A STUDY OF THE RELIABILITY OF MEASUREMENT METHODS OF HOUSING AFFORDABILITY PROBLEMS REVISED FINAL REPORT

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A Study of the Reliability of Measurement Methods of Housing Affordability Problems Revised Final Report

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TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Current federal social housing programs hold as an important objective the elimination of housing problems of program clients in order to remove them from core housing need. Households in core housing need are defined as those who:

- occupy a crowded or inadequate dwelling and who currently pay less than 30 per cent of their income for shelter, but for whom basic shelter costs for an adequate and suitable dwelling available in their market area would consume 30 per cent or more of their income; or
- pay 30 per cent or more of their income for shelter and for whom an adequate and suitable dwelling available in their market area would consume 30 per cent or more of their income.

Several recent program evaluations have revealed that some residents of social housing projects are paying 30 per cent or more of their income on shelter, despite the fact that applicable rent-to-income scales indicate that they should be paying less than 30 per cent. This is referred to as an affordability problem.

There are several hypotheses about the origin of this affordability problem finding. There may, in fact, be a true affordability problem, which would indicate that the programs are not achieving the federal government objective of eliminating core need among low income households. This finding may be linked instead to a methodological issue: it may be that there is measurement error associated with the estimates of income and/or shelter costs collected through survey data or that the definition of what should be included in the estimates is not consistent with the definition used in determining core need.

The present study was commissioned to explore the issue of apparent affordability problems among residents of social housing projects with a specific focus

on measurement methods. Its purpose was to examine the accuracy of responses to questions used in previous surveys to assess household income and shelter costs and determine the origin of any systematic inaccuracies. To this end, interviews were conducted with the administrators of 13 social housing projects in Newfoundland, Québec, Ontario and British Columbia. Tenant administrative files were reviewed and a survey of tenants of these projects was also conducted. Two different survey formats were used: one which replicated questions used in past research and one which attempted to collect more detailed information using a matrix of household members and income sources.

Twenty-one different shelter cost-to-income ratios were designed and applied to the tenant survey data. Five ratios employed survey data from the short form which replicated questions used in past research, 16 were based on detailed information captured in the long form. Analysis in this research concentrated primarily on the findings of the five short form ratios. The rationale for this is twofold: 1) for comparability with past research; and 2) enhanced confidence in a larger sample — only 25 per cent of the survey sample received the long form of the survey.

Ratios were constructed using various combinations of adjusted (benefit) and unadjusted (eligibility) monthly and annual income amounts, as well as shelter costs which included (eligibility) and excluded (benefit) electricity payments. For all cases where a ratio identified an affordability problem (i.e., resulted in a number greater than or equal to .30) and the respondent had given his or her permission for the survey and administrative data to be matched, an in-depth, case-by-case analysis was conducted to determine the nature of the affordability problem finding. Any irregularities were followed up with telephone calls to tenants for clarification. Upon completion of the follow-up calls, data errors which had been identified were corrected and the ratios re-calculated.

The most frequent explanation (a third of the explanations) of apparent affordability problems reflected a discrepancy between the guidelines which are used to deliver social housing programs in the provinces and the federal government definition of core need. First, under social housing programs, electricity is not considered an allowable shelter cost when determining rents that are geared-to-income (RGI) and so it is not factored into the equation. This is called the benefit definition. However, electricity is included in shelter costs when determining whether an individual is in core need. Therefore the ratio of shelter costs-to-income will often be greater when calculated under the core need definition than under the benefit definition employed by housing projects when calculating rents.

Further, two provinces (one of which, British Columbia, was included in the sample) calculate RGIs based on 30 per cent of a tenant's adjusted income. Under the current definition, any residents of social housing programs in these two provinces would be in core need if their household did not have income adjustments.

Another common source of error (a fifth of the explanations) in the determination of affordability problems related to how rental payments were reported by tenants on the survey. Tenants may not be aware that their rental payments include surcharges which are added on to the cost of their occupancy (the RGI calculated rent). If tenants were not aware of this, they reported an inflated rental payment which included these surcharges. When ratios were recalculated, where it was possible to identify these surcharges, rents were modified to exclude the extra payments from the rental payment. Services such as parking and cable were dropped and electricity payments were redefined as an additional monthly payment (as electricity is an allowable shelter cost under the eligibility definition).

Respondent error was also a recurring explanation of apparent affordability problems. Respondent errors took many forms: transcription error (e.g., recording $1,300 instead of $13,000); excluding certain sources of income from total household income (i.e., income of dependents); and recording a net rather than gross income amount. As well, on occasion, not only did the reported rent already include other charges, for example for electricity, but respondents also listed them as additional payments, which further inflated total shelter costs.

The shelter-to-income ratio used most commonly in past evaluation research is the eligibility definition ratio which includes electricity payments and uses the previous year's annual income (i.e., SEOA). This ratio identifies both true and false causes of affordability problems; it was least effective in terms of not identifying affordability problems when they did exist and in identifying affordability problems when they did not exist.

The eligibility ratio (i.e., including electricity payments) which uses the previous month's income (i.e., SEOL) was the "best" ratio in terms of accurately identifying affordability problems as this ratio identified a much higher proportion of true as opposed to false affordability problems.

The "matrix" method of collecting more detailed income data is not recommended. Ratios which used matrix amounts in the income component tended to falsely identify an affordability problem when one did not exist more often than ratios which used a single amount.

SOMMAIRE

L'élimination des problèmes de logement pour les clients des programmes sociaux, afin qu'ils puissent quitter les rangs de ceux qui ont des besoins impérieux de logement, figure parmi les principaux objectifs des programmes actuels du gouvernement fédéral en matière de logement social. La notion de «besoins impérieux de logement» s'applique aux ménages :

- qui occupent un logement surpeuplé ou de mauvaise qualité et qui consacrent actuellement au logement moins de 30 % de leur revenu, mais pour lesquels les frais de logement de base pour un logement de taille et de qualité convenables dans la même zone de marché, représenteraient 30 % ou plus de leur revenu; ou

- qui consacrent déjà au moins 30 % de leur revenu pour se loger, mais qui auraient à débourser encore davantage pour un logement de taille et de qualité convenables dans la même zone de marché.

Plusieurs évaluations de programmes effectuées récemment ont révélé qu'un certain nombre de résidents dans des ensembles de logement social consacrent 30 % ou plus de leur revenu pour se loger, et ce même si les échelles de loyers proportionnés au revenu qui sont applicables dans leur cas indiquent qu'ils devraient en consacrer moins de 30 %. On dit alors que ces résidents éprouvent des problèmes d'abordabilité pour se loger.

L'occurrence de ce problème d'abordabilité peut cependant s'expliquer par plusieurs hypothèses. En fait, il peut véritablement y avoir un problème d'abordabilité face au logement, ce qui voudrait dire que les programmes sociaux n'atteignent pas l'objectif du gouvernement fédéral qui vise à éliminer les besoins impérieux chez les ménages à faible revenu. Par ailleurs, cette constatation peut aussi être liée à une question de méthodologie; ainsi, l'évaluation des revenus et des frais de logement issue de la collecte de données d'enquête pourrait être erronée, ou encore, la définition des composantes qu'il faut inclure dans les estimations de revenu n'est pas la même que la définition utilisée pour déterminer les besoins impérieux.

La présente étude vise à faire la lumière sur les problèmes d'abordabilité que semblent éprouver les résidents de logements sociaux, en prêtant une attention particulière aux méthodes d'évaluation. Le but de l'étude est d'examiner l'exactitude des réponses aux questions posées dans les enquêtes antérieures afin d'évaluer le revenu des ménages et les frais de logement, et déterminer l'origine de toute inexactitude systématique. À cette fin, on a effectué des entrevues avec les administrateurs de 13 ensembles de logement social situés à Terre-Neuve, au Québec, en Ontario et en Colombie-Britannique. Les dossiers administratifs des locataires ont été examinés et une enquête auprès des locataires de ces ensembles a également été effectuée. Deux méthodes d'enquêtes ont servi à l'étude : la première a été de reprendre les mêmes questions utilisées lors des recherches antérieures et l'autre a été de recueillir des renseignements plus détaillés au moyen d'une matrice de sources de revenu du ménage.

Vingt et un rapports entre les frais de logement et le revenu ont été conçus et appliqués aux données d'enquête sur les locataires. Cinq rapports utilisaient des données d'enquête de la formule abrégée comportant les mêmes questions posées lors des recherches antérieures, et 16 s'appuyaient sur des renseignements détaillés provenant de la formule non abrégée. Dans notre recherche, l'analyse s'est surtout concentrée sur les renseignements obtenus par le moyen des cinq rapports utilisant la formule abrégée. On présente deux facteurs comme justification : d'abord, la possibilité d'établir des comparaisons avec les recherches antérieures et ensuite, la confiance accrue en un échantillon plus large - seulement 25 % des répondants ont reçu la formule d'enquête non abrégée.

Les rapports ont été créés à partir de diverses combinaisons de revenus annuels et mensuels, redressés (subvention) et non redressés (admissibilité), et de frais de logement, qui englobaient (admissibilité) et excluaient (subvention) les paiements pour l'électricité. Dans tous les cas où le rapport révélait l'existence d'un problème d'abordabilité (c.-à-d. lorsque le rapport était égal ou supérieur à 0,30) et où le répondant était d'accord pour que l'on rapproche les données de l'enquête avec celles des dossiers administratifs, nous avons procédé à une analyse approfondie pour déterminer la nature du problème d'abordabilité. En cas d'irrégularités, on appelait les locataires pour obtenir des précisions. Après ces appels de suivi, les erreurs de données étaient corrigées et les rapports étaient calculés à nouveau.

La raison qui faisait surface le plus fréquemment, soit dans le tiers des cas, pour expliquer les problèmes apparents d'abordabilité était l'écart entre les lignes directrices utilisées pour l'application des programmes de logement social dans les provinces et la définition fédérale de besoin impérieux. Tout d'abord, aux termes des programmes de logement social, l'électricité n'est pas acceptée comme dépense aux fins du calcul des frais de logement pour déterminer les loyers proportionnés au revenu, donc ces frais n'entrent pas dans l'équation. Il s'agit ici de la définition aux fins de la subvention. Par ailleurs, l'électricité fait partie des frais de logement lorsqu'il s'agit de déterminer si une personne éprouve des besoins impérieux. Ainsi, le rapport entre les frais de logement et le revenu sera souvent plus grand dans le cadre de la définition aux fins des besoins impérieux qu'il ne le serait en vertu de la définition aux fins de la subvention; notons que cette dernière définition est celle qui est utilisée par les ensembles de logement pour calculer les loyers.

En outre, deux provinces (dont la Colombie-Britannique qui faisait partie de l'échantillon) calculent les LPR en fonction de 30 % du revenu redressé du locataire. Si l'on applique la définition actuelle, tous les résidents d'ensembles de logement social de ces deux provinces éprouveraient des besoins impérieux si leur ménage n'avait pas de redressements de revenu.

Une autre source d'erreur (retrouvée dans le cinquième des cas) quand il s'agit de déterminer les problèmes d'abordabilité, était reliée à la façon dont les versements de loyer étaient indiqués par les locataires dans l'enquête. En effet, les locataires peuvent ne pas savoir que leurs loyers englobent des suppléments qui s'ajoutent aux coûts d'occupation (le loyer calculé selon les échelles de LPR). Si les locataires n'étaient pas au courant, ils ont indiqué un loyer qui était alors gonflé, puisqu'il englobait ces suppléments. Lorsque l'on a refait le calcul des rapports dans les cas où il était possible d'identifier les suppléments, les loyers ont été modifiés pour exclure les paiements supplémentaires du montant de loyer. On n'a pas compté le coût de services comme le stationnement et le télécâble, et les paiements d'électricité ont été redéfinis comme un paiement mensuel additionnel (puisque l'électricité est une dépense acceptable aux termes de la définition d'admissibilité).

Les erreurs des répondants offrent aussi une autre explication aux problèmes apparents d'abordabilité. Ces erreurs revêtaient plusieurs formes : par ex., les erreurs de transcription (par ex., 1 300 $ plutôt que 13 000 $); l'exclusion de certaines sources de revenu du ménage (par ex. le revenu de personnes à charge); et l'indication d'un revenu net plutôt que brut. Aussi, à l'occasion, non seulement les loyers signalés englobaient-ils déjà d'autres charges, notamment pour l'électricité, mais les répondants les indiquaient comme paiements additionnels, ce qui contribuait à gonfler encore davantage le total des frais de logement.

Dans les projets d'évaluation antérieurs, le rapport des frais de logement au revenu qui a été le plus souvent utilisé est celui qui est lié à la définition déterminant l'admissibilité, qui englobe les paiements pour l'électricité et qui se fonde sur le revenu annuel de l'année précédente. Or ce rapport fait ressortir des causes vraies et fausses de problèmes d'abordabilité; il s'est révélé le moins efficace, car il ne trouvait pas de problèmes d'abordabilité là où il y en avait et il en décelait là où il n'y en avait pas.

Le rapport déterminant l'admissibilité (incluant les paiements pour d'électricité) fondé sur le revenu du mois précédent s'est avéré le meilleur pour déceler les problèmes d'abordabilité, puisqu'il a permis de découvrir une plus forte proportion de véritables problèmes d'abordabilité.

La collecte de données détaillées par matrice n'est pas recommandée. En effet, les rapports qui se sont fondés sur des chiffres de matrice pour la composante revenu avaient tendance à déceler plus souvent des problèmes d'abordabilité là où il n'y en avait pas, comparativement aux rapports qui se fondaient sur un seul montant.

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CHAPTER

1 INTRODUCTION

Current federal social housing programs hold as an important objective the elimination of housing problems of program clients in order to remove them from core housing need. Households in core housing need are defined as those who:

- occupy a crowded or inadequate dwelling and who currently pay less than 30 per cent of their income for shelter, but for whom basic shelter costs for an adequate and suitable dwelling available in their market area would consume 30 per cent or more of their income; or
- pay 30 per cent or more of their income for shelter and for whom an adequate and suitable dwelling available in their market area would consume 30 per cent or more of their income.

Several recent program evaluations have revealed that some residents of social housing projects are paying 30 per cent or more of their income on shelter, despite the fact that applicable rent-to-income scales indicate that they should be paying 30 per cent or less. This is referred to as an affordability problem.

1.1 Hypotheses About the Affordability Problem Findings

There are several hypotheses about the origin of this affordability problem finding. There may, in fact, be a true affordability problem, which would

indicate that the programs are not achieving their objective of eliminating core need among low income households. On the other hand, the pervasive finding of an affordability problem could be tied instead to methodological issues. For example, CMHC program evaluations typically gather information from clients of housing programs about their household incomes and shelter costs. This data is frequently collected through questionnaire surveys. It may be that there is measurement error in the estimates of income and/or shelter costs. It may also be that the estimates are accurate, but that the definition of what should be included in the estimate is not consistent with the definition used in determining core need. Each of these hypotheses is briefly elaborated upon below.

(a) Measurement Error

Household income and shelter cost data are provided by clients of programs undergoing evaluation. This information is typically collected via a self-completed questionnaire. It is not expected that respondents would have accurate figures readily available, therefore, they are simply asked to provide an estimate of each of these figures. The estimates provided are used to calculate the shelter cost-to-income ratio, which is then used to estimate the incidence of an affordability problem.

It becomes clear, then, that if either or both of the two estimates are biased in any way, the shelter cost-to-income ratio will also be biased, and subsequently, so will the estimate of the incidence of an affordability problem. For example, a tendency for shelter costs to be overestimated and/or for income to be underestimated (or under-reported) would result in higher shelter cost-to-income ratios and, therefore, a higher estimate of the incidence of affordability problems.

Even if the estimates are unbiased, by virtue of the fact that they are estimates, a distribution of shelter cost-to-income ratios exists around the true ratio of .25. Some ratios at the tail end of this distribution would be above .30 and thus would

indicate an affordability problem, despite the fact that the finding is the result of having a distribution of estimated ratios around the true value.

In addition, other charges may be included in the basic rent which are not eligible shelter costs, such as parking, cable and memberships. If any of these ineligible expenses are not removed from the total calculation of shelter costs, the estimates will be inflated through this reporting error and result in higher shelter cost-to-income ratios, increasing the incidence of an affordability problem finding.

(b) Definition of the Indicator

It may be that survey respondents are providing accurate estimates of both their shelter costs and income, but that what they consider to be valid components of each of these figures is different from what is included in the formal definitions used in the calculation of shelter cost-to-income ratios. For example, the core housing need definition of eligible shelter costs includes rent and utilities (including electricity) where they are paid separately from rent.

However, guidelines used by many public housing authorities to determine rents in rent-geared-to-income (RGI) housing exclude domestic electricity payments although they are included when determining whether someone falls within core need. Thus, inconsistencies in the definition of shelter cost-to-income ratios may generate cases of affordability problems.

(c) Non-Achievement of Objectives

Finally, we must also acknowledge the possibility that the central objective of the federal government to eliminate affordability problems among their low income clients is simply not being achieved. If the research demonstrates that there is no bias being introduced through methodological effects, the conclusion will

appropriately be that there truly is an affordability problem. If, however, measurement bias is occurring, then future evaluations of social housing programs will have to take the findings into account in developing methodologies for collecting this information from clients or at least recognize the limitations of the approach.

1.2 Overview of the Research

The purpose of the present study is to examine the accuracy of responses to questions used in previous program evaluations to assess household income and shelter costs and determine the origin of any systematic inaccuracies. The report, therefore, concentrates on the measurement of affordability problems using instruments based on core housing need methodology. These will be referred to as the eligibility measures of housing affordability as distinct from benefit measures used by housing authorities to set rents.

The findings of this research will contribute to improvements in the current survey method of collecting this information. This study used three sources of data:

- interviews with housing project administrators, which provided a general overview regarding RGI setting policies for each of the sampled projects;
- a review of administrative files, which consisted of the collection of administrative data on income and shelter costs used in the calculation of rents; and
- a survey of tenants of a sample of non-profit-housing projects committed since 1985.

This report reviews the methodology employed in the research, provides details on the analyses conducted on the data as well as on the resultant findings of real and artificial affordability problems and presents recommendations for

improvements to the income and shelter cost data collection sections of future CMHC questionnaires.

CHAPTER

2 METHODOLOGY

This chapter provides an overview of the methodology utilized in this research. Complete details of contact procedures followed to obtain the sample, technical information about the sampling, and logistics related to the administration of the survey are available from the Program Evaluation Division of CMHC.

2.1 Methodology Overview

From a methodological perspective, there were three stages to this research: first, to replicate the findings of past evaluations by using the same survey instrument (Phase I); second, to obtain additional information from reliable sources in order to be able to explain the affordability problems as found in Phase I and in previous evaluations (Phase II); and a final step (Phase III) which involved the application of the additional information to the data in order to have a second look at the incidence of affordability problems.

Phase I, therefore, consisted of a survey of tenants about income and shelter costs using a questionnaire with the same wording and format as past CMHC questionnaires. This questionnaire is presented in Appendix A. A revised version of the tenant questionnaire was also used. This revision was an expansion of the original

questionnaire and asked for much more detailed information about income and shelter costs. It is also presented in Appendix A.

There were two sources of additional information accessed under Phase II. The first source was the administrative data contained in the individual project files. The administrative data included the project's record of each household's income as well as details on the shelter costs each household was charged. The second source of information was the tenants themselves. During the analysis component of the research, tenants were telephoned to help clarify anomalies found either in the survey data alone or in the comparison of the survey data to the administrative data. It should be noted that all tenants were asked on their questionnaire for permission to compare their survey information to that contained in the administrative files. About 80 per cent of tenants who responded agreed to the matching and comparisons were conducted only on the data from tenants who agreed.

Finally, in Phase III, adjustments and corrections to the data were made using the information obtained in Phase II. The shelter cost-to-income ratios were then recalculated to assess the incidence of affordability problems using a cleaner data set.

The following sections provide further detail on the procedures carried out in the conduct of this study.

2.2 Sampling

The sample was formed using a two-stage cluster procedure: projects were the clusters and a census of all tenants living in the non-profit housing projects selected for the study was the second stage. A target survey sample of approximately 300 tenants, spread across 12 projects in four regions (Atlantic, Québec, Ontario and the West) and located in metropolitan areas was suggested in the Request for Proposal (RFP). As a result of revisions to the survey design, a sample frame of approximately

500 tenants was recommended by the researchers, spread across 12 projects and four regions, in order to fulfil the target survey sample of 300. This required sampling projects with a higher than average number of units.

First, projects were chosen randomly within pre-selected urban centres using lists provided by CMHC. The lists were filtered to exclude projects with 40 or fewer units. These filtered lists formed the project sample frame. Crosstabulations of type of heat source by type of project (public vs. private) by type of building (row, apartment, or other) were conducted for each city to ensure that the attributes of the final random sample of projects selected were roughly representative of the attributes in the sample frame itself. Over the course of preliminary contacts with housing administrators, it became clear that the anticipated response rate of 60 per cent might be somewhat optimistic. To address this concern, it was decided that the largest projects should be targeted. Since affordability problems seem to persist in housing projects of all sizes, it was decided that any bias introduced by this decision would be more than offset by the improvement in sample size.

Once the initial list of sampled projects was determined, provincial housing agencies were approached in order to identify the appropriate local housing authorities responsible for administering the various projects. Project administrators were then contacted by telephone and asked to participate in the study.

Once participation was confirmed, arrangements were made for lists of tenants' names and addresses to be compiled. Where projects had assisted and unassisted units, the unassisted units were deleted from the tenant lists. Copies of the interview guide and administrative data collection forms were sent to administrators prior to the interview and administrative data review. As soon as the questionnaires were finalized, both long and short versions of the questionnaire were also sent for administrators' reference in case they received any calls from tenants.

The final sample of tenants was 776 from 13 projects located in St. John's (3), Montréal (3), Ottawa (2), Toronto (2) and Vancouver (3). Demographic information on the sample is presented in Appendix C.

2.3 Instrument Design

Three instruments, derived from the drafts presented in the RFP, were designed in close conjunction with CMHC. They are:

- Project administrator interview guide;
- Administrative data capture form; and
- Tenant questionnaires.

Design of the interview guide consisted primarily of refining the question wording and sequencing as well as formatting the presentation of the draft to facilitate data capture. The *Guidelines and Procedures Manual for the Non-Profit Program* and other sources were employed in order to determine response categories for inclusions and exclusions to the income and rent calculations. The administrative data form was designed to capture income and shelter information corresponding to the most detailed sections of the tenant questionnaire to facilitate comparison during analysis.

Two versions of the tenant questionnaire were developed, a long and a short form. Due to the nature of the study (i.e., the desire to replicate previously used methodologies and the affordability problems that they found), there were limitations on the extent to which the questionnaires could or should be modified. The short form contains some of the questions typically used for program evaluations, so it was necessary to remain true to the original question wording and instrument format and style (see Appendix A). The format of the long form mirrored that of the short, but included additional detailed breakdowns of income (also see Appendix A). The purpose of the long form was to collect extremely specific information in order to

determine which method of collecting income data would result in the most accurate response, as well as to pinpoint any potential sources of error.

2.4 Pretesting

The interview guide and data capture forms were pretested in St. John's. St. John's was selected for the pretest because these projects were among the first for which participation was confirmed and tenant lists compiled. In response to a number of issues which were raised during the pretest, both the guide and the data capture forms were modified.

Pretesting of questionnaires is typically undertaken in conditions which simulate those to be encountered during the actual survey. The objectives are to test the instrument in terms of the reaction of respondents to its presentation and to the sequencing and clarity of the questions. Pretesting provides an opportunity to alter aspects of the survey instrument if the need arises. As the purpose of the short version of the tenant questionnaire was to test the measurement of survey items already in use, changes to wording or sequencing were not a possibility. The long version, however, could be modified somewhat as it experimented with different ways of collecting similar information. Consequently, this version was pretested.

The long version of the tenant questionnaire was pretested in English in St. John's. Five tenants were contacted by phone and asked if they would be willing to participate in a pretest. The instruments were sent via courier to a research assistant, dropped off by hand to tenants and picked up three days later. Only one minor formatting modification resulted from the pretest.

2.5 Administrative Data

Interviews with housing project administrators and the collection of income and shelter cost data from the administrative files took place in the latter half of May 1993. All research assistants were provided with information packages regarding the purpose and scope of the study and were thoroughly briefed on how to fill out the interview guide and data capture forms.

2.6 Tenant Survey

Individual tenant lists from each of the 13 projects were combined to form the sample frame which then constituted the mailing list. The list was proofed and all vacant, attendant care or market rent units were deleted. Each unit was assigned an identification number which consisted of a unique identifier and a project code. This identification number facilitated the tracking of survey responses as well as the ultimate goal of matching tenant data to the administrative data.

Tenants were designated to receive a long or a short version of the questionnaire using a systematic sampling method; every fourth unit in the sample was selected to receive the long version. Each survey package contained a questionnaire, a letter addressed to the occupant, a copy of *Safety Sense in the Home* as an incentive and a Special Letter envelope with Ekos' address affixed to it for the return. A total of 234 questionnaires were returned from the first mailing; this represents an overall response rate of 30 per cent. Response to the short form of the questionnaire was somewhat greater than that to the long form; 32 per cent of the short forms were returned as compared to 25 per cent of the long forms.

2.7 Reminder Calls

As questionnaires were received, they were deleted from an electronic database. The resulting database was then used to contact tenants. A total of 466 reminder calls were completed. Of these, 82 people said they had already returned the questionnaire, 166 indicated that they intended to return it, 67 said they did not plan on completing the survey and 151 claimed not to have received a questionnaire. It should be noted that of this latter group, only 10 addresses had changed substantially. It may be that this response was a "polite" or easy way of declining to participate or a means of concealing a literacy problem.

2.8 Second Mailing of Tenant Survey

To ensure that every effort was made to secure the highest possible rate of response, a second wave of the tenant questionnaires was added. Questionnaires were mailed to all tenants who had not yet returned a completed questionnaire by a given date, excluding those who had indicated during the telephone reminders that they did not intend to respond. Only the short form of the questionnaire was sent in the second wave. It was hoped that reducing the amount of time required for completion by these tenants who had not responded the first time would help increase the response rate. The second wave consisted of a mailout of 465 questionnaires. Of these, 129 were returned resulting in a second wave response rate of 28 per cent and an overall response rate of 47 per cent (or 363 questionnaires).

While overall response to the survey was not as high as had been hoped, the proportion of respondents who agreed to a matching of their survey data with the information contained in their projects' administrative files was substantially higher than expected. It had been hypothesized that only half of all respondents would agree to a matching; in fact, just over 80 per cent of tenants who returned a questionnaire

agreed (i.e., 293 tenants). Since only questionnaires that may be matched to administrative data are of interest for analysis, the low response rate is almost completely offset, in terms of the total available number of questionnaires for analysis, by the high proportion of agreement.

2.9 Data Base Management

The purpose of data base management is to transform survey data into a computerized format and create a usable file for the required analysis. All completed questionnaires were reviewed by trained research assistants for any necessary editing prior to data capture. Any irregularities in terms of illegible items or unclear entries were corrected. Open-ended items, such as type of utility surcharge or extra payments were coded for capture.

The data were subjected to rigorous range checks and consistency edits to ensure the cleanest possible data. Full sets of descriptive statistics, including individual case listings, were carefully reviewed for each of the three databases: the "short" tenant data, the "long" tenant data and the administrative data. These procedures are standard protocol for ensuring high data quality and, therefore, are assumed to be the same as would regularly occur during CMHC evaluations.

The review and coding process took on a new dimension in this study because outliers and possible respondent errors could be verified, at least to some degree, from administrative data. However, as this information would not typically be available to CMHC during a program evaluation, these types of corrections were not made at this point in the research to ensure that the Phase I data was a pure replication of that collected in previous surveys. As well, a number of questionable values were not recoded to missing values because it was assumed that they would be identified during further analysis and subsequently verified in the follow-up calls.

Consequently, missing and out-of-range values for a number of items were filled in during coding based only on other information *contained* in the tenant questionnaires. For example, with respect to whether an additional payment was made for various utilities and services, respondents were asked to indicate whether they had the service, if it was included in the rent or if they made an additional payment for it. Many respondents indicated a response *only* for those utilities or services for which they made additional payments; others were left blank. Research assistants re-coded the missing values for electricity to indicate that electricity was included in the rent (i.e., where no additional payment was indicated). As parking is not always available or required, and refrigerators and stoves are not always provided, coding of missing values for these services was not performed as it was not possible to determine the appropriate code. With respect to missing values for gas or oil, if the dwelling was heated electrically, gas and oil were re-coded to indicate that respondents did not have these services. If the dwelling was heated by any means other than electricity, missing values were not altered as it was not possible to do so accurately.

Other errors arose because a few respondents indicated the amount of their monthly rent and rent paid to-date in the wrong place (i.e., in the space allocated for the amount of an additional payment made for electricity) and therefore this was also corrected.

In a number of cases, when questionable income data were being verified to ensure that there were no coding or data entry errors (e.g., when the monthly amount reported was close to the annual amount reported), it was discovered that some of these problems were likely due to the respondent having missed a zero when entering the annual amount. These amounts were not corrected at this time because they would be detected and addressed during the analysis phase.

As demonstrated above, a considerable number of re-codes and edits were required subsequent to reviewing the data to address anomalies inherent in

collecting financial data. This ensured that the data were of the highest possible quality before pursuing analyses.

CHAPTER

3 SOCIAL HOUSING PROJECT RENT SETTING PRACTICES

The interviews with project administrators proved useful in a number of ways over the course of the analysis. First, they provided background information about social housing practices and set the context for specific projects. They also helped to clarify some of the data collected from the survey and the administrative review (e.g., on the long form of the questionnaire, a number of respondents did not specify what the "other" source of principal heat was; the administrative interviews revealed that it was gas-heated water). These interviews were particularly useful when shelter costs were examined during analysis, providing clarification of which shelter costs were embedded in the calculated rent and which costs were added to the calculated rent in the form of surcharges. A copy of the interview guide used for the discussions with project administrators is presented in Appendix B.

Eligibility Criteria

The majority of the project administrators stated that they followed provincial guidelines for determining whether applicants were eligible to receive subsidization. These are the *Core Need Income Thresholds* (CNITs) published by CMHC. Provincial agencies have developed point score systems for determining the priority of applicants and these vary from province to province and by type of project (e.g., seniors' residences). Generally, among most projects, persons with a disability were given priority. In the Newfoundland projects, priority was given to family violence

given priority. In the Newfoundland projects, priority was given to family violence victims and single parents. In the projects in Montréal, there was a local residency requirement in effect; while this might also have been in effect in the other urban centres, it was not explicitly stated. Some seniors' residences required that tenants be able to live independently.

Eligibility for federal/provincial social housing assistance is determined by CNITs which vary according to number of bedrooms required and local housing market rents. Types of income which were considered for the purposes of determining eligibility did not vary significantly from project to project. Generally, the following types of income were included in the calculation of household income for the purpose of determining eligibility (any exceptions are stated in parentheses):

- wages and salaries;
- net income from farm self-employment (it was indicated that this was not applicable in a number of cases);
- net income from non-farm self-employment;
- military pay and allowances;
- net income from roomers and boarders (five project administrators stated that roomers and boarders were not permitted; of these five, two indicated that if the situation were to occur, income from this source would not be counted, but the gross income of the "roomer or boarder" would be included in the total household income);
- investment income (investment income was imputed to cash and financial assets in two projects);
- capital gains or losses (capital gains were not included in two projects);
- social assistance;
- provincial income supplements;
- old age security, guaranteed income supplement, spouses's allowance;
- unemployment insurance benefits;
- other government sources; and
- retirement Pensions, superannuation and annuities.

Rent-Geared-to-Income Calculation

While the sources of income which were included in the determination of household income for the purposes of eligibility did not differ substantially from project to project, the exclusions and deductions which were applied to income for the purpose of calculating the geared-to-income rent did. Essentially all of the sources listed above were included in the calculation of income for benefit determination purposes, however, there were a number of "other" sources which were not. Some projects indicated specifically that alimony was included, others did not mention how alimony was treated; scholarships and bursaries were specified on some occasions as an "other source", whereas one project indicated that these sources were only included if they were received by the head of the household. Other exclusions included veterans' pensions, the Child Tax Benefit (formerly family allowance) and severance pay, for example.

Deductions tended to be applied consistently within provinces, but differently across provinces. In Newfoundland, earnings of children in excess of $5,800 per year were not included; a deduction of $1,000 per year per eligible individual was deducted from earned income and an additional $1,000 deduction for single parent families was also applied. In the province of Québec, projects deducted 10 per cent of earned income before calculating the rent. In Ontario, an earned income deduction of $900 per year was applied for individuals without dependents and $1,800 for those with dependents; income from children not in school was included at a rate of 12.5 per cent for the first $1,000 and 25 per cent for amounts above $1,000. Projects in British Columbia were supposed to apply an earned income deduction (although not all did); income from children was not included in household income unless the child was 19 years of age or older.

The manner in which rents were determined depended on whether social assistance was a source of income. Where social assistance was not involved as a

source of income, once the total household income was determined and the deductions applied, rents were calculated based on a fixed RGI rate of 30 per cent of income for projects in British Columbia and 25 per cent for projects in the other three provinces included in the study. Social assistance was handled in a number of ways. In Ontario and British Columbia, projects used rent contribution tables provided by the provincial housing authorities to set the rents. If income consisted of social assistance and some other source of income, the following procedures applied: in British Columbia, the rent calculation table was used for the social assistance amount and the fixed RGI rate was applied to the other amount, these amounts were then added together; in Ontario, if the other source of income fell below a threshold amount, the rent calculation table was used, otherwise, the fixed rate was applied only to the amount of the other source of income. Projects in the province of Québec applied the fixed RGI rate to all sources of income, regardless of whether social assistance comprised all or some of a tenant's income. In Newfoundland, the Department of Social Services effectively determined the rent that was charged to tenants whose income consisted solely or partially of social assistance; the project administrations then charged this amount for rent for social assistance recipients.

It should be noted that projects in British Columbia had a minimum allowable rent which was imposed by British Columbia Housing. If a calculated rent fell below this minimum rent, the minimum rent was charged, despite the fact that it might comprise more than 30 per cent of a tenant's income.

Shelter Benefits

It is helpful at this point to clarify certain terms associated with shelter costs which will be used throughout the remainder of this report. The terms of interest are: 1) occupancy cost; 2) calculated rent; 3) embedded; 4) included; and 5) rental payment.

Occupancy costs are the costs to the project associated with the services they are providing and which would normally be considered when setting a rent (e.g., management, structural repairs, water, cleaning of common areas, etc.). The *calculated rent* is the rent which the housing project computes based on a tenant's income. The term *embedded* is used to indicate that the cost of a service is contained within the calculated rent and cannot be separated out of the rent from all other occupancy costs. *Included*, on the other hand, is used to denote surcharges for services which are added to the occupancy cost or the calculated rent. Finally, the sum of the calculated rent plus any included surcharges equals a *rental payment.*

Overall, interviews revealed that space heat, water and water heat were generally embedded in the calculated rent in one manner or another. Tenants in two projects paid their space and water heating costs (gas) directly to a utility company. Their rents were reduced by a fixed amount depending on the size and type of dwelling. In these cases, the rental payment was less than the calculated rent because the calculated rent was reduced by an amount intended to reimburse tenants for their heating payments. Tenants in two other projects were surcharged for utilities, which technically included space heat, water, water heat and electricity. The cost of these services appear to account only for discretionary uses of electricity as the amount of the monthly surcharges were extremely low (e.g., $8, $15, $18 and $21 respectively for tenants in one, two, three and four bedroom dwellings) and did not seem to cover both discretionary uses and space heating.

Nine projects were heated with electricity. In only three of these cases were discretionary uses of electricity embedded in the calculated rent. For tenants in the other six projects, an electricity or utilities surcharge was levied (surcharges ranged among projects from $8 for a one bedroom in one project to $30 for a two bedroom in another project).

Four projects were heated with gas. In one case, electricity was embedded in the rent along with space and water heating. In another, space and water

heating were embedded in the rent, but payment was made to a utility company for discretionary uses of electricity. Tenants in the two remaining cases made payments for all services to utility companies. In these cases, as previously mentioned, tenants' calculated rents were reduced to compensate for these payments.

Electricity had been identified in the RFP as a potential source of measurement error when dwellings are heated electrically *and* tenants make electricity payments to a utility company. In this case, it is impossible to distinguish between the portion of an electricity bill that is for space heating and the portion for discretionary uses. This was not an issue for any of the projects in our sample. When dwellings were heated electrically, none of the tenants made payment to a utility company; it was either embedded in the rent or they were surcharged by the project administration. It should be noted, however, that for some projects in our sample located in Ontario, a portion of tenants' electricity bills *are* dedicated to water heating; rents are adjusted (reduced) accordingly by the project administration.

Review Process and Changes in Income

Rents were reviewed at least once a year and more often if a decline in income occurred (i.e., every reported decline resulted in a new review because the information had to be verified). In Ontario, the annual review is typically conducted on the anniversary of the date that the tenant moved in. By law, tenants must be given at least ninety days notice of any increase in rent, so reviews are usually conducted at least four months in advance of the increase. In other provinces, projects tended to conduct all of their reviews at the same time over the course of one or two months in a given year.

The income which was recorded for the purpose of calculating rents represented the current monthly rent at the time of the review. The exception to this was for projects in Montréal, where annual income for the previous year was recorded.

Tenants in all projects were required to notify the administration of *any* change in income. Rents were reduced immediately when income declined, generally for the first of the following month; only one project indicated that there might be a two-month lag between notification of a decline and the corresponding reduction in rent. One project indicated that the decline had to be of more than 10 per cent of their income and that rent reductions did not immediately apply to individuals receiving pension income.

In circumstances where income increased, rents were not typically raised immediately. In British Columbia, by law, a rent may only be increased once a year. In Ontario, tenants must be given 90 days notice of any increase. Projects in both Newfoundland and Québec indicated that rents were adjusted upwards only during the annual review process.

With respect to non-disclosure and the failure to report increases in income, a few sanctions exist. Project administrators have a number of options: a market value rent may be imposed if the tenant refuses to disclose income (e.g., tips); a back-charge or a retroactive rental increase may result if misrepresentation occurred; and finally, eviction is a last resort. In British Columbia, these types of cases are reported to the Housing Authority and they deal with the tenants on a case-by case basis.

CHAPTER

4 SHELTER COST-TO-INCOME RATIOS

The persistence of reported affordability problems among residents of social housing projects was hypothesized to be a consequence of one or more of the following:

- measurement error in reported incomes or shelter costs;
- inconsistency between the definition of the components of the affordability indicator (as applied by project administrators and CMHC and as interpreted by tenants) and the core need indicator; and
- programs not achieving their objective of eliminating core need among low income households.

This chapter describes the indicators that were developed to ascertain the extent to which each of these issues might be at the root of the apparent affordability problems among residents of RGI housing projects.

4.1 Background

The definition of an affordability problem used in previous evaluations of social housing programs was based on core need procedures. Shelter costs were determined by adding the basic rent paid in the previous month to any additional and

separate average monthly charges paid by the household for water, gas, oil and electricity (as described in the RFP). Household income was comprised of income from all sources received by all persons over the age of 15. In this report, shelter cost-to-income ratios based on these procedures are called eligibility ratios.

For the purpose of determining RGI benefits, shelter costs include only space heating, water, water heating, refrigerator and stove rental, if applicable, and rent. Electricity payments are only considered as an allowable shelter cost if the dwelling is heated by electricity. Household income is subjected to a number of adjustments which are described in a footnote later in this chapter. In this report, shelter cost-to-income ratios based on these CMHC guidelines are called benefit ratios.

Due to the difference between the core need and the benefit criteria definitions of the affordability indicator (i.e., the different manners in which electricity payments are considered) the RFP highlighted the two following issues: 1) electricity consumption; and 2) services embedded in rental payments.

The first concern stems from the fact that only the cost of electricity which is used to heat a dwelling is an allowable shelter cost for the determination of RGI benefits. However, if tenants make electricity payments directly to a utility company, it is not possible to discern what proportion of their electricity bill is dedicated to heating the dwelling (assuming electric heating) and what proportion is the result of other domestic uses of electricity (e.g., lighting, television, air conditioning, etc.). This makes it difficult to compute a shelter cost using only the basic eligible expenses. As it happened, however, no projects sampled contained units for which tenants paid their own electricity bill for space heating directly to a utility company.

The second issue revolves around supplementary services such as parking, cable and laundry which are not allowable shelter costs. These services may be embedded in the rent charged by the project (i.e., supplementary services provided by the project are contained *within* the calculated RGI rent) or may be included with

the calculated rent in the total monthly payment to the project (i.e., the project charges separately for these services over and above the calculated RGI rent, but tenants pay the total amount of these separate charges plus the rent as one monthly payment). Tenants may not recognize these as additional charges and, therefore, may include them in their reported total rental payment to the project.

Both issues result in the inclusion of other expenditures in the calculation of shelter costs (i.e., discretionary use of electricity or other services) which are not eligible under the definition used for the determination of geared-to-income assistance. These inclusions inflate shelter costs and may signal an apparent affordability problem where one does not, in fact, exist.

One of the challenges of defining the shelter cost-to-income ratios employed in the analysis phase was to create ratios which would isolate each possible biasing factor in order to be able to determine the extent to which it contributed to an apparent affordability problem.

4.2 Ratio Definitions

Multiple shelter cost-to-income ratios were designed for this study in order to illustrate the effects of different income and cost definitions on the measurement of affordability problems. Shelter cost calculations were fairly straightforward. Two types were used: one including and one excluding electricity payments (eligibility and benefit definitions, respectively).[1]

1. It should be noted that the benefit calculation included space heating when this was a clearly discernable payment for gas or oil; as stated earlier, no projects sampled contained units which paid their own electricity bill for space heating.

Income calculations were substantially more complicated and varied based on the available data (i.e., long form or short form) and on whether eligibility or benefit definitions were used.[2]

Survey data on income was collected in four ways; shelter costs captured in three ways. Income was captured as : 1) a single total annual amount for 1992 (short and long forms); 2) last month's total income amount (short and long forms); 3) total (last) monthly income broken down by source and household member (long form only); and 4) total annual 1992 income broken down by source and household member (long form only).

Shelter costs were captured as: 1) last month's rent plus average monthly amounts for other charges (short form); 2) single (last) monthly amounts (long form); and 3) total payments to-date in 1993 (long form).

2. From the CMHC "Guidelines and Procedures Manual" for Social Housing — Non-Profit Program.

For the purpose of determining eligibility under this program, total household income is the total income of the household (before tax) from all sources for all persons in the household 15 years of age and over, as defined by Statistics Canada in its most recent Household Income, Facilities and Equipment (HIFE) data base documentation.

For purposes of establishing the rent to be paid, the Active Party will assess the annual "adjusted income" of the household in the following manner:

1. Assess the income, in whatever form received, of each member of the household; income includes, for example:

- salary, wages, commissions, rents, investment income, part-time earnings, tips, alimony maintenance payments and child support received from a separated or divorced spouse;
- Unemployment Insurance Benefits, Social Assistance, Mother's Allowance, Welfare;
- Old Age Security Pension, Guaranteed Income Supplement, CPP/QPP pension, private pensions or annuities;
- the first $5,800 income, in whatever form received, of children or dependents of the household.

2. Exclude from income the following, for each household member if applicable:

- family allowances, if they were included previously;
- living-out or travelling allowances of any household member;
- monies received from insurance settlements, inheritance, disability awards, sale of effects, capital gains;
- the income, in whatever form received, of children or of dependents if such children or dependents are in full-time school attendance;
- work-related earnings of a single parent, working spouse or any other household member, including children, up to $1,000 per year per qualifying household member;
- for children or dependents not in full-time school attendance the above-mentioned $1,000 deduction can be applied against income in whatever form received.

3. Calculate the total income of all household members, after having considered all eligible income exclusions. The result of this is the "annual adjusted income" of the household.

Exhibit 4.1 presents the survey items which captured the income information as single amounts and were common to both the long and short forms. Exhibit 4.2 replicates the income matrix from the long form used to record last month's income by source and by recipient. The matrix for the 1992 annual income was the same except for the specified time period.

EXHIBIT 4.1
Single Amounts for Income Information

In 1992, considering all sources, what was your total household income before deductions? (Please consult 1992 tax returns, if filed, or any other records you may have on income.)

Total income for ALL OF 1992: $_____.00

What was last month's total household income, from all sources, before deductions.

Total income for LAST MONTH: $_____.00

EXHIBIT 4.2
Last Month's Income Matrix - Long Form

During the last month, did you or any other member of your household receive any income from the following sources? If yes, please indicate the amount received by each individual household member to the nearest dollar, thinking about the persons listed in question 5. (Please consult any records you may have on income, including cheque stubs.)

				Monthly Amount				
		No	Yes	Yourself	Person 2	Person 3	Person 4	Other Persons shown in Question 5
(a)	Earned income (full or part-time) such as wages or salaries (before deductions) or income from self-employment such as baby sitting, sales (e.g., Avon), etc.	[ ]	[ ]	_____	_____	_____	_____	_____
(b)	Income from roomers and boarders (not related)	[ ]	[ ]	_____	_____	_____	_____	_____
(c)	Family allowance (Child tax benefit)	[ ]	[ ]	_____	_____	_____	_____	_____
(d)	Old age security pension; guaranteed income supplement; spouses' allowance from federal government only; Canada or Quebec pension plan benefits	[ ]	[ ]	_____	_____	_____	_____	_____
(e)	Unemployment Insurance benefits	[ ]	[ ]	_____	_____	_____	_____	_____
(f)	Social assistance (or welfare) (total amount of cheque)	[ ]	[ ]	_____	_____	_____	_____	_____
(g)	Provincial income supplements	[ ]	[ ]	_____	_____	_____	_____	_____
(h)	Child support payments, alimony	[ ]	[ ]	_____	_____	_____	_____	_____
(i)	Retirement pensions or superannuations resulting from membership in employers' pension plans.	[ ]	[ ]	_____	_____	_____	_____	_____
(j)	Any other income (e.g., interest, strike pay, bursaries or grants, etc.) (PLEASE SPECIFY)							
	_____	[ ]	[ ]	_____	_____	_____	_____	_____
	_____	[ ]	[ ]	_____	_____	_____	_____	_____

For the purpose of the shelter cost-to-income ratios, the eligibility definitions of income typically included all sources of income; the benefit definitions excluded income of children or dependents in excess of $5,800 and family allowance and applied an earned income deduction of $1,000 for each eligible member of the household.[3]

The benefit definition of income was applied to the annual and monthly matrix amounts on the long form by excluding the reported family allowance amounts; the earned income deduction was applied where earned income was reported. The benefit definition of income for short form data was imputed from the total annual amount for 1992 by estimating the family allowance amounts for that year (calculated using the number of children reported on the survey) and an earned income deduction based on information captured from the administrative files.

As a result of the different ways that the income and shelter cost data were collected on the long and short forms, separate, but corresponding, ratios had to be applied to the data from each of the forms. Five ratios were constructed to be applied to data from the short form; 16 were constructed for data from the long form.

In order to facilitate their identification, ratios are distinguished by four- or five-letter acronyms. The first column indicates the type of questionnaire (i.e., the long or short form). The second column refers to whether the ratio includes or excludes electricity payments. Letters in the third column refer to whether additional payments were based on an estimate of average monthly payments, estimated last month's payments or average monthly based on actual year-to-date payments for 1993. The final column represents what type of income data was employed: annual or monthly, and single amounts or totals derived from the long form income matrix.

3. A further definition was formulated to exclude income of household members under the age of 15. Ratios calculated using this income definition were not applied, however, as no income was reported for any individuals under the age of 15.

Given the focus of the present research on the replication of program evaluation methodologies, the remainder of the text will deal only with the short form of the questionnaire. The ratio definitions and affordability problem incidence and explanations based on the long form of the questionnaire are presented in Appendix D.

Short Form Ratios

S (for short form of questionnaire)

E (to indicate that electricity payments, if extra, are included)
N (to indicate that electricity payments, if extra, are not included)

O (estimated average monthly additional payments)

A (to indicate income calculated from annual amount)
L (to indicate income calculated from last month's amount)
AI (to indicate income calculated from annual amount, imputing the family allowance and earnings deductions)

Eligibility Definition:

S-E-O-A Shelter includes rent plus any extra payments made for water, electricity, gas or oil and refrigerator or stove rental.

Income is a single annual amount for 1992 divided by 12 to obtain a monthly amount.

S-E-O-L Shelter includes rent plus any extra payments made for water, electricity, gas or oil and refrigerator or stove rental.

Income is a single amount for the previous month.

Benefit Definition:

S-N-O-A Shelter includes rent plus any extra payments made for water, gas or oil and refrigerator or stove rental but **not** for electricity.

Income is a single annual amount for 1992 divided by 12 to obtain a monthly amount.

S-N-O-AI Shelter includes rent plus any extra payments made for water, gas or oil and refrigerator or stove rental but **not** for electricity.

Income is a single annual amount for 1992 less estimated family allowance and earned income deductions, divided by 12 to obtain a monthly amount.

S-N-O-L Shelter includes rent plus any extra payments made for water, gas or oil and refrigerator or stove rental but **not** for electricity.

Income is a single amount for the previous month.

It should be noted that there are caveats associated with a number of these ratios. One of the benefit ratios (SNOAI) imputes income as per the benefit definition. Subtracting family allowance and the earnings deduction from the short form income data is flawed, however, because there is no way of knowing if respondents have included family allowance in their household income or (despite information from the administrative data) if one of the sources of their income is *earned* income (i.e., from wages).

As well, the other two benefit ratios (SNOA and SNOL) have weaknesses as they contain an adjusted shelter cost component (excluding electricity) and are divided by a non-adjusted income component.

CHAPTER

5 AFFORDABILITY PROBLEM FINDINGS AND EXPLANATIONS

5.1 Phase I: Replication of Previous Findings

Once the various shelter cost-to-income ratios were calculated for each tenant, univariate frequencies were run to determine the extent of affordability problems in the sample. Of interest was how many of the calculated ratios were greater than or equal to .30. This analysis roughly replicates what would typically be found in CMHC evaluations when the only source of data is tenant questionnaires.

The results of the ratio calculations for the five short-form ratios are presented in Exhibit 5.1. This exhibit displays the distribution of values lying within various interval ranges for the five ratios. As indicated by the bottom three rows of the exhibit, the proportion of tenants displaying an apparent affordability problem varies considerably from ratio to ratio (from 31.6 to 41.3 per cent).

The number of affordability problems identified by the various ratios ranges from 66 to 85 (out of a possible 116 cases in which at least one of the five ratios was greater than or equal to .30).

EXHIBIT 5.1
Distribution of Short Form
Shelter Cost-to-Income Ratios

	Eligibility Ratios (including electricity)		Benefit Ratios (excluding electricity)			FCHP Ratio* (including electricity)
	Annual Income (SEOA)	Last Month's Income (SEOL)	Annual Income (SNOA)	Annual Income with Adjustments (SNOAI)	Last Month's Income (SNOL)	Last Month's Income (≈ SEOL)
Less than .15	1.9	1.0	3.0	3.9	2.4	3.2
.15 to .19	5.8	2.9	5.3	5.3	2.9	6.1
.20 to .24	10.7	12.9	15.0	11.7	18.2	13.3
.25 to .29	40.3	43.5	43.2	44.7	45.0	28.6
.30 to .34	22.8	23.9	16.5	17.5	17.2	20.6
.35 to .39	6.3	3.3	4.9	4.4	4.8	15.1
.40 to .44	1.5	5.7	1.5	2.9	3.8	4.2
.45 to .49	1.5	1.4	1.0	1.0	1.0	2.8
Over .50	9.2	5.3	9.2	8.7	4.8	6.1
% cases where ratios are greater than or = to 30%	41.3	39.7	33.0	34.5	31.6	48.8
number of cases where ratios are greater than or = to 30%	85	83	68	71	66	n/a
Total number of valid cases	206	209	206	206	209	n/a

Note: Percentages are valid per cent of cases.

* Federal Co-operative Housing Program (FCHP) Ratio: Survey of Co-operative Housing Residents, Program Evaluation Division, CMHC 1990.

As presented in Exhibit 5.1, ratios calculated under the eligibility definition (i.e., including electricity, signified by a 'E' in the name) signalled a greater number of affordability problems than those under the benefit definition (which excluded electricity, signified by an 'N' in the name).

With respect to ratios applied to data from the short form, affordability problems were more frequently identified when:

- annual income was used;
- electricity was included in the calculation; and
- the benefit definition of income was imputed (that is, estimated earned income and family allowance deducations were applied).

These findings are relatively consistent with results of evaluations conducted by CMHC. For example, a survey of Co-operative Housing Residents in 1990 also found that the number of affordability problems declined noticeably if electricity was excluded from the calculation of the ratio. In contrast, while the number of affordability problems rose slightly with the use of annual income in the current study, the difference here also only accounts for less than two per cent (representing only two cases). In the 1990 study, the number of affordability problems declined slightly (i.e., by 1.1 per cent) when average monthly income was used instead of the amount for the previous month.

5.2 Phase II: Case-by-Case Analysis of Affordability Problems

Once affordability problems were identified, an in-depth, analysis of each case which manifested a ratio greater than or equal to .30 was conducted. Raw survey and administrative data were scrutinized and compared in order to determine why tenants might appear to be paying 30 per cent or more of their income on shelter costs. The results of this analysis (i.e., the explanations which were attributed to each case

manifesting a ratio greater than or equal to .30) are discussed in detail in the following section and presented later in Exhibit 5.2.

For some of the more ambiguous reasons (e.g., an income decline which seemed not to have been reported or rental or income discrepancies between the survey and the administrative data), it was necessary to contact respondents directly in an attempt to obtain clarification.

Telephone follow-up calls were made to tenants in order to clarify any outstanding anomalies which could not be resolved through a comparison of survey and administrative data. Of the 116 cases in which an affordability problem was identified by at least one short form ratio, 67 follow-up calls were made. Of the 67 tenants that were called: ten could not be reached (despite repeated efforts); telephone listings were not available for seven; and one tenant refused to answer any questions, leaving a total of 49 successfully completed calls. For the most part, the calls were quite well received as tenants did not express annoyance with research assistants about being contacted on yet a fourth occasion (initial contact, telephone reminder, second wave and finally, the telephone follow-ups).

After preliminary analyses were conducted and the follow-up calls completed, corrections were made to the data where possible (Phase III). The ratios were then recalculated and the number of affordability problems identified by short term ratios decreased. These results and final ratio calculations are presented later in the document (Chapter 6).

Detailed explanations as to why shelter cost-to-income ratios equal or exceed 30 per cent are itemized in the following section. Nine different explanations were found which include both true and false instances of affordability problems. Examples of selected explanations are presented in Appendix E to illustrate the calculations involved and how particular components contribute to the finding of an affordability problem. It should be noted that the figures presented in the examples

in Appendix E have been rounded to ensure confidentiality of tenants' survey responses.

5.3 Explanations for Affordability Problem Findings

Nine different explanations for affordability problem findings, encompassing both "true" and "false" problems, were found. They are as follows: income decline not reported; administrative factors; utility payments included in eligibility ratio - not included in RGI calculation; seasonality-utility payments higher than costs allotted by project; rental payment as per survey includes other services - not included in RGI calculation; rent based on current income which is different from the 1992 reported income used in survey calculation; respondent error; rental discrepancy (survey vs. administrative data); and income discrepancy (survey vs. administrative data). Only the first four explanations reflect "true" affordability problems.

1. *Income decline not reported*

In some cases, income as reported by the tenant on the survey was lower than that indicated in the administrative files. While this is an example of a discrepancy between the administrative data and the survey data, it was initially speculated in many cases that the discrepancy might be due to a decline in income which had not been reported. For example, if the date of the last income review was a year old, then it was very likely that income had changed. Likewise, if there was evidence in the administrative data to indicate a history of income fluctuations then it was possible to surmise a fluctuation at the time of the survey.

In order to verify hypotheses, follow-up calls were attempted with tenants in all cases where it was suspected that a decline in income had occurred but

had not been reported. Some of these cases turned out to be respondent error (e.g., forgetting to include some portion of the total income or making a transcription error when responding to the survey), however, a number of tenants indicated that their income had declined and that they were going to report it at the next income review. Some tenants were apparently unaware that they could notify their project and receive an immediate rent reduction. In one instance, the decline in income occurred only for the month that was reported on the survey. The tenant did not report it because it would return to normal the following month.

Income declines which are not matched by rent reductions constitute true affordability problems. An illustration of this is presented in Example 1 in Appendix E.

2. *Administrative factors*

Affordability problems categorized as stemming from administrative factors occurred for a number of reasons — not the least of which is that some RGI scales calculate rents geared-to-income based on 30 per cent of tenants' income. This calculation implies that residents of such social housing projects may always experience affordability problems based on the core need definition, if the household has few income adjustments.

Other administrative factors are those which result in the rent having been set too high. In these cases, tenants have reported interest income and cash on hand to project administrators during income reviews. Cash on hand is not typically a monthly *source* of income, yet this amount has been reported and entered into the calculation as a monthly amount. This may be the result of how some projects treat investment income. The face value of securities and cash on hand is multiplied by an annual interest rate and divided by 12 to impute a monthly income. However, in a number of instances during the follow-up calls, monthly interest amounts contained in the administrative files were identified by the tenant as having been annual amounts

which had been recorded incorrectly. Since rents are based on the income recorded in the administrative files, the survey ratios will always be greater than the ratios calculated by the project administration.

Further, some projects did not apply the earned income deduction in determining benefits (i.e., RGI rents), whereas our survey ratios do based on CMHC's *Guidelines and Procedures Manual* described in footnote 2 on page 27. As the RGI calculations in some provinces have been set at .30, this overestimate of tenant income (for those with earned income who are not receiving the deduction) will always result in shelter costs which are equal to or exceed 30 per cent of a tenant's income.

Affordability problems attributable to administrative factors which influence rent-setting are considered true affordability problems. Example 2 in Appendix E provides further illustration of this explanation.

Market rent charged for violation of tenancy agreement

In a number of projects, tenants have violated their tenancy agreement by, for example, having different people live there than as specified by the lease or by failing to disclose all sources of income. In such cases, the project administration may charge the market value of the dwelling until the issue is resolved (e.g., a new agreement is made or disclosure occurs). In only one instance where a tenant completed the questionnaire and agreed to have their survey data matched to the administrative data was this the reason for an apparent affordability problem. However, over the course of the administrative review it was an issue for at least three other tenants who either did not respond or did not agree to have their administrative and survey data matched. This is a situation that was not anticipated. It is a true affordability problem although it is caused by a deliberate administrative decision.

Minimum rent applied

The cases where this applies the most are for those tenants who receive social assistance, but it also applies to some seniors receiving old age pensions. In some cases, Social Services determines what the maximum allowable rent is and the project charges the tenant accordingly, regardless of the shelter cost-to-income ratio. In other cases, Social Services pays the project directly[4]. Some provincial housing authorities have clear guidelines, including income and rent tables, as to how tenants receiving social assistance or old age income supplements should be handled; however, the shelter cost-to-income ratios in these cases are not always less than .30.

This results in an ambiguous situation as these appear to be true affordability problems even though they have been established at these higher ratios by the provinces themselves. Appendix F presents a detailed description of the cases in this sample where social assistance accounted for at least some portion of the tenant's income and an affordability problem was found.

3. ***Utility payments included in eligibility ratio - not included in RGI calculation***

Two types of ratios were constructed from the survey data: those including electricity and those excluding these payments. The former correspond to the eligibility calculations conducted to determine core need; the latter to the formulae applied to determine benefits (i.e., RGI). In many cases, when the ratio was computed to include electricity, an affordability problem was found. This is not surprising, however, as the benefit calculation used to ensure a ratio of less than .30 does not include electricity. For some tenants, the inclusion of the amount paid for electricity increases their shelter costs to a point where an affordability problem results.

4. This has caused confusion for some tenants who do not include the shelter allotment by Social Services into their total household income because they never actually see it.

As an example, consider when tenants pay a surcharge to the project administration for utilities such as electricity. In these cases, space heat (which may or may not be electric) is embedded in the rent. These surcharges are levied by the project as a form of remuneration for discretionary uses of electricity, which, as we have noted, is not an applicable benefit. If tenants were aware that they were paying a surcharge for electricity as a portion of their rental payment, it was indicated as an additional monthly payment on the survey[5]. Once again, utility payments have been accepted as shelter costs even though they represent discretionary uses of electricity and not space heat. During evaluations, the inclusion of these electricity payments would result in the identification of an affordability problem because an eligibility calculation is being applied to amounts that were determined using a benefit definition.

These are true affordability problems using an eligibility ratio. This explanation is depicted in Example 3 in Appendix E.

4. ***Seasonality - Utility payments higher than costs allotted by project***

This situation affects households who paid both heat (i.e., gas or oil) and electricity to utility companies. For these tenants, their calculated rent is adjusted by the project (i.e., reduced) by a predetermined monthly amount, dependant on the dwelling, to reimburse space heating expenses. In some cases, however, the monthly adjustment amount given by the project was less than the tenants reported in total expenditures for space heating and electricity.

This situation reflects a true affordability problem and is presented in Example 4 in Appendix E.

5. It is also interesting to note that many respondents double counted this electricity surcharge amount by including it in the rental payment they recorded *and* reporting it as an additional payment.

5. ***Rental payment as per survey includes other services - not included in RGI calculation***

In these cases surcharges for supplementary services (e.g., electricity, cable, parking and laundry) are levied in addition to the calculated rent although tenants *did not* report having any additional payments. Unlike the electricity example cited earlier, tenants here may not be aware that their rental payments include surcharges which are added on to the cost of their occupancy (the RGI calculated rent). If tenants were not aware of this, they reported an inflated rental payment which included these surcharges. In a few cases, a cable surcharge of $9 (only revealed through the administrative data review) which was included in the reported rental payment was sufficient to result in a finding of an affordability problem. This only occurred for a few tenants in projects in British Columbia because their RGI percentage is set at exactly .30.

This explanation differs from the earlier explanation (i.e., utility payments included in eligibility ratio - not included in RGI calculation) by the fact that this category is also capable of explaining an affordability problem identified by benefit ratios, whereas the previous category is only applicable to eligibility ratios. In the previous explanation, electricity surcharges reported as separate payments were able to be explicitly included in the eligibility ratios and excluded from the benefit ratios. In this explanation, however, electricity and other surcharges were not partitioned out from either the eligibility or benefit ratios as they were not identified as additional payments.

Those cases where the rental payment includes other services such as cable are considered false affordability problems because they included expenditures which are not allowable shelter costs. Example 5 in Appendix E provides a demonstration of this explanation. Where the hidden surcharge is for electricity, however, this is considered a true affordability problem for eligibility ratios and a false affordability problem for benefit ratios.

6. *Rent based on current income which is different from the 1992 reported income used in survey calculation*

This explanation is only pertinent to ratios which use the reported 1992 annual income. For some respondents, the ratios which use 1992 income signal affordability problems whereas the ratios using last month's income do not. This only indicates that, at some point, income has changed and the rent has been modified accordingly.

This scenario reflects a false affordability problem as current rent applied against current income does not result in an affordability problem. Instead, this is simply a result of the particular components of these survey ratios. This is not surprising considering how frequently some incomes were observed to fluctuate; during the review of the administrative data, it was noted that some rents were changed several times a year in response to reported fluctuations in income. This explanation is illustrated in Example 6 in Appendix E.

7. *Respondent error*

Respondent error was relatively common, second only to problems with utility payments and surcharges, and includes a multitude of inaccuracies. Some of the more common reasons are as follows: 1) respondents neglected to enter a zero or another digit and recorded an income figure incorrectly (e.g., 1,600 should have been 16,000); 2) they copied down the wrong amount off their income tax form (e.g., one tenant recorded either what had been deducted or what the refund had been instead of the reported annual amount for 1992, although this individual wasn't sure which one); 3) annual amounts were entered for monthly amounts and vice versa, 4) net income was reported instead of gross income; 5) rounding of amounts, which is to be expected, were quite problematic because monthly amounts as seemingly insignificant as 10-20 dollars were sometimes sufficient to cause a ratio to manifest an affordability

problem[6]; and 6) neglecting to include certain sources of income (in one case it appeared that an eighteen-year-old's income was not included in any of the survey amounts although when telephoned, the respondent stated that they did not personally consider their child's income as part of the household income, even though, as the project administration did, it was reported during the income review).

In some instances it was possible with the help of the administrative data to determine what was the source of the error; in others it was necessary to telephone and determine if our suspicions were correct. For the most part they were confirmed.

Errors of these kinds constitute false affordability problems.[7]

8. ***Rental Discrepancy (Survey vs. Administrative data)***

Follow-up calls with tenants were conducted for all cases where there was a rental discrepancy of five per cent or more *and* an affordability problem was identified. These cases represented instances where discrepancies existed between the administrative and survey data which were not possible to account for initially. It should be noted that they have been retained in this original category for this discussion although some were subsequently clarified and moved to other categories in Phase III.

Out of a total of 121 discrepancies (of more than a five per cent difference between the survey and administrative figures), only 26 exhibited affordability problems. Sixteen of these were due to the respondent having reported a rent which included surcharges for supplementary services and utilities and did not in fact constitute a true affordability problem; of the remaining 10, upon corrections made to

6. These amounts comprised, at times, less than 5 per cent of the tenant's income and still were sufficient to result in an affordability problem.

7. It should be noted that other respondent errors might exist which result in true affordability problems being hidden, although this question was not part of the present study.

the data following completion of the follow-up calls, five were no longer affordability problems. This left five cases (out of 122) in which rental discrepancies of five per cent or more occurred *and* at least one ratio identified an affordability problem.

In one of these cases, the respondent recorded the current month's rent and not the previous month's (this case still remained an affordability problem, however, as they had experienced a decline in income and had not reported it). In another, the administrative data was outdated. In a third, the reported rent included a number of surcharges which were not reflected on the administrative data so it was not immediately obvious what the source of the discrepancy was without verifying exactly what services the tenant received. Two cases could not be verified. One number was not listed with directory assistance; it is possible that the tenant who had supplied the administrative data had moved and the current tenant filled out the survey resulting in a true mismatch. The other was a senior citizen who did not recall having filled out the questionnaire and refused to verify anything over the phone. It is possible that someone else filled out the survey for this individual as this had been the case in one or two other instances.

This group remains ambiguous as some affordability problems turned out to be true whereas others were found to be false.

9. *Income Discrepancy (Survey vs. Administrative data)*

Puzzling income discrepancies between the survey and the administrative data were somewhat more common than rental discrepancies. These were cases which were not easily categorized as respondent error or an income decline. Upon completion of the follow-up calls, it was discovered that income discrepancies tended to occur due to respondent error and, therefore, encompass all the examples represented by that category.

These, therefore, are false affordability problems.

5.4 Summary of Explanations

A summary of the analysis of the origin of affordability problem findings is presented in Exhibit 5.2. Explanations as to why the ratios fall above the target of less than 30 per cent are listed across the top; individual ratios are listed down the side. Row totals summarize the total number of cases which manifested an apparent affordability problem using a particular ratio and the number of different factors which contributed to the affordability problem.

Exhibit 5.2
Shelter Cost-to-Income Ratios - Short Form

Ratio	Income decline not reported	Administrative Factors	Utility payments included in eligibility ratio - not included in RGI calculation	Seasonality - Utility payments higher than costs allotted by project	Rental payment as per survey includes other services - not included in RGI calculation	Rent based on current income which is different from 1992 income in calculation	Respondent error	Rental Discrepancy (Survey vs. Admin.)	Income Discrepancy (Survey vs. Admin.)	Total[1]	Number of Affordability Problems (ratio =or> .3)
Eligibility - includes electricity payments											
SEOA Shelter includes rent and all *utility payments* - 1992 annual income	3	27	22	6	29	23	11	1	7	129	85
SEOL Shelter includes rent and all *utility* payments - last month's income	25	31	23	6	23		3	3	11	125	83
Benefit - no electricity payments											
SNOA Shelter includes rent and utility payments excluding electricity - 1992 annual income	3	27			22	23	12	1	7	95	68
SNOAI Shelter includes rent and utility payments excluding electricity - 1992 annual income less earned income deduction and family allowance	3	29			21	24	10	2	8	97	71
SNOL Shelter includes rent and utility payments excluding electricity - last month's income	24	30			18		4	2	11	89	66

Number of Short Forms received: 310
Number of Short Forms agreed to a match with admin. data: 252
Number of Verifiable Short Forms: 234 (18 respondents could not be reached during telephone follow-up calls)
Number of Short Forms in which at least *one* ratio was .3 or greater: 116 (out of 234)

[1] Note: The number of *explanations* of affordability problems is greater than the actual number of affordability problems (as identified by a specific ratio) because there might have been more than one factor involved, for example, many respondents included the electricity surcharge when stating their rent *and* also indicated this amount as an additional payment. Each factor in and of itself was not enough to raise the shelter to income ratio to .3 or above, but when taken together was; so both explanations were tallied.

Only the first four columns of Exhibit 5.2 constitute "true" affordability problems[8]. It should be noted that some of the figures presented in these two tables reflect *hypotheses* regarding the nature of the apparent affordability problems; some of the frequencies change significantly upon completion of the follow-up calls and the Phase III recalculation of the ratios. These changes are presented later in Chapter 6.

As shown in Exhibit 5.2, the total number of explanations is greater than the number of affordability problems associated with a given shelter cost-to-income ratio. The reason for this is that, on a number of occasions, there was more than one contributing factor to an affordability problem; each factor considered on its own was not enough to result in an affordability problem, but when considered together, raised the ratio to .30. There are typically a greater number of factors, and hence a greater number of explanations, associated with eligibility ratios than with benefit ratios due to the inclusion of electricity. Although the introduction of electricity payments alone into the shelter cost equation may be sufficient to result in an affordability problem, when considered in combination with other factors these payments are even more likely to cause a given ratio to reach or exceed .30.

Distributions of the explanations of affordability problems are quite varied. Among the short form ratios, administrative factors, utility payments, which were either reported as being an additional payment on top of the base occupancy cost (either to a utility company or to the housing administration) or were included in the rental payment, and the inclusion of other services in the reported rental payments were the most likely causes of apparent affordability problems.

Income declines were the next most prevalent hypothesized explanation of affordability problems. Respondent errors and discrepancies were also fairly frequent explanations of short form affordability problems.

8. Although, as noted earlier, some of the affordability problems for eligibility ratios explained under the fifth column "Rental payment as per survey includes other services — not included in RGI calculation" are also "true" affordability problems (i.e., when the "other services" include electricity).

In Exhibit 5.3, respondents are classified according to whether they have: "true" affordability problems only; "false" affordability problems only; or a mixture of true and false affordability problems. The last category reflects instances where affordability problems were due to a combination of factors: when considered individually, some would result in instances of "true" affordability problems while others would result in "false" affordability problems.

This table clearly demonstrates, after preliminary analyses, that while ratios using the previous year's annual income identify more affordability problems overall, they are primarily false instances. Ratios using the previous month's income (SEOL and SNOL) identify relatively more "true" affordability problems.

EXHIBIT 5.3
Shelter Cost-to-Income Ratios - Short Form

Ratio	True Affordability Problems	Mixture of True and False Affordability Problems	False Affordability Problems	Number of Respondents with Affordability Problems ≥
Eligibility - includes electricity payments				
SEOA Shelter includes rent and all *utility* payments - 1992 annual income	32 (37.6%)	30 (35.3%)	23 (27.1%)	85
SEOL Shelter includes rent and all *utility* payments - last month's income	53 (63.9%)	23 (27.7%)	7 (8.4%)	83
Benefit - no electricity payments				
SNOA Shelter includes rent and utility payments excluding electricity - 1992 annual income	13 (19.1%)	15 (22.1%)	40 (58.8%)	68
SNOAI Shelter includes rent and utility payments excluding electricity - 1992 annual income less earned income deduction and family allowance	15 (21.1%)	16 (22.5%)	40 (56.3%)	71
SNOL Shelter includes rent and utility payments excluding electricity - last month's income	33 (50.0%)	15 (22.7%)	18 (27.3%)	66

Note: Percentages refer to the proportion of true, mixed and false problems identified by a particular ratio.

Number of Short Forms received: 310
Number of Short Forms agreed to a match with admin. data: 252
Number of Verifiable Short Forms 234 (18 respondents could not be reached during telephone follow-up calls).
Number of Short Forms in which at least *one* ratio was greater than .3: 116 (out of 234)

CHAPTER

6 REVISED AFFORDABILITY PROBLEM FINDINGS

6.1 Phase III: Shelter Cost-to-Income Ratio Recalculations

Once all apparent affordability problems were identified (Phase I) and the comparison of survey and administrative data conducted to determine whether the ratios had *correctly* identified affordability problems (Phase II), the next step was to make appropriate corrections to the data and recalculate the shelter cost-to-income ratios and their distributions (Phase III). This new analysis would provide a more accurate estimate of the incidence of true affordability problems in our sample.

Any inflated shelter costs (due to supplementary services being included in the rental payment) which were discovered during comparisons with administrative data or follow-up calls with tenants were corrected accordingly for the recalculations. At this point, a decision rule regarding supplementary surcharges and electricity surcharges was made. Benefit calculations which were supposed to exclude payments for electricity did not in the first round of calculations if electricity surcharges were included in the rental payment *as reported by* the tenant. Where possible, all surcharges included in the rent were removed for the second round of calculations.

Surcharges for supplementary services such as cable and parking were not of consequence because they were simply removed from the monthly payment (if they had been included before) and not reentered as they are not allowable shelter costs. Electricity, however, was more complicated. In these cases, it was necessary to remove electricity surcharges from the rental payment along with the other charges, but to recode them as additional monthly payments. Therefore, when the ratios were recalculated, payments for discretionary uses of electricity which had previously been included in the rental payment could now be partitioned out and: 1) be included in the eligibility ratios (which they *had* been during the first round anyway because they had been included in the rental payment); and 2) (more importantly) they could finally be excluded from the benefit ratios (which they had *not* been during the first round because they had been included in the rental payment).

All respondent errors such as transcription mistakes or inclusion and exclusion of various amounts which were uncovered during Phase II were also corrected for the recalculation of the shelter cost-to-income ratios.

Once the data were revised, all five ratios were recalculated. Exhibit 6.1 presents the distribution of recalculated shelter cost-to-income ratios. The number of affordability problems identified by the various recalculated ratios ranges from 34 to 67 (down from 66 to 85 previously).

Exhibits 5.2 and 5.3 have been replicated in Exhibits 6.2 and 6.3 using the recalculated ratios. The total number of cases which exhibited at least one affordability problem dropped from 116 to 86 (out of a total of 234 tenants who agreed to have their survey and administrative data matched and whose responses could be followed up by telephone). The number of cases dropped because they no longer resulted in an affordability problem after the recalculation of each ratio is presented in the summary table in Exhibit 6.3 and discussed in detail in the following section.

EXHIBIT 6.1
Distribution of Recalculated Shelter Cost-to-Income Ratios

	Eligibility Ratios (including electricity)		Benefit Ratios (excluding electricity)		
	Annual Income (SEOA)	Last Month's Income (SEOL)	Annual Income (SNOA)	Annual Income with adjustments (SNOAI)	Last Month's Income (SNOL)
Less than .15	2.0	1.4	5.0	5.0	3.3
.15 to .19	7.4	4.3	7.4	5.0	5.7
.20 to .24	13.9	15.2	17.3	13.9	23.3
.25 to .29	43.6	50.5	48.5	51.5	51.4
.30 to .34	22.8	21.9	13.9	15.8	10.0
.35 to .39	5.0	1.4	3.5	2.5	1.9
.40 to .44	1.0	2.4	05	2.0	1.9
.45 to .49	1.5	0.5	1.0	1.0	0
Over .50	3.0	2.4	3.0	3.5	2.4
% cases where ratios are greater than or = to 30%	33.2	28.6	21.8	24.8	16.2
number of cases where ratios are greater than or = to 30%	67	60	44	50	34
Total number of valid cases	202	210	202	202	210

* Note: Percents are valid per cent of cases.

EXHIBIT 6.2
Recalculated Shelter Cost-to-Income Ratios - Short Form

Ratio	Income decline not reported	Administrative Factors	Utility payments included in eligibility ratio - not included in RGI calculation	Seasonality - Utility payments higher than costs allotted by project	Rental payment as per survey includes other services - not included in RGI calculation	Rent based on current income which is different from 1992 income in calculation	Measurement Error	Total[1]	Number of Affordability Problems (ratio =or> .3)
Eligibility - includes electricity payments									
SEOA Shelter includes rent and all *utility* payments - 1992 annual income	2	26	27	6		22	4	87	67
SEOL Shelter includes rent and all *utility* payments - last month's income	10	28	22	5			4	69	60
Benefit - no electricity payments									
SNOA Shelter includes rent and utility payments excluding electricity - 1992 annual income	2	23				21	4	50	44
SNOAI Shelter includes rent and utility payments excluding electricity - 1992 annual income less earned income deduction and family allowance	2	30				22	4	58	50
SNOL Shelter includes rent and utility payments excluding electricity - last month's income	8	27					4	39	34

Number of Short Forms received: 310
Number of Short Forms agreed to a match with admin. data: 252
Number of Verifiable Short Forms: 234 (18 respondents could not be reached during telephone follow-up calls)

Number of Short Forms in which at least *one* ratio was equal to or greater than .3: 116 (out of 234)
Number of short cases dropped in Phase III 30

Final number of short forms in which at least *one* ratio was greater than .3: 86

[1] Note: The number of *explanations* of affordability problems is greater than the actual number of affordability problems (as identified by a specific ratio) because there might have been more than one factor involved, for example, many respondents included the electricity surcharge when stating their rent *and* also indicated this amount as an additional payment. Each factor in and of itself was not enough to raise the shelter to income ratio above .3, but when taken together was; so both explanations were tallied.

EXHIBIT 6.3
Shelter Cost-to-Income Ratios - Short Form

Ratio	Number of cases with ratios ≥ .30 identified in Phase I	Number of cases dropped in Phase II	True Affordability Problems	Mixture of True and False Affordability Problems	False Affordability Problems	Number of Respondents with Affordability Problems (ratio ≥ .3)
Eligibility - includes electricity payments						
SEOA Shelter includes rent and all *utility* payments - 1992 annual income	85	18	41 (61.2%)	9 (13.4%)	17 (25.4%)	67
SEOL Shelter includes rent and all *utility* payments - last month's income	83	23	56 (93.3%)	3 (5.0%)	1 (1.7%)	60
Benefit - no electricity payments						
SNOA Shelter includes rent and utility payments excluding electricity - 1992 annual income	68	24	19 (43.2%)	6 (13.6%)	19 (43.2%)	44
SNOAI Shelter includes rent and utility payments excluding electricity - 1992 annual income less earned income deduction and family allowance	71	21	24 (48.0%)	6 (12.0%)	20 (40.0%)	50
SNOL Shelter includes rent and utility payments excluding electricity - last month's income	66	32	30 (88.3%)	3 (8.8%)	1 (2.9%)	34

Note: Percentages refer to the proportion of true, mixed and false problems identified by a particular ratio.

Number of short forms received:	310
Number of short forms agreed to a match with admin. data:	252
Number of verifiable short forms	234 (18 respondents could not be reached during telephone follow-up calls)
Number of short forms in which at least *one* ratio was greater than .3:	116 (out of 234)
Number of short form cases dropped in Phase III	30
Final number of short forms in which at least *one* ratio was greater than .3:	86

6.2 Common Explanations of Affordability Problems Using Recalculated Ratios

As with the summary table in the previous chapter, ratios using the previous year's annual income identified, overall, more affordability problems. The percentage of "true" affordability problems identified by these ratios increased in Phase III (e.g., from 37 to 61 per cent of affordability problems identified by SEOA - the eligiblity definition using last year's income and including electricity). However, ratios using the previous month's income continued to identify a far greater number of "true" affordability problems: for example, 56 out of 60 affordability problems were correctly identified by SEOL (i.e., the eligibility definition using last month's income and including electricity).

The most common explanations of affordability problems after recalculation were: 1) administrative factors, which included tenants whose rents were determined based on 30 per cent of their income; 2) utility payments, which were included in the survey (eligibility) ratios but were not included in the RGI calculation so that when they were included as shelter costs, shelter costs reached or exceeded 30 per cent of income; and 3) the current rent used in the survey ratio calculation was based upon current income which was different from the 1992 income used in the particular survey ratio calculation; if income, and consequently the rent, changed at any point since 1992, then a ratio which uses 1992 income is using inaccurate income information and artificial affordability problems may result.

It is not surprising that electricity payments figure prominently in explanations of affordability problems as almost 40 per cent of tenants reported making an additional payment for electricity. Exhibit 6.4 presents the percentage of tenants reporting additional payments for each province in the sample. These results are comparable to those in the survey of Co-operative Housing Residents in 1990 (Co-op survey findings are in parentheses.). The results of the tenant survey indicate a

somewhat higher incidence of electricity payments in Quebec (28.9 vs. 18.9 per cent in the Co-op evaluation), and lower for Ontario (52 vs. 71.3 per cent for the Co-op survey). This study also found a higher incidence of gas payments in Ontario (54 per cent as compared to 39 per cent for the Co-op survey).

EXHIBIT 6.4
Incidence of Respondents Reporting Extra Payments for Water, Gas, Oil and Electricity

	Newfoundland	Quebec	Ontario	British Columbia	Total
Water	4.7	— (.7)	8.2 (13)	1.9	3.8
Gas	—	— (—)	53.6 (39)	1.9	18.5
Oil	—	1.5 (—)	2.3 (2.2)	01.9	1.0
Electricity	38.5	28.9 (18.9)	52.0 (71.3)	33.3	38.9

Note: 1990 Co-op Survey Findings are in parentheses.

6.3 Differences Between Phase I and Phase III Ratio Calculations

The number of affordability problems which had been attributed to a decline in income which had not been reported decreased substantially upon recalculation. These "declines" turned out, in fact, to be mostly respondent error; on many occasions net (rather than gross) income had been reported or a source of income had been omitted altogether. Several of the cases for which an income decline had been hypothesized were actually cases where cash-on-hand or annual interest payments had been factored into the monthly income used by the project administration for the RGI calculation. In one case, once the cash had been spent it was no longer available as a source of income; in another, the average monthly income as recorded by the project had been incorrectly inflated.

An explanation which had previously been hypothesized to account for numerous affordability problems disappeared altogether when the ratios were recalculated (i.e., rental payment as per survey includes other services — not included in RGI calculation). During recalculation, where possible, rents were modified to exclude extra payments from the rental payment. Services such as parking and cable were dropped altogether and electricity surcharges were redefined as monthly payments. For eligibility definitions, electricity was effectively subtracted out (of the rental payment) and then added back (as a monthly payment) into the shelter cost equation. If electricity alone was the cause of an affordability problem, it would now be reflected in the explanation "utility payments included in survey ratio — not included in RGI calculation".

Respondent errors and income discrepancies did not disappear, even after follow-up calls, and are due primarily to estimation errors. Errors of this kind are characteristic of survey data, where a respondent's best estimate is all the researcher can reasonably expect. These discrepancies have been grouped together under the new category "Measurement Error". A number of respondents were unable to give more than an estimate of their income. In two cases, interest income could not be provided as it would only be paid at the end of the year. Interest income, however, was estimated in the administrative data and included as income; hence the discrepancy between the administrative and survey data. In one case, the difference was due to rounding of $29 a month, but was sufficient to contribute to an affordability problem.

Affordability problems arising from these situations are reasonable over the course of a survey and are considered to be false affordability problems as they represent measurement error.

Specific Phase I to Phase III Changes for the Short Form Ratios

At this point, it is helpful to review the reduction in the number of identified affordability problems between Exhibits 5.2 and 6.2 to illustrate how the added information obtained during the follow-up telephone calls and reference to administrative data in Phase II served to clarify cases of false identification of affordability problems. Each of the five ratios calculated for the short form of the tenant questionnaire will be discussed.

SEOA

In Exhibit 5.2, the SEOA ratio identified 85 cases where an affordability problem existed. This number dropped to 67 following the recalculation of the ratios. Thus, the additional information obtained in Phase II indicated that at least 18 of the affordability problems initially found were incorrectly identified. The 18 affordability problems that were eliminated can be described as follows:

- one was originally thought to be due to an unreported income decline although it turned out to be because of respondent error;

- five were thought to be (and, in fact, were) cases where surcharges for parking, laundry, cable and/or electricity were embedded in the figure tenants reported for their rent, resulting in inflated rent amounts (especially when the electricity surcharge was also reported as an additional payment);

- two were hypothesized as cases where the rent was based on current income which is higher than the 1992 income in the calculation, however,

one turned out to be respondent error and the other was a situation in which surcharges were embedded in the rental payment;

- seven were correctly assumed to be due to respondent error; and

- three had discrepancies between the income figure on the survey and the administrative data, all of which turned out to be due to respondent error.

Once the errors were corrected and the inappropriate surcharges removed, these 18 cases no longer presented an affordability problem.

SEOL

The number of affordability problems identified by this ratio dropped from 83 in Exhibit 5.2 to 60 in Exhibit 6.2 following recalculation. The additional information obtained in Phase II, therefore, resulted in the disappearance of 23 incorrectly identified affordability problems, as follows:

- nine were hypothesized to be instances of unreported income decline although all nine turned out to be due to respondent error;

- six were correctly identified as instances of reported rents containing additional surcharges for electricity (and electricity also reported as an additional payment), parking, cable and/or laundry;

- six were identified as a discrepancy between the reported income on the survey and that found in the administrative files, however, all six were found to be respondent errors; and

- two were identified as a discrepancy between the reported rent on the survey and that found in the administrative files, however, both were found to be due to respondent error.

Following correction of respondent errors and removal of additional surcharges, these 23 cases no longer presented affordability problems.

SNOA

While 68 affordability problems were identified in Exhibit 5.2, this number dropped to 44 following the recalculation of the ratios. The additional information obtained in Phase II resulted in the elimination of 24 incorrectly identified affordability problems. The changes were as follow:

- one was hypothesized to be due to an unreported income decline, however, it was found to be the result of respondent error;

- eight were thought to be instances where additional surcharges were embedded in the monthly payment, this was true for all eight although one of the eight also was a case where a minimum rent was charged;

- seven were identified as respondent error and, while all seven demonstrated respondent error, two of these also were cases where there were embedded surcharges;

- three were thought to be due to rent being based on current income which was higher than the 1992 annual income figure used in the calculation, however, this was correct for only one of these which also had electricity and parking included in the reported rent while another was due to respondent error and the third was the result of an electricity surcharge being included in the reported rent;

- four were identified as income discrepancies between the survey and the administrative data however all four turned out to be respondent error (one of these to also contain a surcharge for parking); and

- one was identified as a rental discrepancy between the survey and the administrative data although this ended up being a case where the rent as reported by the tenant included the surcharges for electricity, parking, cable and/or laundry.

Once the respondent errors were corrected and the additional surcharges removed, the 24 affordability problems were eliminated.

SNOAI

The number of affordability problems identified by this ratio dropped by 21 (from 71 to 50) following the additional information obtained in Phase II. The cases that were affected are as follows:

- one was hypothesized to be due to an unreported income decline, however, it was found to be the result of respondent error;

- eight were thought to be instances where additional surcharges were included in the monthly payment, this was true for all eight although one of the eight also was a case where a minimum rent was charged;

- five were identified as respondent error;

- two were thought to be due to rent being based on current income which was higher than the 1992 annual income figure used in the calculation, although one was actually because of respondent error and the other was due to an additional surcharge for cable being included in the reported rent;

- three were identified as income discrepancies between the survey and the administrative data, however, all three turned out to be respondent error; and

- two were identified as a discrepancy between the rent as reported in the survey and the administrative data although one was a case where the rent as reported by the tenant included the surcharges for electricity, parking and laundry and another was due to respondent error.

Following the correction of respondent errors and the subtraction out of additional surcharges, 24 incorrectly identified affordability problems were cleared up.

SNOL

A total of 32 affordability problems disappeared following the additional information accessed in Phase II (from 66 affordability problems in Exhibit 5.2 to 34 in Exhibit 6.2). The specific changes were as follows:

- 15 were hypothesized to be instances of unreported income decline although 13 turned out to be due to respondent error and two to electricity being included in the reported rent;

- 11 were correctly identified as instances of reported rents containing additional surcharges for electricity, parking, cable and/or laundry; and

- six were identified as a discrepancy between the reported income on the survey and that found in the administrative files, however, all six were found to be due to respondent error.

Once the errors were corrected and the surcharges which are not eligible shelter costs were removed, the 32 cases no longer presented an affordability problem.

It should be noted that, although the number of affordability problems per ratio that cleared up following their recalculation varied from 18 to 32 (depending on the ratio), there actually were 51 different households in total who initially presented an affordability problem on at least one of the five ratios which disappeared following the consideration of additional information. Of these 51 households, some had an affordability problem disappear for only one ratio whereas affordability problems on two or more ratios cleared up for others. It is important to note that affordability problems for each ratio were cleared up for a different subset of households (with some overlap in the cases of households where affordability problems or two or more ratios disappeared). This explains why the highest number of affordability problems that were cleared up for any particular ratio (i.e., 32) is still lower than the total number of households where at least one of the five ratios no longer presented an affordability problem.

6.4 Evaluation of the Various Ratios

Ratios which used the previous month's income (e.g., SEOL) appear to be the "best" ratios in terms of accurately identifying affordability problems. As only unreported income declines, administrative factors (e.g., no earned income adjustment), utility payments and seasonality factors were found to explain "true" affordability problems, ratios which identified these types of affordability problems should prove to be the most accurate. Ratios using last month's income identified these problems more frequently than ratios using the previous year's income.

The shelter-to-income ratio used most often in past evaluations is the eligibility ratio which includes electricity payments and uses the previous year's annual income (i.e., SEOA). Ratios which used annual income in the shelter cost-to-income calculation are the least effective as they fail to identify affordability problems when they do exist for the reasons stated above. Theses ratios also identify affordability problems when they do not exist. A number of artificial affordability problems were indicated because the rent component of the shelter cost calculation was based on

current income (which had increased) yet the income component was based on an outdated income amount.

These findings are best illustrated in the summary table presented earlier in Exhibit 6.3. After recalculation, 17 affordability problems were incorrectly identified by the shelter-to-income ratio SEOA. The majority of these "false" affordability problems were due to an outdated income component of the ratio. The eligibility ratio which used the previous month's income, SEOL, on the other hand, only incorrectly signalled *one* affordability problem. In this instance the respondent revealed during the telephone follow-up calls that they were unable to give a good estimate of their income. This was classed under the "Measurement Error" category in the table in Exhibit 6.2.

Income which is gathered via a matrix method as used in the long form of the questionnaire (presented in Appendix B) is not recommended[8]. Ratios which use matrix amounts in the income component tended to falsely identify an affordability problem when none existed more often than ratios which used a single amount. This typically occurred because of incorrectly completed matrices (e.g., using monthly amounts instead of annual figures). This was evidenced by the high number of affordability problems due to respondent error which disappeared when the ratios were recalculated following clarification of anomalies through call-backs or comparison with administrative data.

8. It should be noted that the long form was not a fair test of this method because other types of information were collected at the same time. To positively make conclusions about this method, another test would have to be conducted using only a matrix method of collecting income, but retaining the rest of the short form content.

CHAPTER

7 RECOMMENDATIONS

The detailed case-by-case analysis of all affordability problem findings led to the development of the list of explanations presented in Chapter Five. After correcting for as many data anomalies as possible, it was found that only some of what were initially identified as affordability problems were actual and valid occurrences of an affordability problem. This has important implications for future research on social housing programs as it implies that the incidence of affordability problems, while still present, may not be as high as previously thought. To ensure that future research is better able to discern true cases of affordability problems from those due to measurement or definitional errors, this chapter presents recommendations for the collection of income and shelter cost data on CMHC questionnaires.

1. **Ensure that the shelter cost and income figures being reported are applicable to exactly the same period of time.**

As projects tend to adjust rent immediately upon evidence of a decline in income and annually on evidence of a change in income in either direction, use of income figures for a different time period than applicable to the shelter cost figures were often found to result in the false reporting of an affordability problem. This was especially true in cases where the annual income for the previous year was applied to a ratio which used the current amount for rent *and* when annual income had increased

from the last to the present year. The current amount for rent would be based on the updated income figure (which was higher than the previous year's income) and, therefore, would be higher than the rent which corresponded to the previous year's lower income. This accounted for most of the false affordability problems identified by the eligibility ratio which used annual income (i.e. SEOA).

2. **Last month's income was found to be the most accurate representation of income and should be relied upon as a question used to determine income.**

Especially for tenants with fluctuating incomes and helpful in this particular study when administrative data were out-dated, but applicable generally, ratios which used the figure for last month's income were found to be the best in identifying true affordability problems. This is primarily due to the fact that tenants are reporting their current rent which corresponds to their current income. As well, estimates of income for a recent, short period are likely more valid than those for annual income for a previous year, especially for individuals with even slightly complicated sources of income.

3. **Clarify that the income amount required by survey respondents is the gross amount and not the net amount.**

Respondents seem to associate their net earnings with their monthly income and their gross earnings with their annual income. This may not be surprising as it is the biweekly or monthly net amount that gets deposited in the bank and is available for expenditures. Although the questions as currently worded on CMHC questionnaires appears to be very clear (e.g., "before deductions" and "from all sources"), it appears that respondents may not be processing exactly what this question is asking before responding. This was even found to be true despite verbal prompting during the follow-up telephone calls. However, use of a net amount in calculating income will underestimate income and result in a false finding of an affordability problem.

It may be beneficial to rephrase the income question(s) to be even more explicit (e.g., "the total amount *before any taxes are deducted, not* the amount you actually took home").

4. **Keep the questions for respondents' reports of income as simple as possible.**

This research exercise tested the possibility that more complete and, therefore, accurate income data would result from the presentation of a complex matrix listing all possible sources of income for respondents to use to identify their sources of income. While data from the matrices proved to be invaluable in pinpointing sources of error in the ratios used for this research, the matrices also presented the highest incidence of missing data, a considerable number of respondent errors and the largest proportion of false findings of affordability problems. It seems clear that the matrix proved to be more of a challenge for respondents to complete (perhaps even just to their patience) and thus, did not serve to improve the accuracy of affordability problem measurement and actually may have impeded the collection of income data.

5. **For tenants who indicate that they make additional monthly payments for electricity, determine whether the additional payments are to the project itself or to a utility company; if the payments for electricity are to a utility company, also determine heat source.**

When this research was being designed it appeared that it would be too difficult to partition out the amount paid for discretionary use of electricity from electricity use for space heating in order to compute a shelter cost using the basic eligible expenses (i.e., rent, space heat, water, water heat, stove and refrigerator). Therefore, the researchers were directed to utilize two types of ratios: one using all electricity payments (eligibility) and one using no electricity payment (benefit). (It should be noted that the benefit calculations included space heating when there was

a clearly discernable payment for gas or oil; no projects sampled contained units which paid their own electricity bill for space heating.)

It appears, however, that it may be possible to partition out payments for discretionary use of electricity for a large majority of project residents. The only case for which it is impossible to distinguish discretionary use of electricity from space heating is when both are electric and the tenant pays for both directly to a utility company. In our sample, this did not occur. Typically, if tenants were found to be paying electricity to a utility company, their space heat was from some other energy source (e.g., gas-heated steam). Therefore, the amount paid to the utility company for electricity use was for discretionary purposes only. Another common example occurred when utility payments were made to the project itself in the form of a surcharge. If the payment was for electricity, once again it typically was for discretionary use of electricity and not for space heat. Space heat usually was accounted for in the calculation of the rent and thus, embedded in the rental payment but not as a discernable surcharge.

6. **Determine whether information already possessed by CMHC about project administration could be utilized in analyzing data from future evaluations.**

Many of the project administrators who were interviewed seemed surprised by the kind of information requested (e.g., type of heat source, amount of surcharges for discretionary use of electricity or cable). Their impression was that CMHC already had this information through regular audits of their projects.

This additional information would be helpful given the difficulty tenants appeared to have in reporting their actual rent without including the surcharges which are included in their monthly payment. Only one respondent who exhibited an apparent affordability problem correctly identified her calculated RGI rent. At the same time, she also reported the extra payment for electricity which is charged by the project to compensate for discretionary use of electricity. More common were cases in

which tenants double-counted: in providing a figure for rent, tenants often reported their total monthly payment (without subtracting any surcharges) and then also reported additional monthly payments (the same surcharges included in their reported rent). Finally, another difficulty in interpreting individual survey responses occurred when tenants indicated that their space heat was from a source "other" than gas, oil or electricity, but failed to specify what was the "other" source. If an exhaustive list of heat source could be developed (using project information), it may be useful to utilize this rather than leave an open-ended option for tenants.

It would be very helpful to be able to cross-check respondent reports of type of heat source and additional payments in the form of surcharges against what would be in audit files on policies and procedures for each project (that is, if this current information does exist as project administrators seemed to believe). This would ensure that double-counting of expenditures did not occur (as it leads to greater numbers of apparent affordability problems being identified) and that space heat is correctly taken into account.

At the same time, it is not recommended to go to a method which relies upon the administrative data exclusively to collect information on income. Beyond the practical difficulties of enlisting the cooperation of the projects and the provincial housing authorities, the administrative data were often found to be out-of-date plus they don't contain information on utility payments when these are made to a utility company directly.

7. **Clarify the distinctions between the two types of ratios (eligibility versus benefit) and consider the implications of using each to determine affordability problems.**

While the eligibility ratio is more liberal in terms of including all electricity as an allowable shelter cost, it also includes more sources of income. The benefit ratio (based on CMHC guidelines), while excluding discretionary use of

electricity from allowable shelter costs, also excludes certain types of income (i.e., family allowance) as well as permitting deductions from earned income. In this research, the key difference between the two ratios is that the eligibility ratios produced more affordability problems than the benefit ratios.

This finding, however, is not surprising as the shelter costs for tenants who have an affordability problem under the eligibility ratio have rents which were established under benefit definitions, which account for rent and space heating, but not discretionary use of electricity. Adding this component (i.e., discretionary use of electricity) onto the benefit amounts is often enough to produce an affordability problem.

Therefore, depending on the type of ratio employed to assess the prevalence of affordability problems, discretionary use of electricity can become a key component of the incidence of shelter cost-to-income ratios greater than or equal to .30. Clarification of the implications of the use of each ratio would ensure that artificial affordability problems are recognized as such.

8. **Recognize that there are some inconsistencies in how rents are determined across the country and how the federal government defines core need.**

At least one example was found in this research of a province that sets rent at .30 of income. Therefore, where households have no income adjustment, they immediately fall into an affordability problem. This inconsistency can lead to difficulties in the interpretation of research findings as the affordability problem (as defined by the federal government) is created by the provincial policy.

APPENDIX A

SHORT AND LONG FORMS OF THE TENANT QUESTIONNAIRE

Ekos Research Associates Inc., 1994

Urban Social Housing Survey
Canada Mortgage and Housing Corporation

Resident Questionnaire

This questionnaire is an important part of a study of social housing programs in Canada and will provide valuable information regarding housing projects, such as the one in which your home is located.

This questionnaire is completely confidential. No one in your project or local area will ever see your answers.

The survey should be completed by an adult household member who is responsible for major household decisions.

DEFINITION: Home refers to the dwelling unit occupied by your household (e.g., whether semi-detached, townhouse, apartment, etc.).

Please indicate the date this questionnaire is being completed: _____, 1993.

---

1. Which of the following best describes your home? (CHECK ONE)

[ ] single detached [ ] semi-detached
[ ] duplex [ ] apartment
[ ] row [ ] other (describe:_____
_____)

2. Considering everything about your dwelling, including the nearby area, how satisfied are you with your home? (CHECK ONE)

[ ] Very satisfied
[ ] Somewhat satisfied
[ ] Somewhat dissatisfied
[ ] Very dissatisfied

3(a) How many rooms are there in your home? Do not include bathrooms, halls, storage areas, vestibules or unfinished rooms. (Please include the kitchen, living/dining room, bedrooms, and any finished attic or basement rooms.)

Number of Rooms ___ (IF ONLY ONE ROOM, GO TO Q.4)

3(b) How many bedrooms are there in your home? (Please include only those separate enclosed rooms used regularly for sleeping.)

Number of Bedrooms ___

4. Is your home in need of any repairs? Do not include desirable remodelling, additions, conversions or energy improvements. (CHECK ONE)

[ ] Yes, major repairs are needed (to correct, for example, corroded pipes, damaged electrical wiring, sagging floors, bulging walls, damp walls and ceilings, crumbling foundation, rotten porches and steps).

[ ] Yes, minor repairs are needed (to correct, for example, small cracks in interior walls and ceilings, broken light fixtures and switches, leaking sinks, cracked or broken window panes, some missing shingles or siding, some peeling paint).

[ ] No, only regular maintenance is needed (for example, painting, leaking faucets, clogged gutters or eavestroughs).

5. Please indicate the age, sex, and relationship to you of each person who regularly lives in this housing unit. (ATTACH A SEPARATE LIST IF YOU NEED MORE SPACE.)

	AGE (Years)	SEX (Check One) Male	Female	RELATIONSHIP TO YOU (Check One) Spouse/ Common-Law	Child	Other Relative
Yourself	____	[ ]	[ ]	[ ]	[ ]	[ ]
Person 2	____	[ ]	[ ]	[ ]	[ ]	[ ]
Person 3	____	[ ]	[ ]	[ ]	[ ]	[ ]
Person 4	____	[ ]	[ ]	[ ]	[ ]	[ ]
Person 5	____	[ ]	[ ]	[ ]	[ ]	[ ]
Person 6	____	[ ]	[ ]	[ ]	[ ]	[ ]
Person 7	____	[ ]	[ ]	[ ]	[ ]	[ ]
Person 8	____	[ ]	[ ]	[ ]	[ ]	[ ]

6. How much rent did you pay last month for the apartment unit or house?
Rent for last month: $_____.00

7. In addition to rent, do you make extra payments for the following services and utilities? (IF YOU DO, PLEASE ESTIMATE THE MONTHLY PAYMENT TO THE NEAREST DOLLAR.)

	NO	YES	Monthly Payments
(a) Water	[ ]	[ ]	$_____.00
(b) Electricity	[ ]	[ ]	$_____.00
(c) Gas	[ ]	[ ]	$_____.00
(d) Oil	[ ]	[ ]	$_____.00
(e) Parking	[ ]	[ ]	$_____.00
(f) Cable	[ ]	[ ]	$_____.00
(g) Other (PLEASE SPECIFY):			
_____	[ ]	[ ]	$_____.00

8. Are you asked to provide information to the project administration about your income on an annual basis? (CHECK ONE)

[ ] Yes
[ ] No (GO TO QUESTION 10)
[ ] Don't Know (GO TO QUESTION 10)

9. If you are required to provide information about your income on an annual basis, is it used to determine your monthly rental charges (i.e., is your rent "geared-to-your-income"?) (CHECK ONE)

[ ] Yes
[ ] No
[ ] Don't Know

10. In 1992, considering all sources, what was your estimated total household income before deductions?

Estimated income for ALL OF 1992: $_____.00

11. Please estimate last month's total household income, from all sources, before deductions.

Estimated income for LAST MONTH: $_____.00

12. What language is spoken most often in your home? (CHECK ONE)

[ ] English
[ ] French
[ ] Other language or bilingual
(PLEASE SPECIFY: _____)

13. In what year did you first move into your current home and this non-profit housing project? (PLEASE INDICATE YEAR FOR EACH).

(a) Moved into this home: 19 ___ (year).
(b) Moved into this non-profit housing project: 19 ___ (year).

14. As part of this research, we will also be reviewing administrative files for this building. One part of this study involves a comparison of the information provided in this questionnaire with the information kept in administrative files. The comparison is being done simply to find out how well our questionnaire works and if improvements can be made to gather information more easily and accurately. No one in your project will ever see the information that you provide to Ekos Research. Please check off the box below to agree to a comparison of information collected in this questionnaire with that in administrative files.

[ ] I agree.

Thank you for your co-operation in completing this questionnaire. Please seal it in the Special Letter envelope provided and drop it in any Canada Post mailbox. If the envelope is missing, please call Ekos Research collect at (613) 235-7215 and ask for Susan Morris.

Urban Social Housing Survey
Canada Mortgage and Housing Corporation

Resident Questionnaire

This questionnaire is an important part of a study of social housing programs in Canada and will provide valuable information regarding housing projects, such as the one in which your home is located.

This questionnaire is completely confidential. No one in your project or local area will ever see your answers.

The survey should be completed by an adult household member who is responsible for major household decisions.

DEFINITION: Home refers to the dwelling unit occupied by your household (e.g., whether semi-detached, townhouse, apartment, etc.).

Please indicate the date this questionnaire is being completed: _____, 1993.

---

1. Which of the following best describes your home? (CHECK ONE)

[ ] single detached [ ] semi-detached
[ ] duplex [ ] apartment
[ ] row [ ] other (describe:_____
_____)

2. Considering everything about your dwelling, including the nearby area, how satisfied are you with your home? (CHECK ONE)

[ ] Very satisfied
[ ] Somewhat satisfied
[ ] Somewhat dissatisfied
[ ] Very dissatisfied

3(a) How many rooms are there in your home? Do not include bathrooms, halls, storage areas, vestibules or unfinished rooms. (Please include the kitchen, living/dining room, bedrooms, and any finished attic or basement rooms.)

Number of Rooms ___ (IF ONLY ONE ROOM, GO TO Q.4)

3(b) How many bedrooms are there in your home?

Number of Bedrooms ___

4. Is your home in need of any repairs? (Do not include desirable remodelling, additions, conversions or energy improvements.) (CHECK ONE)

[ ] Yes, major repairs are needed (to correct, for example, corroded pipes, damaged electrical wiring, sagging floors, bulging walls, damp walls and ceilings, crumbling foundation, rotten porches and steps).

[ ] Yes, minor repairs are needed (to correct, for example, small cracks in interior walls and ceilings, broken light fixtures and switches, leaking sinks, cracked or broken window panes, some missing shingles or siding, some peeling paint).

[ ] No, only regular maintenance is needed (for example, painting, leaking faucets, clogged gutters or eavestroughs).

5. Please indicate the age, sex, and relationship to you of each person who regularly lives in this housing unit. (ATTACH A SEPARATE LIST IF YOU NEED MORE SPACE.)

	AGE (Years)	SEX (Check One) Male	Female	RELATIONSHIP TO YOU (Check One) Spouse/ Common-Law	Child	Other Relative	Unrelated Roomers or Boarders	Others (e.g., Roomate, etc.)
Yourself	____	[ ]	[ ]					
Person 2	____	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Person 3	____	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Person 4	____	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Person 5	____	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Person 6	____	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Person 7	____	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Person 8	____	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

6. (a) How many months has your household occupied this dwelling in 1993?
_____ months

(b) What is the principal fuel used to heat your dwelling? (CHECK ONE)

Electricity	[ ]
Gas or oil	[ ]
Wood, kerosene or other (Please specify): _____	[ ]
Don't know	[ ]

We would like some information about your housing costs. Keep in mind that the following questions apply to costs for last month and then for the number of months that you reported in question 6(a). Please refer to cheque stubs or invoices, if you have them, when writing dollar amounts.

7. In addition to basic rent, did you make any direct payments to utility companies or surcharges to your project for any of the following services?

(Please check one box on each line and enter the amounts paid directly if applicable.)

	Do not have this	Service included in basic rent	Pay additional amount	Amount paid last month	Amount paid to date in 1993
(a) Water	[ ]	[ ]	[ ]	$ .00	$ .00
(b) Electricity	[ ]	[ ]	[ ]	$ .00	$ .00
(c) Gas	[ ]	[ ]	[ ]	$ .00	$ .00
(d) Oil	[ ]	[ ]	[ ]	$ .00	$ .00
(e) Parking	[ ]	[ ]	[ ]	$ .00	$ .00
(f) Cable	[ ]	[ ]	[ ]	$ .00	$ .00
(g) Refrigerator	[ ]	[ ]	[ ]	$ .00	$ .00
(h) Stove	[ ]	[ ]	[ ]	$ .00	$ .00
(i) Extra Storage	[ ]	[ ]	[ ]	$ .00	$ .00
(j) Other (PLEASE SPECIFY): _____	[ ]	[ ]	[ ]	$ .00	$ .00

8. How much was your basic rent, not including the above payments, last month?

(PLEASE INDICATE AMOUNT). $_____

9. Are you asked to provide information to the project administration about your income on an annual basis? (CHECK ONE)

   [ ] Yes
   [ ] No (GO TO QUESTION 11)
   [ ] Don't Know (GO TO QUESTION 11)

10. If you are required to provide information about your income on an annual basis, is it used to determine your monthly rental charges? In other words, is your rent "geared-to-your-income"? (CHECK ONE)

    [ ] Yes
    [ ] No
    [ ] Don't Know

11. In 1992, considering all sources, what was your total household income before deductions? (Please consult 1992 tax returns, if filed, or any other records you may have on income.)

    Total income for ALL OF 1992: $_____.00

12. What was last month's total household income, from all sources, before deductions.

    Total income for LAST MONTH: $_____.00

13. During the last month, did you or any other member of your household receive any income from the following sources? If yes, please indicate the amount received by each individual household member to the nearest dollar, thinking about the persons listed in question 5. (Please consult any records you may have on income, including cheque stubs.)

	No	Yes	Monthly Amount: Yourself	Person 2	Person 3	Person 4	Other Persons shown in Question 5
(a) Earned income (full or part-time) such as wages or salaries (before deductions) or income from self-employment such as baby sitting, sales (e.g., Avon), etc.	[ ]	[ ]	_____	_____	_____	_____	_____
(b) Income from roomers and boarders (not related)	[ ]	[ ]	_____	_____	_____	_____	_____
(c) Family allowance (Child tax benefit)	[ ]	[ ]	_____	_____	_____	_____	_____
(d) Old age security pension; guaranteed income supplement; spouses' allowance from federal government only; Canada or Quebec pension plan benefits	[ ]	[ ]	_____	_____	_____	_____	_____
(e) Unemployment Insurance benefits	[ ]	[ ]	_____	_____	_____	_____	_____
(f) Social assistance (or welfare) (total amount of cheque)	[ ]	[ ]	_____	_____	_____	_____	_____
(g) Provincial income supplements	[ ]	[ ]	_____	_____	_____	_____	_____
(h) Child support payments, alimony	[ ]	[ ]	_____	_____	_____	_____	_____
(i) Retirement pensions or superannuations resulting from membership in employers' pension plans.	[ ]	[ ]	_____	_____	_____	_____	_____
(j) Any other income (e.g., interest, strike pay, bursaries or grants, etc.)							
(PLEASE SPECIFY)							
_____	[ ]	[ ]	_____	_____	_____	_____	_____
_____	[ ]	[ ]	_____	_____	_____	_____	_____

14. During 1992, did you or any other member of your household receive any income from the following sources? If yes, please indicate the amount received by each individual household member to the nearest dollar, thinking about the persons listed in question 5. (Please consult 1992 tax returns, if filed, or any other records you may have on income, including cheque stubs.)

	No	Yes	Annual Amount: Yourself	Person 2	Person 3	Person 4	Other Persons Shown in Question 5
(a) Earned income (full or part-time) such as wages or salaries (before deductions) or income from self-employment such as baby sitting, sales (e.g., Avon), etc.	[ ]	[ ]	_____	_____	_____	_____	_____
(b) Income from roomers and boarders (not related)	[ ]	[ ]	_____	_____	_____	_____	_____
(c) Family allowance	[ ]	[ ]	_____	_____	_____	_____	_____
(d) Old age security pension; guaranteed income supplement; spouses' allowance from federal government only; Canada or Quebec pension plan benefits	[ ]	[ ]	_____	_____	_____	_____	_____
(e) Unemployment Insurance benefits	[ ]	[ ]	_____	_____	_____	_____	_____
(f) Social assistance (or welfare) (total amount of cheque)	[ ]	[ ]	_____	_____	_____	_____	_____
(g) Provincial income supplements	[ ]	[ ]	_____	_____	_____	_____	_____
(h) Child support payments, alimony	[ ]	[ ]	_____	_____	_____	_____	_____
(i) Retirement pensions or superannuation resulting from membership in employers' pension plans	[ ]	[ ]	_____	_____	_____	_____	_____
(j) Any other income (e.g., interest, strike pay, bursaries or grants, etc.)							
(PLEASE SPECIFY)							
_____	[ ]	[ ]	_____	_____	_____	_____	_____
_____	[ ]	[ ]	_____	_____	_____	_____	_____

15. What language is spoken most often in your home? (CHECK ONE)

    [ ] English
    [ ] French
    [ ] Other language or bilingual
    (PLEASE SPECIFY: _____)

16. In what year did you first move into your current home and this non-profit housing project? (Please indicate year for each).

    (a) Moved into this *home*: 19 ___ (year).

    (b) Moved into this non-profit housing *project*: 19 ___ (year).

17. As part of this research, we will also be reviewing administrative files for this building. One part of this study involves a comparison of the information provided in this questionnaire with the information kept in administrative files. The comparison is being done simply to find out how well our questionnaire works and if improvements can be made to gather information more easily and accurately. No one in your project will ever see the information that you provide to Ekos Research. Please check off the box below to agree to a comparison of information collected in this questionnaire with that in administrative files.

    [ ] I agree.

Thank you for your co-operation in completing this questionnaire. Please seal it in the Special Letter envelope provided and drop it in any Canada Post mailbox. If the envelope is missing, please call Ekos Research collect at (613) 235-7215 and ask for Susan Morris.

APPENDIX B

PROJECT ADMINISTRATOR INTERVIEW GUIDE

Ekos Research Associates Inc., 1994

Project: _____ Date: _____

Administrator: _____

As you may know the purpose of this study is to determine the reliability of the methods CMHC uses to measure housing affordability when evaluating social housing programs. To this end we will be collecting information from residents and administrative files of social housing projects in a number of urban centres across the country. The purpose of the interview with the project administrator is to gather information specific to each project, so that we have some understanding of how rents were calculated, and what was included. This information will be invaluable during the analysis of the survey data.

1. How many Rent-Geared-to-Income (RGI), i.e., subsidized directly or indirectly, and non-RGI (households not receiving subsidy) households are in this project?

   RGI |___|___| Non-RGI |___|___|

The following questions apply only to RGI (subsidized) households

Income

2. Can you tell me exactly what the eligibility criteria are in order to qualify for subsidization (rent-geared-to-income)?

_____

_____

_____

_____

_____

_____

_____

_____

3. What steps, if any, are taken to verify income? _____

_____

_____

_____

_____

_____

_____

4. We'd like to know how household income is defined, what income is included in the calculation; first for the purposes of determining eligibility and then calculating the geared-to-income rent?

a) Income definition for eligibility criteria - is the income of unrelated people included in household income? Yes ☐ No ☐

Income	Yes	No	Comments
Earnings			
Wages and salaries	☐	☐	
Net income from farm self-employment	☐	☐	
Net income from non-farm self-employment	☐	☐	
Military pay and allowances	☐	☐	
Net income from roomers and boarders (non-related)	☐	☐	
Investment income (interest on bonds, deposits and savings certificates, dividends, net rental income, trust fund...)	☐	☐	
Capital gains or losses	☐	☐	
Government transfer payments			
Child Tax Benefit	☐	☐	
Social assistance	☐	☐	
Provincial income supplement	☐	☐	
Canada/Quebec pension plan benefits	☐	☐	
Old age security, Guaranteed Income Supplement, Spouse's Allowances	☐	☐	
Unemployment Ins. benefits	☐	☐	
Other government sources (veteran's pensions, pensions to widows and dependents of veterans, workers compensation, payments received from training programs sponsored by fed or provincial gov't., refundable provincial tax credits, etc..)	☐	☐	
Retirement Pensions, superannuation and annuities	☐	☐	
Other money income (e.g., income received for: the care of children from the Children's Aid Society; non-repayable scholarships, bursaries and grants; alimony; severance pay etc...)	☐	☐	

b) Income definition for geared-to-rent calculation (i.e., what sources of income, mentioned in detail above, are ***excluded*** in the calculation?) Is income of non-related people included in the household income? Yes ❑ No ❑

Income included in geared-to-rent calculation	Yes	No
Earnings		
Wages and salaries	❑	❑
Net income from farm self-employment	❑	❑
Net income from non-farm self-employment	❑	❑
Military pay and allowances	❑	❑
Net income from (non-related) roomers and boarders	❑	❑
Investment income	❑	❑
Capital Gains or losses	❑	❑
Government transfer payments		
Child Tax Benefit	❑	❑
Social assistance	❑	❑
Provincial income supplement	❑	❑
Canada/Quebec pension plan benefits	❑	❑
Old age security, Guaranteed Income Supplement, Spouse's Allowances	❑	❑
Unemployment Ins. benefits	❑	❑
Other government sources	❑	❑
Retirement Pensions, superannuation and annuities	❑	❑
Other money income	❑	❑

Exclusions	
Income, ***in excess*** of a certain amount (*specify amount*), of children or dependents ⌊_____⌋ .00	❑
Income of children or dependents who are in full time attendance at school	❑
Work related earnings of household members, excluding head, up to a certain amount (*specify amount*) per year per qualifying household member ⌊_____⌋ .00	❑
Income, other than social assistance,payments, of a single parent family up to a certain amount (*specify amount*) per annum ⌊_____⌋ .00	❑
Room and board paid to the household (non-relatives)	❑
Child Tax benefits	❑
An amount for each dependent child	❑
Veterans Pensions	❑
Other	❑
Other	❑
Other	❑
Other	❑
Other	❑
Other	❑

Rents

5. When a new household first moves into a unit, how is the initial rent calculated? Does this initial calculation change? (i.e., what is the rent to income scale used, for example, is rent a fixed percentage of income, is a sliding scale used, is it a flat rate charged per family?) ***What is the exact formula?*** (Include considerations for tenants who pay their own heat, how the seasonality (i.e., high payments in the winter and low payments in the summer) of heating payments handled, is factored into the rental calculation.)

   a) Where household income consists *only* of social assistance?

   b) Where household income consists *partly* of social assistance?

   c) Where household income does not consist of social assistance?

6. Does this calculated rent differ in any way from the total monthly payment from the household to the project? (e.g., there might be surcharges for parking, electricity, storage etc..., which are added on to the calculated rent and will comprise the monthly payment the tenant makes).

   Yes ☐ No ☐ If yes, how and why:

7. What kind of heating system is used?

Gas	☐
Oil	☐
Electric	☐
Other (specify) _____	☐

   Are there individual unit meters? Yes ☐ No ☐

8. What does rent include? Does it include any utilities or other services or is an allowance for other utilities made?

a) Utilities:

	Included	Not Included	N/A
Space heat	❑	❑	❑
Water	❑	❑	❑
Water Heat	❑	❑	❑
Electricity	❑	❑	❑
Parking	❑	❑	❑
Cable	❑	❑	❑
Storage	❑	❑	❑

b) If utilities are not included, are utilities allowances made, how are they treated? (e.g., average monthly charge, refund on receipted payment...)

9. Is there any membership fee, sector support levy or any other such payment which is paid for through rent on a voluntarily or mandatory basis? If yes, how do RGI households pay it? Yes ❑ No ❑

Changes in Income and Rents

10. Are households required to report *any* change in income Yes ❑ No ❑

11. Do any sanctions exist for failure to report? (either an increase or decrease).

12. a) How often is income information about a particular household collected and updated, if no changes are reported (i.e., how often are income reviews conducted)?

└──┘ per year Date (dd-mm) └──┘└──┘ to └──┘└──┘

└──┘└──┘ to └──┘└──┘

b) What period does this income information represent? (e.g., is it the current monthly income at the time of the review, an annual amount for the previous year, etc...)

c) What kind of proof of income is acceptable?

We'd like to know how often rent is recalculated for individual households, and under what circumstances (i.e., is it recalculated automatically whenever a change in income is reported, or is there a lag?)

13. a) Is rent immediately reduced for a household who experiences a decline in income? Yes ❑ No ❑ If no:

b) Why not?

_____

_____

_____

c) What is the lag from when a change in income is reported and when the change in rent is effected?

_____

_____

14. a) Is rent immediately increased if there is an increase in income? Yes ❑ No ❑ If no:

b) Why not?

_____

_____

_____

c) What is the lag from when a change in income is reported and when the change in rent is effected?

_____

_____

15. Are there any other possible reasons shelter cost to income ratios could exceed 30 per cent for RGI residents?

_____

_____

_____

_____

_____

_____

_____

_____

APPENDIX C

DESCRIPTION OF THE SAMPLE

Ekos Research Associates Inc., 1994

Sampled Projects by Non-Profit Private and Public Housing Authorities

City	Private	Public	Total
St. John's	1	2	3
Montréal	-	3	3
Ottawa	-	2	2
Toronto	1	1	2
Vancouver	3	-	3
Total	**5**	**8**	**13**

Description of the Sample

Total Household Size	One Adult			Two Adults			Total # House-holds
	# dependent children (≤25 yrs)	# Households where adult is ≤ 64 yrs	# Households where adult is ≥65 yrs	# dependent children (≤25 yrs)	# Households where adult is ≤ 64 yrs	# Households where adult is ≥65 yrs	
1	0	47	86	-	-	-	133
2	1	37	-	0	19*	20	76
3	2	14	-	1	11	-	25
4	3	9	-	2	19	-	28
5-7	4-5	1	-	3-5	19	-	20
Total	-	108	86	-	68	24	282*

* Four households within this group have two adults with no children where one adult is 64 years of age or younger, however, the other is 65 years of age or older.

	Number
Average number of people in household	2.04
Average number of children	0.73
Average number of adults	1.31

	Number	**Per Cent**
Sex of Respondent		
Male	81	28.2
Female	206	71.8
Age of Respondent		
20 to 34 years	60	21.3
35 to 49 years	66	23.4
50 to 64 years	49	17.4
65 years or older	107	37.9
Household Income		
Less than $5,000	19	7.2
$5,000 - $9,999	60	22.7
$10,000 - $14,999	83	31.4
$15,000 - $19,999	41	15.5
$20,000 - $24,999	26	9.9
$25,000 or more	35	13.3

Note: Total number of respondents differs depending on the breakdown due to missing data.

APPENDIX D

LONG FORM OF THE TENANT QUESTIONNAIRE: RATIO DEFINITIONS AND RESULTS

Ekos Research Associates Inc., 1994

This appendix presents the results of the research which pertain to the long form of the questionnaire. It begins with a list of the ratio definitions for the long form which correspond to those presented in the text for the short form of the questionnaire. The affordability problem findings and explanations are then presented in a similar format as that used for the short form.

1.1 Long Form Ratios

L (for long form of questionnaire)

E (to indicate that electricity payments, if extra, are included)
N (to indicate that electricity payments, if extra, are not included)

M (to indicate that any extra payment is on the basis of last month)
Y (to indicate that any extra payment is on the basis of year-to-date)

A (to indicate income calculated from annual amount)
L (to indicate income calculated from last month's amount)
LT (to indicate income calculated from last month's amount, using the matrix total for all household members)
AT (to indicate income calculated from annual amount, using the matrix total for all household members)

Eligibility Definition:

L-E-M-A Shelter includes rent plus any extra (monthly) payments made for electricity, water, gas or oil and refrigerator or stove rental

Income is a single annual amount for 1992 divided by 12 to obtain a monthly amount.

L-E-Y-A Shelter includes rent plus any extra (average monthly to-date) payments made for water, electricity gas or oil and refrigerator or stove rental

Income is a single annual amount for 1992 divided by 12 to obtain a monthly amount.

L-E-M-L Shelter includes rent plus any extra (monthly) payments made for electricity, water, gas or oil and refrigerator or stove rental

Income is a single amount for the previous month.

L-E-Y-L Shelter includes rent plus any extra (average monthly to-date) payments made for water, electricity gas or oil and refrigerator or stove rental

Income is a single amount for the previous month.

L-E-M-LT Shelter includes rent plus any extra (monthly) payments made for electricity, water, gas or oil and refrigerator or stove rental

Income is the sum of (last) monthly matrix amounts

L-E-Y-LT Shelter includes rent plus any extra (average monthly to-date) payments made for water, electricity gas or oil and refrigerator or stove rental

Income is the sum of (last) monthly matrix amounts

L-E-M-AT Shelter includes rent plus any extra (monthly) payments made for electricity, water, gas or oil and refrigerator or stove rental

Income is the sum of 1992 annual matrix amounts, divided by 12 to obtain a monthly amount.

L-E-Y-AT Shelter includes rent plus any extra (average monthly to-date) payments made for water, electricity gas or oil and refrigerator or stove rental

Income is the sum of 1992 annual matrix amounts, divided by 12 to obtain a monthly amount.

Benefit Definition:

L-N-M-A Shelter includes rent plus any extra (monthly) payments made for water, gas or oil and refrigerator or stove rental but **not** for electricity

Income is a single annual amount for 1992 divided by 12 to obtain a monthly amount.

L-N-Y-A Shelter includes rent plus any extra (average monthly to-date) payments made for water, gas or oil and refrigerator or stove rental, but **not** for electricity

Income is a single annual amount for 1992 divided by 12 to obtain a monthly amount.

L-N-M-L Shelter includes rent plus any extra (monthly) payments made for water, gas or oil and refrigerator or stove rental, but **not** for electricity

Income is a single amount for the previous month.

L-N-Y-L Shelter includes rent plus any extra (average monthly to-date) payments made for water, gas or oil and refrigerator or stove rental, but **not** for electricity

Income is a single amount for the previous month.

L-N-M-LT Shelter includes rent plus any extra (monthly) payments made for water, gas or oil and refrigerator or stove rental, but **not** for electricity

Income is the sum of (last) monthly matrix amounts excluding income of children or dependents in excess of $5,800, family allowance and $1,000 earned income deduction as applicable

L-N-Y-LT Shelter includes rent plus any extra (average monthly to-date) payments made for water, gas or oil and refrigerator or stove rental, **not** electricity

Income is the sum of (last) monthly) matrix amounts excluding family allowance and $1,000 earned income deduction as applicable

L-N-M-AT Shelter includes rent plus any extra (monthly) payments made for water, gas or oil and refrigerator or stove rental, but **not** for electricity

Income is the sum of 1992 annual matrix amounts, excluding income of children or dependents in excess of $5,800, family allowance and $1,000 earned income deduction as applicable, divided by 12 to obtain a monthly amount.

L-N-Y-AT Shelter includes rent plus any extra (average monthly to-date) payments made for water, gas or oil and refrigerator or stove rental, but **not** for electricity

Income is the sum of 1992 annual matrix amounts, excluding income of children in excess of $5,800, family allowance and $1,000 earned income deduction as applicable, divided by 12 to obtain a monthly amount.

It should be noted that long form benefit ratios (LNMA, LNYA, LNML, LNYL) which use the single annual and monthly amounts contain adjusted shelter cost and non-adjusted income components.

1.2 Phase I: Replication of Previous Findings

Once the various shelter cost-to-income ratios were calculated for each tenant, univariate frequencies were run to determine the extent of affordability

problems in the sample. Of interest was how many of the calculated ratios were greater than or equal to .30.

The results of the ratio calculations for the 16 ratios from the long form of the questionnaire are presented in Exhibit D.1. This exhibit displays the distribution of ratio values lying within various interval ranges for the 16 ratios. As indicated by the bottom three rows of the exhibit, the proportion of tenants displaying an apparent affordability problem varies considerably from ratio to ratio[9].

The number of affordability problems identified by the various ratios ranges from nine to 13 for the long form ratios (out of a possible 23 cases in which at least one of the 16 ratios was greater than or equal to .30).

As presented in Exhibit D.1, ratios calculated under the eligibility definition signalled a greater number of affordability problems than those under the benefit definition.

Relatively greater numbers of affordability problems were apparent using the long form when:

- matrix income amounts were used;
- annual income was used; and
- electricity was included in the calculation.

1.3 Phase II: Case-by-Case Analysis of Affordability Problems

Once affordability problems were identified, an in-depth analysis of each case which manifested a ratio greater than or equal to .30 was conducted. Raw survey and administrative data were scrutinized and compared in order to determine why tenants might appear to be paying 30 per cent or more of their income on shelter costs.

For some of the more ambiguous reasons (e.g., an income decline which seemed not to have been reported or rental or income discrepancies between the survey and the administrative data), it was necessary to contact respondents directly in an attempt to obtain clarification.

9. It must be noted that the income data captured in the long form matrix was far less complete than income data captured via a single amount. Consequently the percentages reported for ratios using matrix income represent fewer valid cases than for ratios using a single amount.

EXHIBIT D.1
Distribution of Shelter Cost-to-Income Ratios

	Long Form															
	LEMA	LEYA	LEML	LEYL *	LEMLT	LEYLT	LEMAT	LEYAT	LNMA	LNYA	LNML	LNYL	LNMLT	LNYLT	LNMAT	LNYAT
Less than .15	6.1	9.1	2.9	5.7	8.0	8.0	4.5	4.5	9.1	9.1	8.6	8.6	8.0	8.0	4.5	4.5
.15 to .19	6.1	6.1	8.6	8.6	8.0	12.0	9.1	9.1	6.1	6.1	8.6	8.6	4.0	4.0	9.1	9.1
.20 to .24	12.1	9.1	14.3	11.4	24.0	24.0	9.1	9.1	15.2	15.2	11.4	11.4	16.0	16.0	4.5	4.5
.25 to .29	45.5	45.5	42.9	42.9	24.0	20.0	18.2	18.2	45.5	45.5	45.7	45.7	36.0	36.0	27.3	27.3
.30 to .34	18.2	18.2	17.1	17.1	20.0	20.0	18.2	18.2	12.1	12.1	11.4	11.4	16.0	16.0	4.5	4.5
.35 to .39	0	0	2.9	2.9	4.0	4.0	4.5	4.5	0	0	2.9	2.9	8.0	8.0	4.5	4.5
.40 to .44	3.0	3.0	5.7	5.7	8.0	8.0	4.5	4.5	3.0	3.0	5.7	5.7	8.0	8.0	9.1	9.1
.45 to .49	0	0	2.9	2.9	0	0	0	0	0	0	2.9	2.9	0	0	4.5	4.5
Over .50	9.1	9.1	2.9	2.9	4.0	4.0	31.8	31.8	9.1	9.1	2.9	2.9	4.0	4.0	31.8	31.8
% cases where ratios are greater than or = to 30%	30.3	30.3	31.4	31.4	36.0	36.0	59.1	59.1	24.2	24.2	25.7	25.7	36.0	36.0	54.5	54.5
number of cases where ratios are greater than or = to 30%	10	10	11	11	9	9	13	13	8	8	9	9	9	9	12	12
Total number of valid cases	33	33	35	35	25	25	22	22	33	33	35	35	25	25	22	22

* Note: Percents are valid per cent of cases.

Telephone follow-up calls were made to tenants in order to clarify any outstanding anomalies which could not be resolved through a comparison of survey and administrative data. Calls were made to 12 of the 23 tenants for whom an affordability problem was identified by at least one long form ratio. Of the total of 12 tenants that were called: three could not be reached (despite repeated efforts); and a telephone listing was not available for one; leaving a total of eight successfully completed calls.

After preliminary analyses were conducted and the follow-up calls completed, corrections were made to the data where possible. The ratios were then recalculated and the number of affordability problems identified by long form ratios dropped dramatically. These results are presented later in this appendix.

Some detailed explanations as to why shelter cost-to-income ratios equal or exceed 30 per cent are itemized in the following section. Six different explanations were found which encompass both true and false instances of affordability problems.

1.4 Explanations for Affordability Problem Findings

The explanations for affordability problem findings using the long form of the questionnaire are essentially the same as the explanations for the short form results. Therefore, they are not repeated here except where there are particular details related specifically to the use of the long form.

Seasonality - Utility payments higher than costs allotted by project

This category combines two types of occurrence. One is due strictly to the seasonality of payments made to a utility company and only applies to ratios calculated using average month's utility payments based on payments to-date for the year. As most respondents completed the questionnaire in the summer, their last month's utility (e.g., gas and oil as well as electricity as it applies to eligibility calculations) payments were often somewhat lower than their average monthly payments to-date. This is because payments to-date spanned the winter when energy consumption is at its greatest. The increased amount paid for periods of greater consumption proved to be enough to make the difference between a ratio of less than .30 and a ratio of .30 or more.

This is a true affordability problem.

Respondent Error

In addition to the examples described for the short form, respondent error also includes any differences between single figures and matrix income amounts

on the long form. At times these two amounts (single and matrix), for the same alleged time period, differed substantially. The reasons for this ranged from confusion (e.g., monthly amounts were entered in the annual matrix) to simple omission. In one instance the respondent was unable to provide a detailed breakdown on the matrix, but was able to specify a total amount. In one or two other instances, the matrix totals were actually somewhat *more* complete because the matrix listed all the components which should be considered in household income; in these cases respondents recorded more on the matrix because it included some components that they had not remembered earlier for the single total amount.

In some instances it was possible with the help of the administrative data to determine what was the source of the error; in others it was necessary to telephone and determine if our suspicions were correct. For the most part they were confirmed.

Errors of these kinds constitute false affordability problems.

1.5 Summary of Explanations

A summary of the analysis of the origin of affordability problem findings for the long form is presented in Exhibit D.2. Explanations as to why the ratios fall above the target of less than 30 per cent are listed across the top; individual ratios are listed down the side. Row totals summarize the total number of cases which manifested an apparent affordability problem using a particular ratio and the number of different factors which contributed to the affordability problem.

Only the first two columns (depending on which definition of affordability, eligibility or benefit, is applied) constitute "true" affordability problems[10]. It should be noted that some of the figures presented in these two tables reflect *hypotheses* regarding the nature of the apparent affordability problems; some of the frequencies change significantly upon completion of the follow-up calls, after the ratios are recalculated in Phase III. These changes are presented later in this appendix.

10. Ratios of .30 or greater which are explained under column three "Utility payments included in eligibility ratio - not in RGI calculation" *are* considered to be true affordability problems under the core need (eligibility) definition.

Exhibit D.2
Shelter-to-income Ratios - Long Form

Ratio	Income decline not reported	Administrative Factors	Utility payments included in eligibility ratio - not included in RGI calculation	Rental payment as per survey includes other services - not included in RGI calculation	Rent based on current income which is different from 1992 income in calculation	Respondent error	Total	Number of Affordability Problems (ratio =or> .3)
Eligibility - includes electricity payments								
LEMA Rent + all monthly utility payments/1992 annual inc.		4	2	3	4	2	15	10
LEYA Rent + all average utilities to date/1992 annual inc.		3	3	3	4	2	15	10
LEML Rent + all monthly utility payments/last month's inc.	4	6	3	2		4	19	11
LEYL Rent + all average utilities to date/last month's inc.	4	6	3	2		4	19	11
LEMLT Rent + all monthly utility payments/monthly matrix inc.	3	4	3	1		4	15	9
LEYLT Rent + all average utilities to date/monthly matrix inc.	3	4	3	1		4	15	9
LEMAT Rent + all monthly utility payments/1992 matrix inc.		2	3	2	2	8	17	13
LEYAT Rent + all average utilities to date/1992 matrix inc.		2	3	2	2	8	17	13
Benefit - no electricity payments								
LNMA Rent + monthly utilities no electricity/1992 annual inc.		3		2	4	2	11	8
LNYA Rent + utilities to date no electricity/1992 annual inc.		3		2	4	2	11	8
LNML Rent + monthly utilities no electricity/last month's inc.	3	4		1		4	12	9
LNYL Rent + utilities to date no electricity/last month's inc.	3	4		1		4	12	9
LNMLT Rent + monthly utilities no electricity/monthly matrix inc.	3	3		1		5	12	9
LNYLT Rent + utilities to date no electricity/monthly matrix inc.	3	3		1	2	5	12	9
LNMAT Rent + monthly utilities no electricity/1992 matrix inc.		2		1	2	9	14	12
LNYAT Rent + utilities to date no electricity/1992 matrix inc.		2		1	2	9	14	12

Number of Long Forms received: 53
Number of Long Forms agreed to a match with admin. data: 41
Number of Verifiable Long Forms: 37 (4 respondents could not be reached during telephone follow up calls.)
Number of Long Forms in which at least one ratio was .3 or greater: 24 (out of 37)

[1] Note: The number of *explanations* of affordability problems is greater than the actual number of affordability problems (as identified by a specific ratio) because there might have been more than one factor involved, for example, many respondents included the electricity surcharge when stating their rent *and* also indicated this amount as an additional payment. Each factor in and of itself was not enough to raise the shelter to income ratio to .3 or above, but when taken together was; so both explanations were tallied.

It should also be noted that the total number of explanations is greater than the number of affordability problems associated with a given shelter cost-to-income ratio. The reason for this is that on a number of occasions there was more than one contributing factor to an affordability problem; each factor considered on its own was not enough to result in an affordability problem, but when considered together, raised the ratio to .30. There are typically a greater number of factors, and hence a greater number of explanations, associated with eligibility ratios than with benefit ratios due to the inclusion of electricity. Although the introduction of electricity payments alone into the shelter cost equation may be sufficient to result in an affordability problem, when considered in combination with other factors these payments are even more likely to cause a given ratio to reach or exceed .30.

Distributions of the explanations of affordability problems are quite varied. Respondent error was the most likely cause of an apparent affordability problem among long form ratios.

Utility payments, which were either reported as being an additional payment on top of the base occupancy cost (either to a utility company or to the housing administration) or were included in the rental payment were the next most likely cause of apparent affordability problems for long form ratios.

1.6 Phase III: Shelter Cost-to-Income Ratio Recalculations

Once all apparent affordability problems were identified (Phase I) and the comparison of survey and administrative data conducted to determine whether the ratios had *correctly* identified affordability problems (Phase II), the next step was to make appropriate corrections to the data and recalculate the shelter cost-to-income ratios and their distributions (Phase III). This new analysis would provide a more accurate estimate of the incidence of true affordability problems in our sample and was conducted in the same manner as that for the short form.

Once the data were revised, the 16 ratios were recalculated. Exhibit D.3 presents the distribution of recalculated shelter cost-to-income ratios. The number of affordability problems identified by the various ratios ranges from five to 10 (down from nine to 16 previously).

Exhibit D.2 has been replicated in Exhibit D.4 using the recalculated ratios. The total number of cases which exhibited at least one affordability problem dropped from 24 to 12 (out of a total of 37 tenants who agreed to have their survey and administrative data matched and whose responses could be followed up by telephone).

EXHIBIT D.3
Distribution of Recalculated Shelter Cost-to-Income Ratios

	Long Form															
	LEMA	LEYA	LEML	LEYL	LEMLT	LEYLT	LEMAT	LEYAT	LNMA	LNYA	LNML	LNYL	LNMLT	LNYLT	LNMAT	LNYAT
Less than .15	5.9	8.8	0	2.9	4.0	8.0	9.1	9.1	11.8	8.8	5.7	5.7	4.0	8.0	9.1	9.1
.15 to .19	11.8	8.8	8.6	8.6	12.0	16.0	9.1	9.1	5.9	8.8	8.6	8.6	16.0	12.0	9.1	9.1
.20 to .24	11.8	11.8	17.1	11.4	32.0	20.0	13.6	13.6	26.5	26.5	25.7	25.7	16.0	16.0	13.6	13.6
.25 to .29	52.9	52.9	57.1	60.0	32.0	36.0	36.4	36.4	44.1	44.1	42.9	42.9	44.0	44.0	36.4	36.4
.30 to .34	14.7	14.7	14.3	14.3	12.0	12.0	18.2	18.2	8.8	8.8	14.3	14.3	8.0	8.0	9.1	9.1
.35 to .39	0	0	0	0	0	0	4.5	4.5	0	0	0	0	4.0	4.0	9.1	9.1
.40 to .44	2.9	2.9	2.9	2.9	8.0	8.0	4.5	4.5	2.9	2.9	2.9	2.9	4.0	8.0	4.5	4.5
.45 to .49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.5	4.5
Over .50	0	0	0	0	3.4	3.4	4.5	4.5	0	0	0	0	0	0	4.5	4.5
% cases where ratios are greater than or = to 30%	17.6	17.6	17.1	17.1	20.0	20.0	31.8	31.8	11.8	11.8	17.1	17.1	20.0	20.0	31.8	31.8
number of cases where ratios are greater than or = to 30%	6	6	6	6	5	5	7	7	4	4	6	6	5	5	7	7
Total number of valid cases	34	34	35	35	25	25	22	22	34	34	35	35	25	25	22	22

* Note: Percents are valid per cent of cases.

Exhibit D.4
Recalculated Shelter Cost-to-Income Ratios - Long Form

Ratio	Income decline not reported	Administrative Factors	Utility payments included in eligibility ratio - not included in RGI calculation	Rental payment as per survey includes other services - not included in RGI calculation	Rent based on current income which is different from 1992 income in calculation	Respondent error	Total	Number of Affordability Problems (ratio =or> .3)
Eligibility - includes electricity payments								
LEMA Rent + *all* monthly utility payments/1992 annual inc.		4	1		3		8	6
LEYA Rent + *all* average utilities to date/1992 annual inc.		3	2		3		8	6
LEML Rent + *all* monthly utility payments/last month's inc.	3	5	2				10	6
LEYL Rent + *all* average utilities to date/last month's inc.	3	5	2				10	6
LEMLT Rent + *all* monthly utility payments/monthly matrix inc.	2	3	2			1	8	5
LEYLT Rent + *all* average utilities to date/monthly matrix inc.	2	3	2			1	8	5
LEMAT Rent + *all* monthly utility payments/1992 matrix inc.		2	2		2	2	8	7
LEYAT Rent + *all* average utilities to date/1992 matrix inc.		2	2		2	2	8	7
Benefit - no electricity payments								
LNMA Rent + monthly utilities no electricity/1992 annual inc.		3			2		5	4
LNYA Rent + utilities to date no electricity/1992 annual inc.		3			2		5	4
LNML Rent + monthly utilities no electricity/last month's inc.	3	4					7	6
LNYL Rent + utilities to date no electricity/last month's inc.	3	4					7	6
LNMLT Rent + monthly utilities no electricity/monthly matrix inc.	1	3				1	5	5
LNYLT Rent + utilities to date no electricity/monthly matrix inc.	1	3				1	5	5
LNMAT Rent + monthly utilities no electricity/1992 matrix inc.		3			2	2	7	7
LNYAT Rent + utilities to date no electricity/1992 matrix inc.		3			2	2	7	7

Number of Long Forms received: 53
Number of Long Forms agreed to a match with admin. data: 41
Number of verifiable Long Forms: 37 (4 respondents could not be reached during telephone follow-up calls.)
Number of cases dropped in Phase III: 12
Number of Long Forms in which at least *one* ratio was equal to or greater than .3: 12 (out of 37)

[1] Note: The number of *explanations* of affordability problems is greater than the actual number of affordability problems (as identified by a specific ratio) because there might have been more than one factor involved, for example, many respondents included the electricity surcharge when stating their rent *and* also indicated this amount as an additional payment. Each factor in and of itself was not enough to raise the shelter to income ratio above .3, but when taken together was; so both explanations were tallied.

The sharp decline in the number of affordability problems among long form ratios is explained by the use of matrix income data in the shelter cost-to-income calculation. Ratios which used income data obtained from the long form matrices identified a significantly higher proportion of affordability problems. However, the vast majority of these ratios reached or exceeded .30 due to respondent error as opposed to an actual affordability problem. Once the errors were corrected, the values calculated by these ratios fell within the acceptable range.

1.7 Common Explanations of Affordability Problems Using Recalculated Ratios

The most common explanations of affordability problems after recalculation were: 1) administrative factors, which included tenants whose rents were determined based on 30 per cent of their income; 2) utility payments, which were included in the survey (eligibility) ratios but were not included in the RGI calculation so that when they were included as shelter costs, shelter costs reached or exceeded 30 per cent of income; and 3) the current rent used in the survey ratio calculation was based upon current income which was different from the 1992 income used in the particular survey ratio calculation; if income, and consequently the rent, changed at any point since 1992, then a ratio which uses 1992 income is using inaccurate income information and artificial affordability problems may result.

1.8 Evaluation of the Various Ratios

The results of the long form replicated the findings from the short form of the questionnaire (i.e., using last month's income is better than using last year's annual income). Additionally, a matrix method for collecting income is not recommended.

APPENDIX E

EXAMPLES OF THE EXPLANATIONS FOR AFFORDABILITY PROBLEM FINDINGS

EXAMPLE 1: Income decline not reported / Rental payment as per survey includes other services — not included in RGI calculation.

SHORT FORM ✓ LONG FORM ❑

Income

Survey:

Single amount (last month) = 1,250
Single amount (1992 - divided by 12 months) = 17,000 / 12 = 1,417

Administrative:

Total monthly income = 17,600 / 12 = 1,467

Eligibility for Deductions for Benefit Calculations:

Family Allowance Yes ❑ No ✓

If yes: Monthly amount =

Earned Income Deduction Yes ✓ No ❑

If yes: Monthly amount = 1,000 / 12 = 83

Shelter Cost

Survey:

Last month's rent = 374

Extra payments:
water =
electricity =
gas =
oil =
parking =
cable =
other =

Total (eligibility) = 374
Total (benefit) = 374

Administrative:

Rent = 347

Surcharges: electricity = 27
water heating =
cable =
laundry =
other =

Allowances: space heating =
water heating =
other =

Monthly payment = 347 + 27 = 374

Ratios

Eligibility

S-E-O-A = 374 / 1,417 = .26
S-E-O-L = 374 / 1,250 = .30

Benefit

S-N-O-A = 374 / 1,417 = .26
S-N-O-AI= 374 / 1,334 = .28 (1,417 - 83 = 1,334)
S-N-O-L = 374 / 1,250 = .30

Narrative

Of the five shelter cost-to-income ratios computed for this tenant, two resulted in an affordability problem finding (SEOL and SNOL). When the tenant was telephoned, it was verified that the income had recently declined, therefore the rent (based on a previous higher income) was too high. The tenant, however, had not yet reported the decline in income to the project.

Another problem with this tenant's ratios concerns the fact that the tenant reported a rent of $374 with no additional electricity payments. The administrative files, however, revealed that the rent was actually $347 and that there was an electricity surcharge of $27. Using the survey information for the computation of benefit ratios meant that the electricity payment was erroneously included. The corrected benefit ratios (i.e., with the electricity surcharge removed from the shelter cost numerator) are as follows: SNOA = .24; SNOAI = .26; and SNOL = .28.

EXAMPLE 2: Administrative Factors

SHORT FORM ✓ LONG FORM ❑

Income

Survey:

Single amount (last month) = 950

Single amount (1992 - divided by 12 months) = 12,000 / 12 = 1,000

Administrative:

Total monthly income = 1,250

Eligibility for Deductions for Benefit Calculations:

Family Allowance Yes ❑ No ✓

If yes: Monthly amount =

Earned Income Deduction Yes ❑ No ✓

If yes: Monthly amount =

Shelter Cost

Survey:

Last month's rent = 374

Extra payments:
water =
electricity =
gas =
oil =
parking =
cable = 9
other =

Total (eligibility) = 374
Total (benefit) = 374

Administrative:

Rent = 374

Surcharges: electricity =
water heating =
cable = 9
laundry =
other =

Allowances: space heating =
water heating =
other =

Monthly payment = 374 + 9 = 383

Ratios

Eligibility

S-E-O-A = 374 / 1,000 = .37
S-E-O-L = 374 / 950 = .39

Benefit

S-N-O-A = 374 / 1,000 = .37
S-N-O-AI= 374 / 1,000 = .37
S-N-O-L = 374 / 950 = .39

Narrative

The administrative data indicated that this tenant's monthly income was comprised of the following:

- old age security pension, guaranteed income supplement, spouses' allowance from federal government only, Canada or Quebec pension plan benefits = 800
- company pension = 150
- interest on savings = 300

for a total of $1,250. When the tenant was telephoned to try to understand the discrepancy in the income figures between the survey and the administrative data, it was found that the interest amount was supposed to be an annual figure although the project interpreted it as monthly. Therefore, the administration of the project had erroneously set the rent too high, resulting in an affordability problem.

EXAMPLE 3: Utility payments included in eligibility ratio — not included in RGI calculation / seasonality / rent based on current income which is different from 1992 income in calculation / Administrative factors.

SHORT FORM ❑ LONG FORM ✓

Income

Survey:

Single amount (last month) = 1,150

Single amount (1992 - divided by 12 months) = 13,200 / 12 = 1,100

Matrix total (last month) = 1,150

Matrix total (1992 - divided by 12 months) = 13,750 / 12 = 1,146

Administrative:

Total monthly income = 1,100

Eligibility for Deductions for Benefit Calculations:

Family Allowance Yes ❑ No ✓

If yes: Monthly amount =

Earned Income Deduction Yes ❑ No ✓

If yes: Monthly amount =

Shelter Cost

Survey:

Last month's rent = 343

Extra payments:	Last month	Average year-to-date
water =		
electricity =	16	116 / 6 = 19
gas =		
oil =		
parking =		
cable =	20	120 / 6 = 20
refrigator =		
stove =		
extra storage =		
other =		

Principal source of heat:

electricity ❑ gas or oil ❑
other ✓

Total (eligibility): 343 + 16 = 359 (last month's utilities)
343 + 19 = 362 (year-to-date utilities)

Total (benefit) = 343

Administrative:

Rent = 343

Surcharges:
electricity =
water heating =
cable =
laundry =
other =

Allowances:
space heating =
water heating =
other =

Monthly payment = 343

Ratios

Eligibility

L-E-M-A = 359 / 1,100 = .33
L-E-Y-A = 362 / 1,100 = .33
L-E-M-L = 359 / 1,150 = .31
L-E-Y-L = 362 / 1,150 = .32
L-E-M-LT = 359 / 1,150 = .31
L-E-Y-LT = 362 / 1,150 = .32
L-E-M-AT = 359 / 1,150 = .31
L-E-Y-AT = 362 / 1,150 = .32

Benefit

L-N-M-A = 343 / 1,100 = .31
L-N-Y-A = 343 / 1,100 = .31
L-N-M-L = 343 / 1,150 = .30
L-N-Y-L = 343 / 1,150 = .30
L-N-M-LT = 343 / 1,150 = .30
L-N-Y-LT = 343 / 1,150 = .30
L-N-M-AT = 343 / 1,150 = .30
L-N-Y-AT = 343 / 1,150 = .30

Narrative

This tenant exhibited an affordability problem for all ratios, although they were due to several different reasons. All of the ratios under the eligibility definition are higher than the ratios under the benefit definitions. The reason they are higher is because the tenant's electricity payments have been included in the calculation although they were not taken into account during the determination of rent-geared-to-income.

Within the eligibility ratios, those ratios using year-to-date electricity payments (and, therefore, including payments from the winter) are higher than those using last month's payment (this is true for the first pair although rounding brings them both to .33), demonstrating a seasonality influence.

Under both the eligibility and benefit definitions, the first two ratios are higher than the remaining six. This is because tenant's income increased from 1992 to the present and, therefore, so did the rent. However, the first two ratios under the eligibility and benefit definitions apply the lower 1992 income to the higher 1993 rent, resulting in an affordability problem.

Finally, the remaining six ratios under the benefit definition are all at .30 which is an affordability problem, but this shelter cost-to-income ratio was deliberately set at .30 by the housing authorities in this tenant's province.

EXAMPLE 4: Utility payments higher than costs allotted by project.

SHORT FORM ✓ LONG FORM ❑

Income

Survey:

Single amount (last month) = 1,130

Single amount (1992 - divided by 12 months) = 14,000 / 12 = 1,167

Administrative:

Total monthly income = 1,275

Eligibility for Deductions for Benefit Calculations:

Family Allowance Yes ✓ No ❑

If yes: Monthly amount = 105

Earned Income Deduction Yes ❑ No ✓

If yes: Monthly amount =

Shelter Cost

Survey:

Last month's rent = 231

Extra payments:
water =
electricity = 60
gas = 69
oil =
parking =
cable = 22
other =

Total (eligibility) = 231 + 60 + 69 = 360
Total (benefit) = 231 + 69 = 300

Administrative:

Rent = 292 - 43 - 18 = 231

Surcharges: electricity =
water heating =
cable =
laundry =
other =

Allowances: space heating = 43
water heating = 18
other =

Monthly payment = 231

Ratios

Eligibility

S-E-O-A = 360 / 1,167 = .31
S-E-O-L = 360 / 1,130 = .32

Benefit

S-N-O-A = 300 / 1,167 = .26
S-N-O-AI= 300 / 1,062 = .28 (1,167 - 105 = 1,062)
S-N-O-L = 300 / 1,130 = .27

Narrative

This tenant demonstrates an affordability problem under the eligibility ratios but not under the benefit ratios. While an allowance of $61 is made for space and water heating, this tenant's payments are $69 for gas and $60 for electricity. The allowance does not cover the payment for gas and there is no compensation made at all for the electricity payment.

EXAMPLE 5: Rental payment as per survey included other services that were not included in RGI calculation.

SHORT FORM ✓ LONG FORM ❑

Income

Survey:

Single amount (last month) = 1,200

Single amount (1992 - divided by 12 months) = 14,100 / 12 = 1,175

Administrative:

Total monthly income = 1,200

Eligibility for Deductions for Benefit Calculations:

Family Allowance Yes ❑ No ✓

If yes: Monthly amount =

Earned Income Deduction Yes ❑ No ✓

If yes: Monthly amount =

Shelter Cost

Survey:

Last month's rent = 359

Extra payments: water =
electricity =
gas =
oil =
parking =
cable = 9
other =

Total (eligibility) = 359
Total (benefit) = 359

Administrative:

Rent = 350

Surcharges: electricity =
water heating =
cable = 9
laundry =
other =

Allowances: space heating =
water heating =
other =

Monthly payment = 350 + 9 = 359

Ratios

Eligibility

S-E-O-A = 359 / 1,175 = .31
S-E-O-L = 359 / 1,200 = .30

Benefit

S-N-O-A = 359 / 1,175 = .31
S-N-O-AI= 359 / 1,175 = .31
S-N-O-L = 359 / 1,200 = .30

Narrative

This tenant indicated a monthly rent of $359 plus an additional payment of $9 for cable which would imply a monthly payment of $368. With the rent figure at $359, an affordability problem was found for each ratio. During the review of the administrative data, however, it was found that the rent was actually $350; the monthly payment was $359 as it included the payment for cable. Thus, the tenant had included an amount for cable (not an allowable shelter cost) when reporting rent. When the $9 for cable was removed from the rent, the ratios were as follows: SEOA = .30 (.298); SEOL = .30 (.292); SNOA = .30 (.298); SNOAI = .30 (.298); SNOL = .30 (.292). Some affordability problems remain because the provincial housing authority uses a ratio of .30 to determine rent-geared-to-income.

EXAMPLE 6: Rent based on current income which is different than 1992 income used in calculation.

SHORT FORM ✓ LONG FORM ❑

Income

Survey:

Single amount (last month) = 1,600

Single amount (1992 - divided by 12 months) = 16,000 / 12 = 1,333

Administrative:

Total monthly income = 1,600

Eligibility for Deductions for Benefit Calculations:

Family Allowance Yes ❑ No ✓

If yes: Monthly amount =

Earned Income Deduction Yes ❑ No ✓

If yes: Monthly amount =

Shelter Cost

Survey:

Last month's rent = 398

Extra payments:
water = 2
electricity = 2
gas = 2
oil = 2
parking = 30
cable = 21
other =

Total (eligibility) = 398 + 2 + 2 + 2 + 2 = 406
Total (benefit) = 398 + 2 + 2 + 2 = 404

Administrative:

Rent = 398

Surcharges: electricity =
water heating =
cable =
laundry =
other = 8 (utilities)
30 (parking)

Allowances: space heating =
water heating =
other =

Monthly payment = 398 + 8 + 30 = 436

Ratios

Eligibility

S-E-O-A = 406 / 1,333 = .30
S-E-O-L = 406 / 1,600 = .25

Benefit

S-N-O-A = 404 / 1,333 = .30
S-N-O-AI= 404 / 1,333 = .30
S-N-O-L = 404 / 1,600 = .25

Narrative

The ratios using income based on the 1992 total all demonstrate an affordability problem whereas those using the figure for last month's income do not. As this tenant's income has increased from 1992 to the present, the rent would have done so as well. Ratios which apply an old income figure to a current rent figure then result in the finding of an affordability problem.

APPENDIX F

SOCIAL ASSISTANCE AND AFFORDABILITY

Social Assistance and Affordability

Before the specific cases of tenants in receipt of social assistance who demonstrated shelter cost-to-income ratios greater than or equal to .30 are presented, it is helpful to review how the minimum rent is calculated and by whom. It is also important to note that in the present research, the incidence of affordability problems due to minimum rent being charged is quite small. This should not be surprising since the scales of minimum rents that have been set up (in provinces such as Ontario) are based on 25% of the normal social assistance allowance. In other provinces without these scales (such as Quebec), the rent is calculated by taking 25% of the gross monthly income. Problems occur when the calculations get more complicated.

An example of this would be British Columbia. B.C. Housing supplies a minimum rent contribution table to the project for use with social assistance recipients. This table lists the shelter allotment that is allowed for someone receiving social assistance. When calculating the rent, the project takes 30% of the gross monthly income (even if all of it is from social assistance). The project compares this amount to the minimum rent contribution table and if the calculated rent (at 30% of gross monthly income) is greater than the amount listed on the table, the higher rent is charged. The tenant can then go to his or her social worker in order to have the shelter allowance increased to cover the new rent. This increased income shows up later on the surveys and, in this study, was sometimes interpreted as an income discrepancy between the survey and the administrative data. Despite this approach, there are very few resultant affordability problems since the current increased income means the shelter cost-to-income ratios are then at .30 or lower.

Another place where the calculation can be complicated is Newfoundland. The shelter allowance amount as determined by the Department of Social Services (DOSS) is charged by the project. DOSS pays this shelter allowance/rent directly to the tenant (similar to British Columbia). However, from our research, it would appear that there are occasions where the shelter allowance reported

by the tenant (that is, the amount they receive from DOSS) does not cover the rent charged by the project. This discrepancy would result in severe affordability problems.

What follows is a presentation of all the cases where the tenant's income was based all or in part on social assistance and the shelter cost-to-income ratio was greater than or equal to .30. The description will begin with the original findings (Phase I), a description of the individual analysis conducted to determine the source of the affordability problem (Phase II), and a conclusion indicating the influence of social assistance on the initial finding of an affordability problem. All of the instances of social assistance recipients who completed the long form of the questionnaire will be presented. However, only those social assistance recipients who completed the short form of the questionnaire who had ratios greater than or equal to .30 as well as having a first round explanation attributed to a minimum rent being charged will be discussed.

Long Forms

Out of the 23 long forms of the questionnaire that were used in the research, 11 were from tenants receiving social assistance. From these 11, it was discovered that four had ratios over or equal to .30. This having been said, it is important to note that none of these cases with ratios greater than or equal to .30 had affordability problems that were due to minimum rents being charged for social assistance recipients.

Social Assistance Recipients with ratios greater than or equal to .30.

Tenant 1

Phase I: It was thought that the affordability problem was due solely to a current rent being compared to an out-of-date income figure. Since the tenant reported such a low 1992 annual income it was assumed that their rent was based on a higher current income. (Last month's income was reported to be much higher than 1992 monthly income calculated by taking the single 1992 figure and dividing by twelve.)

Phase II: After calling the tenant, it was discovered that instead of their 1992 annual income (as listed on their income tax return), they had actually written the amount of their income tax **refund**. The high ratio was therefore attributed to respondent error.

Conclusion: Once the 1992 income had been recoded, this tenant's ratios were no longer greater than or equal to .30. Social Assistance had no effect on the ratios because the ratio discrepancy was never due to a minimum rent being charged. To reinforce this point, if one used the total income from earnings and social assistance (which was quite close to the amount reported on the survey) and took 25%, that amount would be more than the minimum rent being charged by the project. It is therefore evident that it is not the fault of the minimum rent that the ratios were high.

Tenant 2

Phase I: This tenant's ratios were quite high in the LEMAT, LEYAT, LNMAT, and LNYAT categories. It was believed that the affordability problem was due to some error related to the annual matrix table.

Phase II: It was determined that the affordability problem finding was due to the fact that the tenant entered their current monthly income when completing the matrix for their 1992 annual income. When this monthly amount was divided by twelve, the "new" monthly amount was artificially low, causing the ratios to be very high. When this was corrected in Phase II, there were no longer any ratios over or equal to .30.

Conclusion: Social Assistance did not affect this tenant's ratios. In fact, the administration did not use the minimum rent established by Social Services, but rather, 25% of their gross income.

Tenant 3

Phase I: As in the previous example, the LEMAT, LEYAT, LNMAT and LNYAT ratios were very high.

Phase II: Again, the tenant had used their current monthly income to complete the matrix for their 1992 annual income. Once this was corrected, there were no longer any ratios greater than or equal to .30.

Conclusion: Social Assistance had no effect on the ratios: the administration didn't even use the minimum rent but rather took the annual total of pensions and social assistance and took 25% of the total monthly amount.

Tenant 4

Phase I: As in a couple of previous examples, this is a case where the LEMAT, LEYAT, LNMAT, and LNYAT variables were all above .30 indicating a problem with the 1992 annual matrix.

Phase II: As before, the discrepancy was due to respondent error since the tenant entered their current monthly income in the 1992 annual matrix. Once again, this case disappears when the error is fixed.

Conclusion: As in other cases, social assistance was not the problem causing elevated ratios. Furthermore, when 25% of their gross monthly income (as per the administration data) is calculated, it is more than the scale amount of the rent. This would indicate that the scale rent is a fair rent and did not contribute to the affordability problems.

Tenant 5

Phase I: This is a case where the LEMA ratio was equal to .30. Without the administration data, it was impossible to tell what the problem was.

Phase II: After considering the information supplied by the project, it was clear that the utility payments made by the tenant have been higher than the cost allowances determined by the project. This is an affordability problem since the utility allowances made by the project do not cover what the tenant actually pays.

Conclusion: The ratio that was equal to .30 was due to an affordability problem with respect to utility payments. The social assistance rent taken from the scale is actually lower than 25% of their gross monthly income (the amount quoted on the administration data was very close to the amount reported on the survey).

Social Assistance Recipients without ratios greater than or equal to .30.

Tenant 6

Conclusion: This is a case in British Columbia, therefore, 30% of the gross monthly income was used to calculate the rent. As mentioned in the introduction, the tenant can go to their worker to have their shelter allowance adjusted. Predictably, the survey results showed a higher income than the administration data since the income was increased to reflect the higher rent. Due to the increased income, no ratios were over or equal to .30.

Tenant 7

Conclusion: Because the minimum rent on the contribution table (supplied by B.C. Housing) is more than 30% of the gross monthly income, the project had

to use the minimum rent. As a result of this, we must examine this case further to see why the ratios were not above or equal to .30.

- First, and most significantly, there is a large discrepancy in income between the administration data and the survey amount for last month's income (a difference of $420.00). Because the income on the administration data was actually for June, 1992, we can attribute the difference to an income increase as a result of the higher rent (that is, the tenant had their shelter allowance increased). Due to this increase, the ratio for any variables dependent on the last month's income will be less than .30 (25% of income reported last month by the tenant is greater than the scale rent on the administration data).

- Second, according to the tenant, their 1992 monthly income was the same as their present income. This is clearly different from the information on the administration data (where the income for June, 1992 is much lower). Due to the higher 1992 monthly income, none of the ratios for variables dependent on last year's income will be over or equal to .30.

Tenant 8

Conclusion: This is a typical case of what the process is in British Columbia. The project took 30% of the social assistance amount to calculate the rent. The income reported by the tenant on the survey is higher than the income on the administration data. This is consistent with what was explained earlier: after receiving the increase, the tenant went to their worker and had the shelter allowance portion of their assistance adjusted. Because of the higher income entered on the survey, no ratios were over or equal to .30 (because the rent was calculated using 30% of a lower income).

Tenant 9

Conclusion: For this case, no minimum rent scale from Social Assistance was used because this tenant lives in Quebec. Instead, the project took the average 1992 monthly income and calculated the rent at 25%. On the survey, the tenant reported a slightly higher income for both last month as well as for 1992. As the incomes used to calculate the ratios (that is, those incomes reported on the survey) were higher than the income used to calculate the rent (that is, the income on the administration data), no ratios were greater or equal to .30.

Tenant 10

Conclusion: For this case, a Social Assistance Scale was used to determine the rent. There are several reasons why there weren't any ratios greater than or equal to .30. First, money was taken off the rent determined by the scale to serve as a utility adjustment. Second, 25% of the gross monthly income (from the administration data) is higher than the scale rent. Third, the tenant reported a higher income on the survey than the project had recorded (this would make the second point even more significant; that is, the ratios will be even lower because the incomes have increased relative to the rent).

Tenant 11

Phase I: After a preliminary examination of the survey, the elevated ratios were believed to be caused by several things. First, an electricity surcharge was believed to be included in the rent. Second, (and as found elsewhere) the tenant used the monthly amounts to complete the 1992 annual matrix. Third, the single monthly amount included family allowance payments whereas the monthly matrix amount did not.

Phase II: Once the administration data were consulted, it was noticed that there was a very large rental discrepancy (in the amount of $100.00). It was decided that the high ratios were more likely to have been caused by the rental discrepancy than the other explanations. In order to confirm the rent, the tenant was scheduled to be called; however, because the number was unlisted, the discrepancies were left removed from the analysis as they were unverifiable.

Conclusion: If the tenant actually entered a faulty rent, then the high ratios are clearly not the fault of the minimum rent that was charged by the project. Even if there were any questions regarding the fairness of the minimum rent, it could be shown that the minimum rent that was being charged was actually lower than 25% of the combined incomes (unemployment insurance and social assistance) as reported on the administration data (the amounts were quite close to those reported on the survey).

After this analysis of the long forms, it is evident that none of the social assistance rents caused affordability problems, even in British Columbia, where 30% of income is used to calculate rent. A large part of this is due to Social Services who adjusts tenants' income when they have an unaffordable rent.

Short Forms

The short forms that were chosen for this part of the discussion were only those that had affordability problems due to minimum rents being charged. There were six such cases and all of them were instances of social assistance. All other affordability problems found for recipients of social assistance were due to other reasons which were the same as for tenants not on social assistance. Those tenants receiving social assistance with affordability problems caused by minimum are presented as follows:

Tenant 1

Phase I: All of the variables had ratios greater than or equal to .30. Without looking at the administration data, it was only clear that some of the high ratios were due to electricity payments that the tenant had to make to the utility company. The high ratios were also believed to have been caused by a minimum rent.

Phase II: Once the administration data were consulted, it was confirmed that the payments were made to a utility company and not factored into the rent-geared-to-income calculation (but included in the survey calculations). The administration data also confirmed suspicions that the tenant was being charged a minimum rent. There are a couple of noteworthy points:

- First, it is important to realize that this is a case in British Columbia. This means that projects usually charge rents which are 30% of the social assistance amount. If the shelter allowance portion of social assistance is greater than the 30%, the project rent is set equal to the shelter allowance. For this reason, the rent-to-income ratio is higher than 30 %.

- Second, it should be pointed out that the ratios would have been even higher had the tenant not received an increase in income from their worker (the survey income was higher than the income on the administration sheet).

Conclusion: It is therefore evident that the minimum rent in this case is the main cause of the affordability problem. (The payment to the utility company is only significant for two of the five ratios whereas that the minimum rent contributed to raising all five of the ratios.)

Tenant 2

Phase I: The ratios were all extremely high. It was quite evident that it was because a minimum rent was being charged that was actually 97% of their income (as reported on the survey). It was also suspected that the tenant did not enter their income properly.

Phase II: After the tenant was called regarding their income, the income amounts were adjusted and the rent that was being charged was found to actually be 50% of the income reported on the survey (the amount reported on the administration data was, in fact, lower than the survey amount).

Conclusion: Even after recoding the income, the ratios were all still very high. It was concluded that the reason for the high ratios was due to the fact that this tenant was charged a minimum rent which was a lot more than 30% of their gross monthly income. The reason for this is unknown.

Tenant 3

Phase I: This tenant is from Newfoundland and the minimum rent (or shelter allowance) was determined by the Department of Social Services (DOSS). It was immediately evident that the high minimum rent (compared to the income reported by the tenant) was the reason for the high ratios.

Conclusion: It is evident that the ratios are greater than or equal to .30; however, what is not as clear is whether DOSS is paying the shelter amount (equal to the rent) to the tenant or not. The tenant reports an increase in income compared to their 1992 annual as well as compared to the administration data (recorded in March, 1993). This could be the tenant(s)'s shelter allowance supplied by DOSS. If it is, then it could concluded that DOSS is not paying this tenant enough because the ratios are still over .30 even after supplementing their income.

Tenant 4

Phase I: The problems were originally thought to be caused by the tenant including electricity and laundry in the survey amount of the rent as well as a minimum rent being charged.

Phase II: After correcting for the electricity and laundry surcharges, shelter costs without electricity went down below .30. This indicated that the fact that this tenant was being charged the minimum rent was no longer significant (in fact, the minimum rent was only $2.00 more than 25% of their gross income). The high ratios for the variables which included electricity were attributed to the tenant having to pay electricity while the project does not take it into consideration.

Conclusion: In this instance, the minimum rent for social assistance was very close to being 25% of their gross income (as reported on the administration data). The minimum rent was not the cause of the affordability problems because once the other factors (electricity and laundry) were accounted for, the ratios went below .30.

Tenant 5

Phase I: Initially, the ratios were extremely high. Before considering the administration data, it was suspected that not only was a minimum rent charged, but that the tenant did not report their income correctly.

Phase II: When the administration data were introduced, suspicions regarding the minimum rent were confirmed. In order to clarify the questionable income, the tenant was called. It was discovered that they had not included their shelter allowance in their last month's income statement on the survey. Even after the error in income was fixed, the rent was more than 50% of their total monthly income (as reported on the survey — the revised income amount).

Conclusion: This is a case in Newfoundland where the rent (that is, shelter allowance) is determined by the Department of Social Services. Given that the rent-to-income ratio is very high (even after adding the shelter allowance that was initially omitted), indicating an affordability problem, it appears that the household did not qualify for social assistance benefits that would keep shelter costs below 30%.

Tenant 6

Phase I: It was originally believed that the ratios were above or equal to .30 because: 1) a minimum rent was being charged; and 2) the electricity and laundry surcharges were included in the survey rent.

Phase II: Once the electricity and laundry payments were factored out of the rent, the ratios for the variables without electricity were all below .30. One can conclude by this that the minimum rent is not a significant factor. (In fact, it was found that the minimum rent is less than 25% of the gross monthly income as recorded on the administration data.) The other ratios which stayed greater than or equal to .30 were caused by the electricity surcharge payments.

Conclusion: With respect to affordability and social assistance, in this case, the shelter allowance is less than 30% of the gross monthly income and therefore not an affordability problem.

In considering to the cases of tenants who were charged minimum rents (who completed the short form of the questionnaire) and who experienced affordability problems, even after Phase II, four of the six cases still had affordability problems believed to be due to minimum rents. Better coordination between housing and social service policies would be desirable.