997-1999 for finer breakdowns of the data as the standard errors increase. There are, however important regional differences. Although the upward trend is evident throughout, there is a fair amount of variability. BC and the Territories have had significantly higher than average rates over the whole period but the major change is in the position of Ontario. It has gone from having the lowest rates during most of the 1980's to having the second highest rates at the end of the 1990s. This is consistent with what has been observed in the trends in income inequality and percent below LICO in the first half of the decade. At the same time the Prairies have emerged as having the lowest rates.

Urban-Rural differences in PUMF

Figure 13 illustrates the breakdowns in percentages with severe affordability problems by three classes of regions: the Census Metropolitan Areas, other urban areas, and the rural parts of the Canada. The largest percentages are in the CMAs and are smallest in rural areas, although the differences in rates are not large. In all classes of region, the percentages (and the absolute numbers) increased substantially between 1991 and 1996, with the proportionate increase being largest in the CMAs. Figure 14 repeats the observation for renters only.

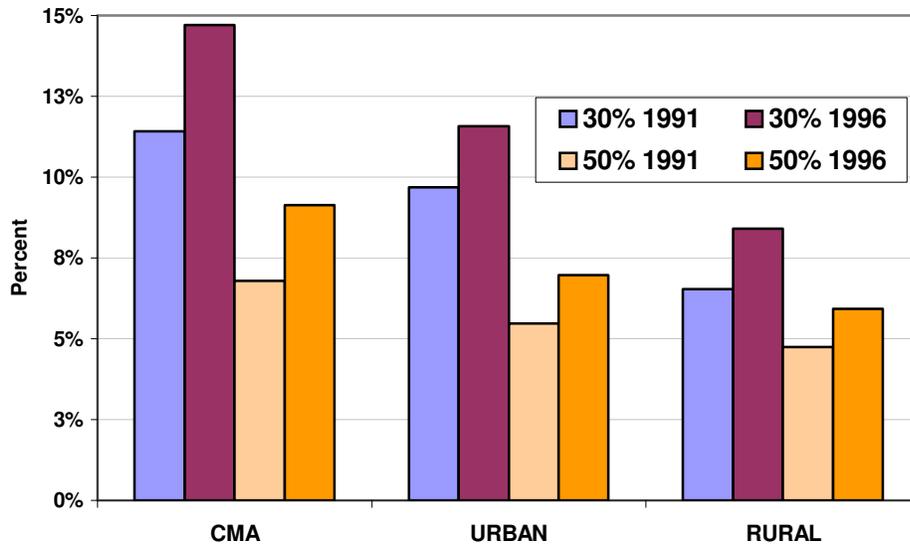


Source: FAMEX, 1982, 1984, 1986, 1990, 1992, 1996; SHS 1997, 1998, 1999



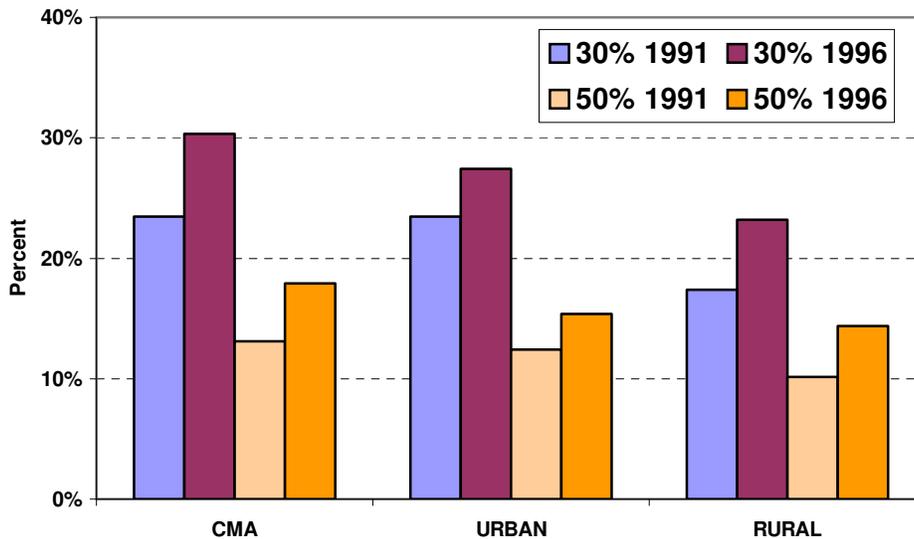
Source: FAMEX, 1982, 1984, 1986, 1990, 1992, 1996; SHS 1997, 1998, 1999

FIGURE 13
PERCENT OF ALL HOUSEHOLDS THAT SPEND MORE THAN 30 AND 50 PERCENT
OF INCOME ON SHELTER AND ARE BELOW LICO BY CMA, BY OTHER URBAN AND
BY RURAL AREAS: 1991 AND 1996



Source: PUMF (Households), 1991, 1996

FIGURE 14
PERCENT OF RENTER HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT
OF INCOME ON SHELTER AND ARE BELOW LICO BY CMA, BY OTHER URBAN AND
BY RURAL AREAS, 1991 AND 1996



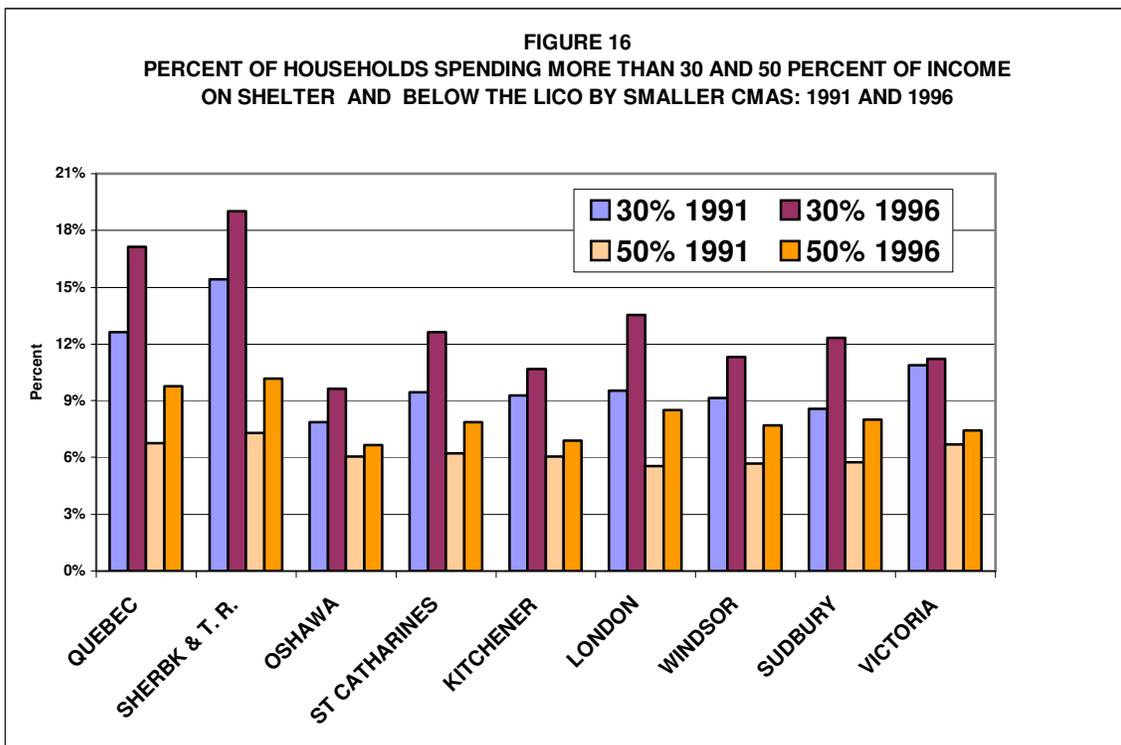
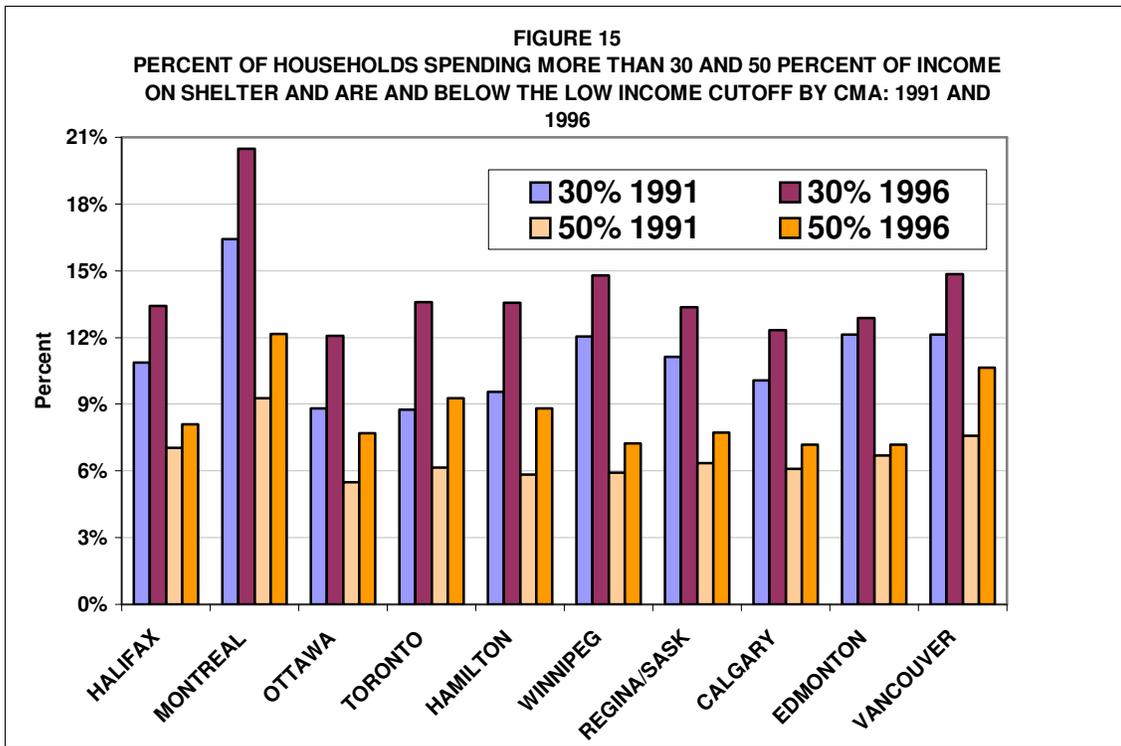
Source: PUMF (Households), 1991, 1996

We were asked to provide comparisons of the shelter costs across the 10 largest CMAs: Toronto, Montreal, Vancouver, Ottawa, Edmonton, Calgary, Hamilton, Halifax, Winnipeg, Regina/Saskatoon. In order to do this we had to make use of the 1991 and 1996 PUMF which have sufficient observations to permit such a detailed analysis. The timing of these data is unfortunate to the extent that we must wait for the release of the 2001 Census data to capture comparable data for the latter part of the 1990s. However, we know the national trends and the 1991/1996 CMA data illustrate clearly how this national picture tends to play out at the regional and local level.

The analysis of CMA circumstances with the rich data from the two censuses has produced a great number of tables specific to each region, each CMA and to CMA/non CMA breakdowns. Most of the results are included in a substantial Appendix (Appendix C).

There are pronounced spatial differences across the CMAs, smaller cities and rural areas. Figures 13-16 show the relevant proportions. The proportions show a progression of differences with 9.1 percent of CMA households spending over half of their income on housing compared to 7.0 and 5.9 percent of the households in smaller urban areas and in the rural parts of the country. Among homeowners the differences are much smaller than those for renters (Figure 14). Among rural homeowners, 4.1 percent have mortgages and spend more than half of their income on housing compared to 3.4 percent of households living in the CMAs. The incidence of affordability problems among renters varies by size of urban area with 17.9, 15.4 and 14.4 percent spending more than 50 percent in the CMAs, the other urban areas and the rural parts of the country, respectively (Figure 14). Affordability problems are not solely city problems but extend into the countryside.

Gender differences are illustrated in Figures C11 and C12 (Appendix C) and show fewer female-headed rural households paying more than a half of their income on housing. In all parts of the country, the proportions are highest for female-headed households with the largest differences being in the cities, both the CMAs and others. The non-couple households paying high proportions for housing are mostly in the CMAs; the gender differences in proportions are largest in the smaller cities (Figures C15 and C16) and the proportions are about the same in the rural parts of Canada. Similar patterns are found for the non-couple renters with more than one in five female-headed non-couple households spending more than half of their income on gross rent.



Source: PUMF 1991, 1996

Figure 15 shows the percentage of households experiencing housing affordability problems across the 10 largest CMAs. The other tables are not included here as the patterns across tenure and gender are consistent with those already discussed. The largest cities have the largest number of households with severe housing affordability concerns. The proportions are highest in Montreal, Vancouver and Toronto and increased by about 30 percent between 1991 and 1996. Figure 16 shows similar statistics for the smaller cities and that Quebec City is an outlier. Quebec City's proportion (9.8 percent) of households paying in excess of 50% of income on housing in 1996 is similar to those of the largest CMAs.

Appendix C presents a wide range of graphs reporting differences in both numbers and percentage of households in different socio-demographic subgroups who experience affordability problems. Households are differentiated by age (C17-C20), household type (C21-C24), number of dependant children (C25-C29), tenure (C30-C33), year of immigration (C33-C36), native Canadian status (C37-C40), education (C41-C44), number of income recipients (C45-C48), employment status (C49-C52), major source of income (C53-C56). In each case data are compared for 1991 and 1996 and then broken down by sex for 1996. There are relatively few surprises. In almost all cases, the likelihood of experiencing affordability problems is higher in 1996 than 1991 and women are worse off than men in both years. Affordability problems are higher at younger and older ages compared to middle ages, although, as was shown earlier, increases between 1991 and 1996 are concentrated at younger ages. Married couples have significantly lower likelihoods than lone parent or non-family households (which includes individuals living alone). For families with children, the risk of affordability problems increase consistently with the number of dependent children.

While immigrants are more likely to experience affordability problems, these rates are strongly mitigated by time since immigration. High shelter cost/income ratios are greatest among recent immigrants, reflecting lower incomes, younger ages, a dominance of renters and difficulties in integrating with the workforce. Over time, immigrant experience moves closer to that of the Canadian born. Native Canadians similarly have much higher affordability problems in both years, although the gap between native and non-native households declined.

Educational level performs as expected as those with greater levels of education have low shelter-cost/income ratios. Relationships to the workforce are also very important. Households with more employment income recipients have lower affordability problems, while

those in which the primary maintainer is unemployed or receives the majority of income from government transfers (this includes the elderly who may not be in the workforce) are worse off.

The socio-demographic structure of households with high shelter cost/income ratios is similar across all regions, although there tend to be proportionately more single households and lone parents in the larger cities. There are, however, important variations in the likelihood of being in the high ratio categories. To summarize these differences we constructed a set of location quotients¹² (LQ) for geographic regions (Table 3) which indicate the relative concentration of renter households spending more than 50% of income on housing controlling for the mix of household types. We use renter households only – owner households are somewhat more problematic in PUMF as we cannot differentiate between those with mortgages and those without.

The striking features of the LQs are that (i) non-CMA areas are consistently better off than CMAs; (ii) that Quebec and Quebec cities are at the top of the list in both 1991 and 1996; this is somewhat in contrast to the regional figures from FAMEX which indicate a lower ranking for affordability problems in Quebec in 1991 and 1996, suggesting that some caution needs to be exercised until the reasons for the differences can be determined ; (iii) most dramatic of all is the position of Ontario in the change column. As was indicated in FAMEX/SHS, Ontario changed its position dramatically in the 1990s from one the lower ranked to being second only to BC. In the PUMF data, both Ontario as a province and Ontario non-CMAs showed the greatest increases, while London, Hamilton and Toronto exhibited the largest increases among the CMAs with Ottawa not far behind. Given the continued upward trend for the Province from 1997-1999, it suggests that Ontario's major cities may also have fared badly in the same period. This dynamic for Ontario is consistent with the increase in low-income populations in Ontario for the same period (see Table 1 above).

¹² The location quotients are constructed by dividing the proportion of the households spending more than 50 percent on housing in each CMA by the proportion of all Canadian households living in the CMA. If the city has the same proportion as the rest of Canada, then the ratio will be one (1.000). If the city has more than the national average, then the ratio will be greater than one. The LQ measures the extent to which the population paying more than 50 percent on housing is concentrated geographically.

TABLE 3: LOCATION QUOTIENTS FOR SHARE OF HOUSEHOLDS PAYING MORE THAN 50 PERCENT OF INCOME ON SHELTER 1991-1996

	<i>Region</i>	<i>1991</i>	<i>Region</i>	<i>1996</i>	<i>Region</i>	<i>Ratio 1996/1991</i>	
<i>Provinces</i>	Quebec	1.209	Quebec	1.220	Ontario	1.081	
	Saskatchewan	1.050	British Columbia	1.089	British Columbia	1.039	
	British Columbia	1.048	Ontario	0.952	Quebec	1.009	
	Alberta	0.987	Nova Scotia	0.851	New Brunswick	0.958	
	Nova Scotia	0.972	Manitoba	0.830	Manitoba	0.878	
	Manitoba	0.945	New Brunswick	0.810	Nova Scotia	0.875	
	Ontario	0.880	Saskatchewan	0.804	Alberta	0.814	
	New Brunswick	0.846	Alberta	0.803	Saskatchewan	0.765	
	PEI	0.509	PEI	0.337	PEI	0.662	
<i>CMA's</i>	Montreal	1.449	Montreal	1.432	London	1.150	
	Vancouver	1.189	Vancouver	1.252	Hamilton	1.137	
	Sherbrooke	1.140	Sherbrooke	1.201	Toronto	1.132	
	Halifax	1.105	Quebec City	1.152	Quebec City	1.086	
	Quebec City	1.061	Toronto	1.092	Sherbrooke	1.054	
	Calgary	1.053	Hamilton	1.039	Ottawa	1.054	
	Victoria	1.048	London	1.000	Vancouver	1.053	
	Saskatoon/Regina	0.999	Halifax	0.953	Sudbury	1.041	
	St Catherine's/Niagara	0.975	Sudbury	0.943	Windsor	1.021	
	Toronto	0.965	St Catherine's/Niagara	0.926	Montreal	0.988	
	Edmonton	0.957	Saskatoon/Regina	0.910	St Catherine's/Niagara	0.950	
	Oshawa	0.951	Ottawa	0.908	Winnipeg	0.921	
	Kitchener	0.947	Windsor	0.908	Saskatoon/Regina	0.911	
	Winnipeg	0.929	Victoria	0.877	Edmonton	0.883	
	Hamilton	0.914	Winnipeg	0.855	Halifax	0.863	
	Sudbury	0.906	Calgary	0.847	Kitchener	0.856	
	Windsor	0.889	Edmonton	0.845	Victoria	0.837	
	London	0.869	Kitchener	0.811	Oshawa	0.825	
	Ottawa	0.862	Oshawa	0.785	Calgary	0.805	
	<i>non CMA</i>	Saskatchewan non CMA	0.999	Quebec non CMA	0.966	Ontario non CMA	1.082
		Manitoba non CMA	0.974	Saskatchewan non CMA	0.910	BC non CMA	1.081
		Quebec non CMA	0.965	BC non CMA	0.903	Quebec non CMA	1.002
		Alberta non CMA	0.949	Ontario non CMA	0.812	Atlantic non CMA	0.942
BC non CMA		0.835	Manitoba non CMA	0.788	Saskatchewan non CMA	0.911	
Atlantic non CMA		0.790	Atlantic non CMA	0.744	Manitoba non CMA	0.809	
Ontario non CMA		0.750	Alberta non CMA	0.727	Alberta non CMA	0.766	

Source: PUMF 1991, 1996

REGRESSION ANALYSIS OF AFFORDABILITY

- Logistic regression allows the assessment of effects of specific variables on the likelihood of severe affordability problems while controlling for the influence of other relevant variables.
- Using a merged file containing individual observations from the 1991 and 1996 Censuses, the likelihood of paying more than 50% of income on shelter increased by 27.9% for all households and by 34.3% for renters.
- Cities consistently showed higher likelihoods of severe affordability problems among renters, with Quebec cities having markedly high values.
- Analysis of change in affordability highlights the increases in rental markets in Ontario cities.
- In addition to the age and household type effects previously reported, greater affordability problems are found among recent immigrants and recent movers.
- Particularly important is the role of labour force attachment. For those with full-time jobs, the risk of severe affordability problems is reduced by 83% relative to those who have no job. Having a part-time job reduces the risk by 46%.

Logistic regressions can show the unique contribution of particular characteristics to the chance that a household is spending more than half their income on housing and is in the low-income cut-off group. The estimated coefficients listed in Table 4 show the partial odds of a household being in the “at risk” group as defined here. The first column shows the estimates using all the data on owners and renters in the 1991 and 1996 PUMF while the second shows the estimates obtained by including only the renters in the regression. The third describes only the renters but includes education level and the household’s maintainer having a full or part time job as control variables. The estimates in bold are different from one, at a probability level of less than .001, meaning that there is less than a one in a thousand chance of there not being an association between the variable and the probability the household is in the “at risk” group. A value of one (1) means that the odds of being in the “at risk” group as defined here do not change or are not affected by the variable.

In order to present Table 4 in a condensed form, shortened variables names are used. The full descriptions of each variable are provided in Appendix B.

The partial odds define the relative odds of being in the target group (spending more than 30% of income on shelter) given that the household possesses the characteristic relative to

the odds¹³ of being in the target group without it. For example, if a household in 1991 had a one in ten chance of paying more than a half of their income on housing and being poor, then in 1996 their odds would increase by a factor of 1.279 (i.e. they would have a 1.279 chance in ten of being in the group). Their odds increased by 27.9 percent. However, if they were a renter then the second column statistics apply and renters increased their odds by a factor of 1.343. If we also account for differences in education and in employment then the change over the five year period is smaller, the “at risk” group increased by only a factor of 1.216. The advantage of using the regression results is due to all the odds being estimated simultaneously and each, therefore, describes the unique association. The 1.343 increase for renters between 1991 and 1996 is independent of any changes that may have occurred in the population characteristics that are described by other variables in the model. The coefficients for the geography variables describe the unique effects of the spatial differences after accounting for the effects of the differences in demographic structure.

The odds have to be measured against some base. Here the base, the hypothetical household that serves as a benchmark, is in non-CMA Ontario, is a one person, male, non-family Canadian born. He is 25 to 35 years old, not a native Canadian, not with a full or part time job and without a high school diploma. The odds can also be used in a relative manner. For example, while the odds of 1.162 in the first column for Vancouver indicates that in Vancouver the odds of spending more than 30% of income on housing are 16.2% greater than the odds in a non-CMA in Ontario, Vancouver can also be compared with Calgary by taking the ratio of the two odds, namely $1.162/0.887 = 1.310$. Thus, the odds in Vancouver are 31% higher than in Calgary¹⁴.

The spatial variables include the CMAs and the provincial regions outside the CMAs. The first column of Table 4 indicates that, when all households are considered and tenure is ignored, Toronto is no different from the non-CMA part of Ontario. Ottawa differs by having proportionally fewer at risk households (after accounting for differences in the mix of households) than the non-CMA part of Ontario. Winnipeg, Edmonton and Calgary are also better off. The highest geographic differences, not due to demographic differences, are in Quebec and

¹³ If p is the probability of being in the target group, then the odds r of being in the group = $p/(1-p)$. Thus if $p=0.6$ then $r=0.6/0.4 = 1.5$.

¹⁴ Calculating odds when interactions are included is a little more complicated. The relative odds for a 40 year old (age3) female single parent compared to the reference group requires the multiplication of 2 values. It equals $1.221(\text{age } 3) * 1.350(\text{sparentfage } 3) = 1.648$ or 64.8% higher.

British Columbia. If a household in Ontario had a one in ten chance of being at risk then the same household would have a 1.5 in 10 chance should it live in Montreal. The difference may be due to Montreal's market conditions or due to systematic differences in the way income was reported and LICO defined in Quebec. The estimates also show that there are no systematic differences across the non-CMA parts of the five provincial regions. The basic problem with including renters and owners together in PUMF is that we cannot separate those with mortgages from those without and, as the analysis using FAMEX/SHS showed, shelter cost/income ratios for these two subgroups have behaved very differently over the last 15 years.

The situation changes substantially when only renters are considered. The second column shows all the CMAs to be worse off than non-CMA Ontario and that Quebec, the Prairie provinces and British Columbia outside the CMAs to be worse off than Ontario after the effects of the differences in their demography have been accounted for. Among the CMAs the worst off are St. Catherine, Montreal, Vancouver, then Victoria, Hamilton, Oshawa and Halifax. Toronto is low down on the cities in terms of average effects on affordability over both Censuses. However, if we repeat the analysis but insert an additional set of variables to measure the differential effect of observations for 1996 in each city, and use the model parameters to estimate the probabilities of paying more than 50% of income for housing, we see that increases between 1991 and 1996 are largest in several Ontario cities, especially for renters (Table 5).

After accounting for the effect of differences in education level and employment, most city differences are reduced except for Toronto, Victoria, Vancouver and Edmonton. The increase in the partial odds with the inclusion of these variables point to the importance of the housing market conditions in these cities. The lower partial odds without these variables are due to the cities having proportionally more people with higher education and with jobs. After we remove the effect of these differences we can see the chances of being in the "at risk" group increasing.

TABLE 4: ESTIMATED LOGIT ODDS RATIOS DESCRIBING THE CONTRIBUTION OF SPATIAL, DEMOGRAPHIC, GENDER, AND EMPLOYMENT ON THE PROBABILITY THAT A HOUSEHOLD SPENDS MORE THAN HALF THEIR INCOME ON HOUSING AND IS BELOW LICO.

<i>Variable</i>	<i>All Households</i>			<i>Renters Only</i>			<i>Variable</i>	<i>All Households</i>			<i>Renters Only</i>		
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 2</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 2</i>		<i>Model 1</i>	<i>Model 2</i>	<i>Model 2</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 2</i>
year = 1996	1.279	1.343	1.216	sparentm	0.698	0.731	0.718	sparentfage1	3.735	3.576	2.200		
Toronto	1.014	1.305	1.389	sparentfage2	2.702	2.481	1.711	sparentfage3	1.350	1.257	1.184		
Ottawa	0.880	1.176	1.131	sparentfage4	0.749	0.710	0.713	sparentfage5	0.546	0.523	0.502		
Oshawa	1.004	1.514	1.358	sparentfage6	0.506	0.668	0.702	sparentfage7	0.548	0.710	0.745		
Hamilton	1.134	1.525	1.354	sparentfkds	1.119	1.067	0.903	couplenkage1	0.388	0.391	0.484		
St Catherine's/Niagara	1.131	1.721	1.482	couplenkage2	0.240	0.278	0.347	couplenkage3	0.269	0.359	0.426		
Kitchener	0.905	1.240	1.195	couplenkage4	0.201	0.291	0.357	couplenkage5	0.243	0.378	0.470		
London	0.933	1.293	1.186	couplenkage6	0.274	0.459	0.486	couplenkage7	0.195	0.253	0.257		
Windsor	0.948	1.411	1.229	couplewkage1	0.885	0.938	0.773	couplewkage2	0.486	0.555	0.525		
Sudbury	1.009	1.434	1.151	couplewkage3	0.318	0.406	0.449	couplewkage4	0.255	0.341	0.419		
Halifax	1.113	1.502	1.496	couplewkage5	0.317	0.401	0.534	couplewkage6	0.585	0.791	1.024		
Quebec City	1.225	1.390	1.200	couplewkage7	0.449	0.262	0.419	move1	1.541	1.417	1.438		
Sherbrooke	1.223	1.394	1.091	move5	1.470	1.128	1.168	immig1	0.804	0.908	0.994		
Montreal	1.503	1.698	1.524	immig2	0.804	0.745	0.965	immig3	1.026	0.900	1.109		
Winnipeg	0.847	1.185	1.090	immig4	1.318	1.085	1.263	immig5	2.040	1.695	2.025		
Saskatoon/Regina	0.892	1.165	1.113	immig6	2.380	1.706	1.823	immig196	1.000	1.054	1.091		
Edmonton	0.879	1.129	1.314	immig296	1.124	1.117	1.100	immig396	1.031	1.049	1.028		
Calgary	0.887	1.172	1.193	immig496	0.999	0.960	0.921	immig596	0.817	0.724	0.642		
Vancouver	1.162	1.630	1.734	otherimmig	1.147	1.146	1.015	asia	1.378	1.324	1.160		
Victoria	0.981	1.532	1.620	othermt	1.127	1.126	0.995	native	2.124	1.723	1.331		
Atlantic non CMA	1.023	1.113	1.074	nativef	0.688	0.763	0.711						
Quebec non CMA	1.261	1.121	1.001										
Prairies non CMA	0.956	1.347	1.148										
BC non CMA	0.928	1.445	1.394										
age1	1.226	1.151	0.943										
age3	1.221	1.350	1.140										
age4	1.479	1.851	1.276										
age5	1.544	2.111	0.856										
age6	0.695	0.864	0.211										
age7	0.602	0.846	0.192										
nonfamfage1	1.657	1.543	1.836										
nonfamfage2	1.066	0.980	1.294										
nonfamfage3	1.114	1.109	1.367										
nonfamfage4	1.173	1.181	1.295										
nonfamfage5	1.195	1.177	1.224										
nonfamfage6	1.719	1.686	1.753										
nonfamfage7	2.384	1.854	1.917										
groupall	0.426	0.414	0.411										
groupf	0.784	0.841	0.785										
separtdall	1.149	0.950	1.044										
separtdf	1.401	1.401	1.214										

TABLE 4: (cont.)

Variable	All Households		Renters Only		Variable	All Households		Renters Only	
			Model 1	Model 2				Model 1	Model 2
					hischool	ne	ne	ne	0.769
					hischoolf	ne	ne	ne	0.813
					someuniv	ne	ne	ne	0.929
					someunivf	ne	ne	ne	0.730
					univdree	ne	ne	ne	0.730
					univdreef	ne	ne	ne	1.288
Number of observations	597565		217257	217257	full	ne	ne	ne	0.177
LR chi2(82)	39130		14207	28772.91	fullf	ne	ne	ne	1.165
Prob > chi2	0.000		0.000	0	part	ne	ne	ne	0.549
Pseudo R2	0.124		0.077	0.156	partf	ne	ne	ne	0.992
					prof	ne	ne	ne	0.768
					proff	ne	ne	ne	0.888

Parameters in boldface are significant at p<.001

Source: estimated by authors from 1991, 1996 PUMF

TABLE 5: PREDICTED PROBABILITIES OF SPENDING MORE THAN 50% OF INCOME ON HOUSING CONTROLLING FOR DEMOGRAPHIC CHARACTERISTICS

City	All Households			Renters Only		
	1991	1996	1996/1991	1991	1996	1996/1991
Halifax	0.102	0.112	1.102	0.164	0.195	1.189
Quebec City	0.099	0.133	1.343	0.141	0.194	1.373
Montreal	0.124	0.154	1.238	0.176	0.219	1.245
Sherbrooke/Trois Riv.	0.098	0.135	1.383	0.148	0.189	1.278
Ottawa	0.073	0.100	1.383	0.123	0.169	1.383
Oshawa	0.096	0.100	1.036	0.187	0.176	0.940
Toronto	0.084	0.113	1.343	0.134	0.185	1.381
Hamilton	0.090	0.127	1.415	0.149	0.214	1.439
St. Cath/Niagara	0.099	0.118	1.201	0.179	0.221	1.234
Kitchener	0.084	0.093	1.108	0.143	0.163	1.145
London	0.074	0.108	1.452	0.121	0.196	1.621
Windsor	0.080	0.105	1.308	0.146	0.194	1.332
Sudbury/Thunder Bay	0.083	0.113	1.355	0.144	0.200	1.389
Winnipeg	0.076	0.091	1.197	0.131	0.162	1.233
Saskatoon/Regina	0.081	0.094	1.166	0.126	0.163	1.289
Calgary	0.080	0.093	1.166	0.124	0.158	1.279
Edmonton	0.082	0.091	1.110	0.135	0.154	1.140
Vancouver	0.097	0.126	1.302	0.168	0.215	1.274
Victoria	0.093	0.098	1.052	0.184	0.181	0.983

Source: estimated by authors from 1991, 1996 PUMF

CONCLUSIONS

In this report we have examined the trends in shelter-cost/income ratios in Canada for the period 1982-1999, with a major focus on trends in the 1990s. We identified and estimated the degree of severe affordability problems with two measures: (i) households that spent more than 30% of before-tax income on shelter and (ii) households that spent more than 50% of before-tax income on shelter. Although it can be argued that after-tax income is a better measure of financial hardship, we show (Appendix A) that the basic trends are the same whether before or after-tax income is used.

A core issue here is the ability to answer the types of questions posed in a policy framework with the data available. While FAMEX/SHS do contain data on after-tax income, the sample size does not support the detailed socio-demographic and geographic analysis of interest in informing policy. The PUMF files from the 1991 and 1996 Censuses are far richer in this regard, but have strict limitations deriving from very general self-reporting questions on household income and expenditures on shelter which stand in stark contrast to the detailed income and expenditure questions in FAMEX/SHS. Together, the two sets of data tell a compelling story of increasing housing affordability problems across the nation and for virtually all groups, although the most serious problems are concentrated in the renter populations in the largest cities.

The substantive findings are highlighted below.

- According to the FAMEX/SHS surveys, the estimated number of household paying more than 50% of income on shelter increased by 59% from 560,000 to 891,000 between 1992 and 1999.
- Increasing shelter cost/income ratios are a long-term trend that, for the most extreme cases (those paying more than 50% of income for shelter), continued through the latter part of the 1990s.

- Affordability problems increased most for renters and also grew for owners with mortgages. Ratios for owners without mortgages stayed relatively flat.
- Among tenants, unattached women and lone parents (the overwhelming majority of whom are women) experienced the most severe problems. For owners with mortgages, married couples and lone parents bear the burden.
- Age plays an important differentiating role by household type. For married couples and lone parents, the majority of those at risk are younger households with the heads in the age range 25-44. Unattached males are somewhat older, while unattached females are the oldest group with more than 50% of the high ratio group being over 65. These age differences have significant policy consequences.
- Geographically, the major differences are concentrated in the renter households. The cities are more prone to high shelter cost/income ratios. During the first half of the 1990s (1991-1996), dramatic changes occurred with Ontario in general and Ontario cities in particular leading the way in the growth in concentration of high ratio households. These findings are consistent with other work on changing income inequality during the same period.
- Renters in the largest cities have the highest rates of affordability problems.
- Employment status is an important contributor to the risk of experiencing affordability problems. Those without full or part-time jobs have the most serious problems.
- Overall, rising levels of severe affordability have been pervasive for the last two decades.

While our findings show a progressive worsening of the proportion of low-income households in Canada having housing affordability problems, the relationship of these findings to the homelessness problem is not straightforward. As Dear and Wolch (1987) indicate, many other precipitating factors are involved in the transition to homelessness. High shelter costs may be a necessary condition but they are not a sufficient condition. The ability to cope with either a long-term stressful state of financial pressure or, more likely, a sudden deterioration precipitated by a specific event such as a loss of job, is critical to the transition. Mental illness, various addictions, availability of social and economic support from family and friends as well as personal

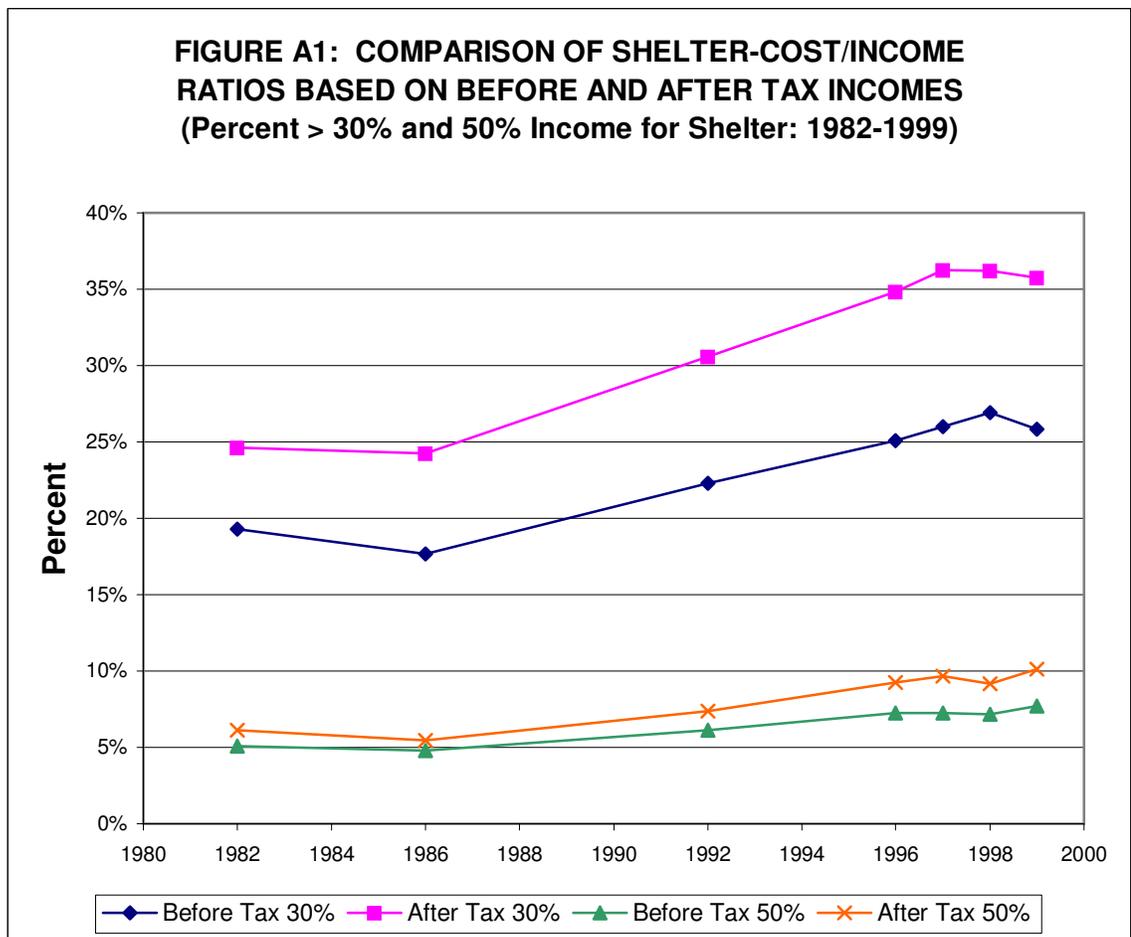
psychological resources all play a role in transforming a stressful financial situation into homelessness. However, there are also structural influences which affect the availability of appropriate housing for specific groups (often lone parents) and result in discrimination, especially in tight markets. What has been provided here is contextual material for one part of a complex picture, although as Quigley et al. (2001) have suggested, housing affordability may be an important component in the understanding of homelessness.

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APPENDIX A: TRENDS BASED ON BEFORE-TAX AND AFTER-TAX INCOME

The data available in FAMEX and SHS include measures of both before-tax and after-tax income. We calculated the ratios of shelter-cost to before-tax and after-tax incomes for all households for the period 1982-1999 (Figure A1). The trends are almost identical. In fact, the before-tax measures are somewhat conservative. The proportions are lower but the gap between the two pairs of curves (>30% of income and >50% of income) diverges slightly, indicating that affordability is getting worse at a slightly faster rate if after-tax incomes are used. It is also the case that the decline for 1998-99 in the before-tax rates is not evident in the after-tax rates.



Source: FAMEX 1982, 1986, 1992, 1996; SHS 1997, 1998, 1999

APPENDIX B: VARIABLES USED IN THE REGRESSION ANALYSIS

Table B1 provides a description of the variables used in the regression analysis in Table 4. Where the word *and* is used it means the interaction effect between two variables is being used. Thus the variable **fullf** is the interaction between being employed full-time and being female. The odds of a female employed full-time is then captured by multiplying the odds of being full-time (the odds-ratio for the variable **full**) and the odds ratio for the interaction term. From Table 4 the resulting partial odds are $0.177 * 1.165 = 0.206$. Thus the reduction in risk of having a severe affordability problem is less than that for a male employed full-time. The observations all refer to the status of the reference person in the household.

TABLE B1: VARIABLE DEFINITIONS FOR THE REGRESSION ANALYSIS

<i>Variable Name</i>	<i>Description</i>
age1	head 15-24
age2	head 25-34
age3	head 35-44
age4	head 45-54
age5	head 55-64
age6	head 65-74
age7	head 75 plus
nonfamage1	female head of non family household <i>and</i> head aged 15-24
groupall	unrelated group
groupf	unrelated group <i>and</i> female head
separtdall	separated or divorced
separtdf	separated or divorced <i>and</i> female head
sparentm	single parent male
sparentfage1	single parent female <i>and</i> head aged 15-24
sparentfkds	Number of children in single parent female's house
couplenkage1	couple with no children <i>and</i> head aged 15-24
couplewkage1	couple with children <i>and</i> head aged 15-24
move1	Moved in last year
move5	Moved in last 5 years
immig1	Immigrated before 1961
immig2	Immigrated 1961-1970
immig3	Immigrated 1971-1980
immig4	Immigrated 1981-1985
immig5	Immigrated 1986-1990
immig6	Immigrated 1991-1996
immig196	Immigrated before 1961 <i>and</i> a 1996 observation
immig296	Immigrated 1961-1970 <i>and</i> a 1996 observation
immig396	Immigrated 1971-1980 <i>and</i> a 1996 observation
immig496	Immigrated 1981-1985 <i>and</i> a 1996 observation
immig596	Immigrated 1986-1990 <i>and</i> a 1996 observation
otherimmig	immigrated from Europe
asia	immigrated from asia
othermt	Mother tongue other than English or French
native	native canadian
nativef	native canadian and female
hischool	high school diploma or more
hischoolf	high school diploma or more <i>and</i> female
someuniv	some university or more
someunivf	some university or more and female
univdree	university degree
univdreef	university degree <i>and</i> female
full	employed full time
fullf	employed full time <i>and</i> female
part	employed part time
partf	employed part time <i>and</i> female
prof	professional occupation
proff	professional occupation <i>and</i> female

APPENDIX C: GRAPHS FROM 1991 AND 1996

Appendix C includes a wide range of graphs documenting both the number of households and percent of households with affordability problems in various socio-demographic and geographic subgroupings. In each graph, the households who spend more than 30 percent and more than 50 percent of before-tax income on shelter and lie below Statistics Canada's Low Income Cut-Off (LICO)

LIST OF GRAPHS

- C1 NUMBER OF CANADIAN HOUSEHOLDS SPENDING OVER 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LOW-INCOME CUT-OFF (LICO) IN 1991 AND 1996**
- C2 PERCENT CANADIAN HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT ON HOUSING AND BELOW THE LOW INCOME CUT-OFF (LICO) IN 1991 AND 1996**
- C3 NUMBER OF CANADIAN HOUSEHOLDS SPENDING OVER 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY SEX OF PRIMARY MAINTAINER IN 1996**
- C4 PERCENT OF CANADIAN HOUSEHOLDS SPENDING OVER 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY SEX OF PRIMARY MAINTAINER IN 1996**
- C5 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY REGION IN 1991 AND 1996**
- C6 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY REGION IN 1991 AND 1996**
- C7 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY REGION AND SEX OF PRIMARY MAINTAINER IN 1996**
- C8 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY REGION AND SEX OF PRIMARY MAINTAINER IN 1996**
- C9 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY CMA, BY OTHER URBAN AND BY RURAL AREAS IN 1991 AND 1996**
- C10 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY CMA, BY OTHER URBAN AND BY RURAL AREAS: 1991 AND 1996**
- C11 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY CMA, BY OTHER URBAN AND BY RURAL AREAS AND BY SEX OF PRIMARY MAINTAINER IN 1996**
- C12 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY CMA, BY OTHER URBAN AND BY RURAL AREAS AND BY SEX OF PRIMARY MAINTAINER IN 1996**

- C13 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY CMA: 1991 AND 1996
- C14 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY CMA: 1991 AND 1996
- C15 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY CMA AND BY SEX OF PRIMARY MAINTAINER IN 1996
- C16 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY CMA AND BY SEX OF PRIMARY MAINTAINER IN 1996
- C17 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY AGE OF HEAD OF HOUSEHOLD: 1991 AND 1996
- C18 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY AGE OF HEAD OF HOUSEHOLD: 1991 AND 1996
- C19 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY AGE AND SEX OF PRIMARY MAINTAINER IN 1996
- C20 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY AGE AND SEX OF PRIMARY MAINTAINER IN 1996
- C21 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY HOUSEHOLD TYPE AND THE PRESENCE OF CHILDREN: 1991 AND 1996
- C22 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY HOUSEHOLD TYPE AND THE PRESENCE OF CHILDREN: 1991 AND 1996
- C23 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY HOUSEHOLD TYPE AND THE PRESENCE OF CHILDREN BY SEX OF PRIMARY MAINTAINER IN 1996
- C24 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY HOUSEHOLD TYPE AND THE PRESENCE OF CHILDREN BY SEX OF PRIMARY MAINTAINER IN 1996
- C25 NUMBER OF FAMILY HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY NUMBER OF DEPENDENT CHILDREN IN HOUSEHOLD: 1991 AND 1996
- C26 PERCENT FAMILIES SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY NUMBER OF DEPENDENT CHILDREN IN HOUSEHOLD: 1991 AND 1996
- C27 NUMBER FAMILY HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT ON HOUSING AND BELOW LICO BY NUMBER OF DEPENDANT CHILDREN IN HOUSEHOLD AND BY SEX OF PRIMARY MAINTAINER IN 1996
- C28 PERCENT FAMILY HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY NUMBER OF DEPENDENT CHILDREN IN HOUSEHOLD AND SEX OF PRIMARY MAINTAINER IN 1996
- C29 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY TENURE: 1991 AND 1996

- C30 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY TENURE: 1991 AND 1996**
- C31 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY TENURE STATUS AND SEX OF PRIMARY MAINTAINER IN 1996**
- C32 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY TENURE STATUS AND SEX OF PRIMARY MAINTAINER IN 1996**
- C33 NUMBER OF IMMIGRANT HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY YEAR OF IMMIGRATION: 1991 AND 1996**
- C34 PERCENT OF IMMIGRANT HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY YEAR OF IMMIGRATION: 1991 AND 1996**
- C35 NUMBER OF IMMIGRANT HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY YEAR OF IMMIGRATION AND BY SEX OF PRIMARY MAINTAINER IN 1996**
- C36 PERCENT OF IMMIGRANT HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY YEAR OF IMMIGRATION BY SEX OF PRIMARY MAINTAINER IN 1996**
- C37 NUMBER OF HOUSEHOLDS WHO SPEND MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY NATIVE CANADIAN STATUS: 1991 AND 1996**
- C38 PERCENT OF HOUSEHOLDS WHO SPEND MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY NATIVE CANADIAN STATUS: 1991 AND 1996**
- C39 NUMBER OF HOUSEHOLDS WHO SPEND MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY NATIVE CANADIAN STATUS AND SEX OF PRIMARY MAINTAINER IN 1996**
- C40 PERCENT OF HOUSEHOLDS WHO SPEND MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY NATIVE CANADIAN STATUS AND SEX OF PRIMARY MAINTAINER IN 1996**
- C41 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY PRIMARY MAINTAINER'S HIGHEST LEVEL OF EDUCATION: 1991 AND 1996**
- C42 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY PRIMARY MAINTAINER'S HIGHEST LEVEL OF EDUCATION: 1991 AND 1996**
- C43 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY EDUCATION LEVEL AND SEX OF PRIMARY MAINTAINER IN 1996**
- C44 PERCENT HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY EDUCATION LEVEL AND SEX OF PRIMARY MAINTAINER IN 1996**
- C45 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY THE NUMBER OF EMPLOYMENT INCOME RECIPIENTS IN HOUSEHOLD: 1991 AND 1996**

- C46 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY THE NUMBER OF EMPLOYMENT INCOME RECIPIENTS IN HOUSEHOLD: 1991 AND 1996
- C47 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY THE NUMBER OF EMPLOYMENT INCOME RECIPIENTS AND SEX OF PRIMARY MAINTAINER IN 1996
- C48 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY THE NUMBER OF EMPLOYMENT INCOME RECIPIENTS AND SEX OF PRIMARY MAINTAINER IN 1996
- C49 NUMBER OF HOUSEHOLDS PAYING OVER 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY EMPLOYMENT STATUS IN 1991 AND 1996
- C50 PERCENT OF HOUSEHOLDS PAYING OVER 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY EMPLOYMENT STATUS IN 1991 AND 1996
- C51 NUMBER OF HOUSEHOLDS PAYING OVER 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY EMPLOYMENT STATUS AND SEX OF PRIMARY MAINTAINER IN 1996
- C52 PERCENT OF HOUSEHOLDS PAYING OVER 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY EMPLOYMENT STATUS AND SEX OF PRIMARY MAINTAINER IN 1996
- C53 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY HOUSEHOLD MAINTAINER'S MAJOR SOURCE OF INCOME: 1991AND 1996
- C54 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY HOUSEHOLD MAINTAINER'S MAJOR SOURCE OF INCOME: 1991 AND 1996
- C55 NUMBER OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY HOUSEHOLD MAINTAINER'S MAJOR SOURCE OF INCOME AND SEX OF PRIMARY MAINTAINER IN 1996
- C56 PERCENT OF HOUSEHOLDS SPENDING MORE THAN 30 AND 50 PERCENT OF INCOME ON SHELTER AND BELOW THE LICO BY HOUSEHOLD MAINTAINER'S MAJOR SOURCE OF INCOME AND SEX OF PRIMARY MAINTAINER IN 1996