

# RESEARCH REPORT



## Cost-Effective Housing: A Comparison of Non-Profit and Market Housing



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# ***COST-EFFECTIVE HOUSING: A COMPARISON OF NON-PROFIT AND MARKET HOUSING***

## ***PHASE II FINAL REPORT***

May 22, 1997

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## ***PURPOSE***

The purpose of the study was to assess the costs and effectiveness of two different approaches to housing programs, non-profit supply and shelter allowances, in addressing the problems of affordability. In Phase I, the study was to determine the feasibility of using rent supplement program data as a proxy for shelter allowances and to investigate the feasibility of locating and retrieving historical cost data of non-profit supply programs and rent supplement programs for use in analysis. In Phase II, the study was to perform the analysis to determine how traditional non-profit and shelter allowance programs, offering similar benefits and similar quality of housing, performed over time and under different market conditions.

## ***ACKNOWLEDGEMENTS***

The research process for this study was a complex undertaking that could not have been completed without the co-operation of a number of individuals.

Sharon Chisholm, Executive Director of the Canadian Housing and Renewal Association provided much needed support and patience.

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A list of those who made comments on the various drafts of the two phases of the study is in Appendix E.

## ***EXECUTIVE SUMMARY***

There has been a long-standing debate about the most efficient and effective way for governments to house families in need. As a contribution to the debate this paper compares the cost to government housing agencies using two different vehicles (non-profit and market housing).

Previous studies of the issue have tended to rely on a variety of assumptions as a basis for long term projections. Since these studies rely on assumptions as opposed to actual data they have been subject to criticism. One concern is about which assumptions are most sensible. Another has to do with the reliability of making financial projections for 35 or 50 years.

This study takes a different approach by describing what happened to the costs for actual housing projects over a historical period.

The study reports on a comparison between non-profit housing rental charges and market rents for comparable buildings that contained units subsidized as part of the Rent Supplement Program. The study period is 1977 to 1996 (for which actual data was collected). The study compares adjusted break even rents in non-profit projects (i.e., removes all subsidies) to market rents in comparable buildings. The report details how the comparison projects were found, the data sources and definitions used and presents the results of the comparisons. These "paired comparisons" are presented in a series of case studies.

The study developed a sound empirical basis to examine the relative long term cost of non-profit projects and shelter allowances on private rental units. Data was obtained for ten pairs of comparable private rental and non-profit projects in Vancouver and Ottawa. Break-even, before subsidy per unit costs on the non-profit projects were compared with the actual market rents of comparable buildings. Subsidy costs were calculated for a 30 per cent rent geared to income (RGI) household with an income at the boundary of the first quintile.

In all ten comparisons the non-profit break-even rents started out higher than private rents but then rose more slowly than market rents. In nine of the ten cases the non-profit rents crossed below market between the fourth and eighteenth year of operation. Assessing the resulting subsidy costs for comparable households (based on the use of a consistent 30 per cent RGI scale), the study found that, over the past two decades the non-profit vehicle has been the most effective vehicle in nine of the ten cases.

## **RESUMÉ**

Depuis de nombreuses années, on s'interroge sur la façon la plus efficace qui permettrait aux gouvernements de loger les familles démunies. Pour contribuer à ce débat, le présent document compare les coûts que doivent supporter les organismes de logement gouvernementaux relativement à deux catégories d'habitations (logements sans but lucratif et habitations du marché).

Les études antérieures menées sur le sujet avaient tendance à utiliser des prévisions à long terme fondées sur diverses hypothèses. Les résultats de ces études ont souvent été remis en cause, car ils reposaient sur des faits hypothétiques plutôt que sur des données réelles. L'une des préoccupations était de déterminer quelles hypothèses étaient les plus réalistes. On s'est interrogé en outre sur la fiabilité des projections financières qui portent sur des périodes de 35 à 50 ans.

La présente étude adopte une approche différente en décrivant l'évolution des coûts associés à des ensembles réels sur une période donnée

L'étude présente les résultats d'une comparaison entre les loyers pratiqués dans des ensembles locatifs sans but lucratif et ceux d'immeubles privés comparables qui comprennent des logements subventionnés dans le cadre du Programme de supplément au loyer. L'étude porte sur la période de 1977 à 1996 (pendant laquelle des données réelles ont été recueillies). On y compare les loyers d'équilibre redressés (c.-à-d. avant subvention) dans les ensembles sans but lucratif avec les loyers du marché dans des immeubles comparables. Le rapport fournit des détails sur les critères de sélection des immeubles choisis pour la comparaison ainsi que sur les sources de données et les définitions utilisées, et présente les résultats de l'examen. Ces «comparaisons par paires» sont présentées dans une série d'études de cas.

Pour réaliser cette étude, on a élaboré une solide base empirique afin d'examiner l'évolution des coûts à long terme dans les ensembles sans but lucratif et des allocations-logements accordées dans les immeubles locatifs privés. On a obtenu des données sur dix paires comparables d'ensembles locatifs privés et d'immeubles sans but lucratif, situés à Vancouver et à Ottawa. On a ensuite comparé les loyers d'équilibre (avant subvention) par logement dans des ensembles sans but lucratif aux loyers réels du marché dans des immeubles privés semblables. Puis, on a calculé le coût des subventions accordées aux ménages qui paient un loyer proportionné au revenu de 30 % et dont le revenu se situe à la limite du premier quintile.

Au début, dans les dix cas étudiés, les loyers d'équilibre dans les immeubles sans but lucratif étaient supérieurs à ceux des ensembles privés mais, par la suite, ils ont progressé plus lentement que les loyers du marché. Dans neuf des cas étudiés, les loyers des ensembles sans but lucratif ont baissé en deçà des loyers du marché, entre la quatrième et la dix-huitième année d'exploitation. Les résultats de l'étude ont démontré que les ensembles sans but lucratif constituaient le mode de logement le plus efficace dans neuf cas sur dix, au cours des vingt dernières années, compte tenu du coût des subventions accordées à des ménages comparables (fondées sur une échelle des loyers proportionnée aux revenus de 30 %).





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**CHAPTER****1**

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**EXECUTIVE SUMMARY**

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Previous studies of the issue have tended to rely on a variety of assumptions as a basis for long term projections. Since these studies rely on assumptions as opposed to actual data they have been subject to criticism. One concern is about which assumptions are most sensible. Another has to do with the reliability of making financial projections for 35 or 50 years.

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how the comparison projects were found, the data sources and definitions used and presents the results of the comparisons. These "paired comparisons" are presented in a series of case studies.

The study developed a sound empirical basis to examine the relative long term cost of non-profit projects and shelter allowances on private rental units. Data was obtained for ten pairs of comparable private rental non-profit projects in Vancouver and Ottawa. Break-even, before subsidy per unit costs on the non-profit projects were compared with the actual market rents of comparable buildings. Subsidy costs were calculated for a 30 per cent rent geared to income (RGI) household with an income at the boundary of the first quintile.

In all ten comparisons the non-profit break-even rents started out higher than private rents but then rose more slowly than market rents. In nine of the ten cases the non-profit rents crossed below market between the fourth and eighteenth year of operation. Assessing the resulting subsidy costs for comparable households (based on the use of a consistent 30 per cent RGI scale), the study found that, over the past two decades the non-profit vehicle has been the most effective vehicle in nine of the ten cases.

## CHAPTER

## 2

## BACKGROUND AND THEORY

## 2.1 Theory

There is an extensive literature on various issues surrounding cost effective program choice.<sup>1</sup> Much of the literature is characterized by the use of economic models of expected market behaviour or snapshot comparisons of costs at one point in time

In an ideal world governments would conduct experiments to gather evidence about program efficacy. Although this has been done for some housing programs in the United States, it is the exception rather than the rule, and there is considerable difficulty in extrapolating the results to Canada.

In the absence of deliberate experimental design carried out by governments it is sometimes possible to uncover a "natural experiment" that took place as a result of program activity. While these "natural experiments" might not meet all the

1. An intelligent and thoughtful discussion can be found in Fallis, G. On Choosing Social Policy Instruments: The Case of Non-Profit Housing, Housing Allowances or Income Assistance, *Progress in Planning*, Volume 40, Part 1, 1993, pp. 1-88

criteria for classical randomized experimental design they often come very close to the desired ideal.

Historically, the debate about the effectiveness of using different delivery vehicles (e.g., non-profits or the market) has been difficult to resolve because of a multiplicity of program goals (about which there is disagreement - some goals being implicit and some added as the program evolves) and an absence of actual data that might be of use in assessing those program goals where there is some agreement about the purpose of the program.

For example, housing programs often have several explicit goals (e.g., to increase the supply of affordable housing and to address the housing problems of low income households). Unstated goals might include the decision to deliver the assistance to low-income households in a certain way (e.g., unit tied subsidies) because society wants the money allocated to housing to be spent on housing. This decision on how the money is spent might be taken in the full knowledge that the household might prefer to spend the money differently.<sup>2</sup> Finally, a government may decide to provide subsidies tied to a unit as a mechanism to control expenditures. Thus the government will provide a certain amount of money to subsidize a certain number of existing and new units because it does not think it can raise the money to fund a universal program, or is uncertain about the impact of a universal program (e.g., on participation in the labour force).

In addition to the confounding effects of other program goals cost effectiveness comparisons must deal with a host of other factors. A cursory review of three studies illustrates this.

2. Much of the literature on social justice assumes the government is trying to increase the utility level of the recipient (which is why most of the literature concludes that it is more efficient for government to give the household a lump sum cash payment). A good summary of the argument and problems with it can be found in Fallis (1993) op. cit., pages 80-81.

A theoretical study comparing program costs was carried out for CMHC by researchers at the University of Toronto.<sup>3</sup> In that study rents are set in a competitive model. The price of a new or existing property is determined by the discounted value of rental income (net of operating costs and taxes) plus future capital gains on the property. The study then compares the life time cost of delivering a rent geared to income (RGI) unit via a non-profit program with the life time cost of delivering the same unit through a rent supplement program.

The main findings from this approach were as follows. The cost-effective program choice depended on local market conditions. Non-profit projects were more effective in nominal terms under the market conditions prevailing at the time of the study. When present discounted value accounting methods are used the cost differential tends to favour the rent supplement program as the cost-effective choice.

A 1993 study<sup>4</sup> compared the cost of housing a household in a non-profit unit to the costs of housing a household in their existing home using a shelter allowance. This study found that non-profit was more expensive in nominal terms for the entire 35 year period of the mortgage. After the mortgage was repaid non-profits became less costly on a yearly basis. However, this advantage (after year 35) and the residual value of the non-profit properties was not great enough to change the conclusion about the relative cost effectiveness of the two approaches over the entire period.

An unpublished 1994 study carried out within CMHC<sup>5</sup> compared the cost of assisting households in social housing and comparable market units in four market

3 Hosios, A., Jump, G., Fallis, G. and Pesando, J. (1990) *Cost-Effective Program Choice: Non-Profit Housing and Rent Supplement Programs* (mimeo), Report submitted to Canada Mortgage and Housing Corporation.

4 Clayton Research Associates Ltd. (1993) *Comparison of the Long-Term Cost of Shelter Allowances and Non-Profit Housing*, a study carried out for the Fair Rental Policy Organization of Ontario.

5 Majdell, D (1994) *Social Housing Cost Comparison* (Draft Report), Canada Mortgage and Housing Corporation, mimeo.



areas (Halifax, Montreal, Toronto and Winnipeg). The study used actual costs and then calculated total costs in nominal and real dollars. The study found that market rents were lower in Winnipeg and Montreal while social housing costs were lower in Halifax and Toronto.

These three studies (1990, 1993 and 1994) approach the question of effectiveness differently. The 1990 University of Toronto study (Hosio et. al.) uses a model of a competitive market and examines cost effectiveness under different conditions (e.g., interest rates, vacancy rates and so on). The 1993 study by Clayton Associates compares different qualities of housing units and does not examine the different program goals of government or the impact on the households involved. Madjell's 1994 study uses actual numbers for the time period of the comparison but the units are not always in the same market area nor are the numbers the actual costs of running a specific property, nor are the projects strictly comparable and so market rents are discounted by as much as 20 per cent to approximate the quality of social housing units.

This study addresses the same fundamental issue of cost-effectiveness but it does so by looking at actual cost data for units of comparable quality in the same market area, over the same time period. In other words it overcomes to some extent the limitations of the studies discussed in the previous paragraphs.

From this consideration of the theoretical discussions in the literature it is worthwhile to isolate the exact factors that this study addresses. The most important point is to underline the fact that the study compares similar units in the same market area during the same time period and similar assistance - i.e., the subsidy required to assist a household is for similar levels of adequacy, suitability and quality of unit (i.e., the study compares oranges with oranges). This point cannot be overemphasized since so much of the policy debate does not compare oranges and oranges. What the study does

do is compare adjusted break even non-profit rents with the market rent for comparable units (e.g., with respect to market area, unit size, building type and time of construction).<sup>6</sup>

There are a number of things the study does not do. First, the study does not compare administrative costs of different program designs (this is a complex undertaking since program costs involve different levels of government and many of those involved work on a number of tasks and different programs and do not separate their time among programs). Second, the study does not apportion costs between and among different program goals. For example, we do not apportion some part of the costs of the non-profit program to the costs of encouraging new construction (i.e., the supply side elements of the program).

The main limitation of the study has to do with its limited coverage of different market areas. If the resources were available one would expand the study to other market areas.

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## 2.2 Hypotheses Tested in This Study

There are four specific questions that are tested in this study. A null hypothesis is presented after each question.

- I. Are non-profit adjusted breakeven rents higher than market rents for comparable units (and by extension higher than the average of all market rents for comparable units) at the time of initial

6. Fallis (op. cit.) p.48 stresses the importance of just such a comparison although he suggests it is "not likely to be possible." He suggests the need to use hedonic pricing in the absence of "units in the private market which were identical in every respect, to the non-profit units." The approach used in this study uncovered comparable projects (and units) and thus comes as close to producing what one would ideally like to have as is possible short of an experimental design which saw one contractor build two identical projects (e.g., two buildings in one complex) one of which was managed by an entrepreneur and the other by a non-profit.

occupancy?<sup>7</sup> In technical terms the null hypothesis is that there is no difference between market and non-profit rents for comparable buildings in the same market area at the time of construction.

- II. Do non-profit rents fall relative to market rents? The null hypothesis would be that there is no change in the relative position of non-profit and market rents.
- III. Does a crossover occur (i.e., is it the case that non-profit rental charges adjusted to remove any subsidy become lower than market rents on comparable units)?<sup>8</sup> In technical terms the null hypothesis would be that non-profit rents do not fall below market rents in comparable projects.
- IV. For the cases studied, is the non-profit vehicle more cost-effective than a market vehicle over the study period (1977-1996)? Again the null hypothesis<sup>9</sup> would be that there is no difference in the cost-effectiveness of the two vehicles. Cost-effectiveness occurs when one vehicle is able to deliver a unit of comparable (or higher) quality at a lower cost.

- 7. Two reasons are often given for this statement. First, non-profits are financed at 100 per cent of cost (there is often no equity) and second, non-profit societies are not as effective as entrepreneurs and do not get the best price. A more likely explanation is the fact that market rents reflect a universe of mostly older rental units, the rents for which are lower than break even rents for new construction and as a consequence private developers are able to carry a negative cash flow while non-profits have to meet their costs.
- 8. Two studies (an internal CMHC review of Hosio et. al. 1990 and Clayton 1993) suggest that a crossover might occur under certain conditions around year 25 (CMHC's review of Hosio et. al.) and after year 36 (Clayton). The 1994 Madjell study simply shows that for certain markets under certain assumptions total costs are less in Halifax and Toronto and more in Winnipeg and Montreal. The Madjell study does not present individual years and so it is not possible without further work to determine when the crossover year does occur. From comments in the Madjell paper it seems that social housing costs (described as economic rents) can start out lower than market rents and remain lower than market rents for the full period covered. A fourth study using a set of pro forma costs and assumptions about cost increases suggests that the crossover would occur after year 21. Société d'habitation du Québec. La SHQ, Propriétaire et Locataire de logements: considérations économiques et sociales. Quebec, Société d'habitation du Québec, 1990.
- 9. We have used null hypothesis since this accords with traditional hypothesis testing in the social sciences where one has a sample from a larger population. If the theoretical literature on housing markets was more fully developed one could state the theoretical considerations and then show the extent to which the empirical results, do, or do not, support the theory. This approach while desirable is not feasible at this time.

Finally, the study addresses some related questions: to what extent can the study results be generalized, what factors impact the cross over and how does the study contribute to the policy debate?

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## **2.3 Procedure and Method**

This study was carried out in two stages. The first stage clarified the study problem and, more importantly, determined that the necessary information to address the study issues could be collected. The relevant text from the first phase of the work is presented as Appendix A.

The feasibility report noted a number of complicating factors in making a comparison between two programs. Central among these are market variations and program design differences. (Each program provides a different bundle of housing and support services and each comes at a different cost.) This study overcomes these complications by focusing on the vehicles (not the vagaries of program design) through which the assistance is delivered: a non-profit vehicle and a private market vehicle. The initial subsidies which were part of the NP program were removed so that a standardized subsidy (needed to help low income households) can be applied equally to the two different vehicles.

The amount of the subsidy required from a government housing agency will be :

1. in the non-profit case the difference between the break-even operating cost and the rent paid by the household (i.e., the rent geared to income payment);
2. and in the market rental the difference between the market rent and the rent paid by the household (i.e., the rent geared to income payment).

A cautious note about the definition of terms needs to be made at this point. The study compares actual market rents with break-even rents for comparable non-profit projects. There is no confusion about the term "market rents" since they are the rents charged in the open market. Non-profits have a rental charge which has been given different names by different groups. Officials in government agencies have used a number of different terms: economic rent, full recovery rent and break even rent. We avoid use of the term "economic rent" since it has a long use in the economic literature.<sup>10</sup> "Full recovery rent" is used by officials in housing agencies to describe the rental charge required to operate a non-profit project at break-even (i.e., on average there is no operating surplus or operating deficit) after initial subsidies have been given to the project. To minimize confusion we use the term "adjusted break even rent" to describe the rent charge which would be made if the project did not have any subsidies at the time of construction or during its operation after construction.

The central question to be answered by this study is whether one vehicle (market units or non-profit units) is more cost effective over time.<sup>11</sup> The study answers this question by identifying matched pairs of comparable properties and comparing cost differences (using actual data) over time. Cost information from financial statements was adjusted, in the case of non-profits, for unit size.

Since the objective of the study is to identify the relative effectiveness of the two alternate delivery vehicles- non-profit and market rental properties it is necessary first to eliminate any subsidy from the comparison (i.e., where it would affect the rents to be charged).

10. The term economic rent often occurs in the 19th century debates about the price of grain products (e.g., corn in England).

11. We use the term "vehicle" rather than program since we have removed the specific program features associated with various non-profit programs. For example, we do not consider such issues as "income mix" in the analysis.

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In the case of non-profits used in this study there were several different programs that provided subsidies. Assistance was provided under the National Housing Act (Section 27, formerly Section 15.1) prior to 1979 and after 1978 (Section 95, formerly Section 56.1).

Under the pre-1979 (Section 15.1) program the federal government provided two types of assistance: a ten per cent capital grant and a mortgage interest subsidy to allow the mortgage interest to be written at 8 per cent. In some cases provincial assistance was also provided. For example, in British Columbia the provincial government could provide a capital grant for 33 per cent of eligible capital costs. In some projects this was used to reduce the capital cost of the project, in others a 20 year lease of land was provided (at \$1.00 per year) as equivalent to the 33 per cent contribution to capital costs.

Subsidies on projects developed after 1978 involved no subsidy to the capital cost of the project but did involve an ongoing subsidy. Some post 1978 projects provided some of their own equity and, if an existing project, may have had assistance from the Residential Rehabilitation Assistance Program (RRAP).

On the market side, the basis for comparison is the market rent. Although some of the properties received assistance (e.g., rent supplement and ARP), this did not have an impact on the market rent (i.e., the market set the rent).

There are two complicating factors which need to be addressed before one can compare the non-profit and the market vehicle: residual value and replacement reserves.

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## 2.4 Residual Value

A significant difference between non-profit projects and market housing is the creation of an asset in the non-profit project (at a minimum the land could be sold for some amount of money after the mortgage was paid off). The problem is how to treat this asset in an analysis of program costs.

Seven of our ten cases have 50 year mortgages (i.e., the mortgages would be retired in the period around 2025) as opposed to 35 year mortgages. In the phase one report, we proposed examining the rent charge in year 36 (when the 35 year mortgage was retired) and suggested that the residual value would be captured in reduced rental charges and hence reduced subsidy charges.

Since seven of the ten cases have mortgages which still have 25 years to run it does not seem particularly fruitful to estimate a dollar amount for the land that might (or might not) be sold in 2025 and discount it to 1996 dollars. There are two reasons this does not seem appropriate.

In some cases the land is leased, and in others it was sold on the condition that it be used for low income housing. The building itself would probably be replaced after fifty years. A more important objection has to do with the very notion of using "residual value" in this type of analysis. Residual value is used as part of the analysis of an investment decision. For example, if the sale of an asset will yield significant sums then this is discounted to determine the true "cost of the investment." As an element in an investment decision, residual value is something that needs to be considered. Government decisions to invest in a long term housing support mechanism (involving 35 or 50 year mortgages) would unlikely be altered by the "residual value" of the projects. Most analysts would argue that it is impossible to determine if the residual value can be

realized (e.g., that the land can be sold) or that the government would reap the benefit from the sale of the land.

## 2.5 Replacement Reserves

Major capital repairs are handled differently in the two sectors. Non-profit projects make a regular contribution to a replacement reserve account which grows over time as it earns interest and the annual contribution is made. In general, the private sector does not accumulate such reserves and pays for major capital repairs from a combination of sources which might include other funds, rent increases and/or a refinancing of the project. The study team collected information on replacement reserves for the projects involved in these comparisons. Replacement reserve contributions in each year were excluded from calculation of adjusted break even rent for the study cases to make the comparison between the market and non market project a fair one (i.e., to remove what Hosios et. al. – op. cit. page 23 – would refer to as a market imperfection).

All of the projects examined by the study team have accumulated substantial replacement reserves. These reserves are maintained in a separate account for each project, they increase each year as interest is earned and additional contributions are made or reduced as funds are withdrawn to replace capital items. The reserve amount varies by project.<sup>12</sup> One 60 unit project had a replacement reserve of approximately \$325,000 in 1994 (the last year for which information on the reserve was available).

Replacement reserves pose a similar problem to that of residual value. How should the existence of this asset be treated in this comparison of cost effectiveness?

12. It is difficult to make any meaningful statement about the "average" replacement reserve without knowing the history of the reserve fund for a project and the contributions (if any) made to major repairs. For example, the replacement reserve might be modest in 1994 because \$500,000 was spent on major repairs in 1993. Thus a simple statement about the average value of replacement reserves across a portfolio (while it might be accurate) is virtually meaningless. Replacement reserves range from \$3,000 to \$6,000 per unit for the study cases.



While there are substantial reserves for the projects we studied, the dollar value of the reserves is not readily available as an asset (although it would be if the project ceased to operate) and thus is not attributed in anyway in the cost comparison.

It is worth noting that the inclusion or exclusion of replacement reserves makes no difference to the study conclusions (i.e., including them in the calculation of break even rent does not change the conclusions).

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## **2.6 Eliminating Project Subsidies**

For each non-profit project we adjusted the principal and interest payments to eliminate any subsidies involved. For example, if a project received a 10 per cent capital write down, we determined the 100 per cent cost (in many cases it was given in the file, in other cases we calculated it). To eliminate the subsidy involved in an 8 per cent mortgage we determined the principal and interest payment for the full capital cost at the prevailing market interest rate (e.g., the interest rate in 1977) for the full term of the mortgage (usually 50 years). By adding the unsubsidized P and I (mortgage payments) to actual operating expenses we determined an adjusted break even rent (monthly) for the project. We then compared the adjusted break even rents to market rents in a comparable project.

Consider a project which cost \$1,000,000, received a 10 per cent percent federal contribution to the capital cost (i.e., \$100,000) and has a fifty year mortgage for \$900,000 written at 8 per cent when prevailing market rates were 10.25 per cent. The project has two separate subsidies: a one time capital contribution of \$100,000 and an ongoing monthly subsidy equal to the difference between the subsidized interest (8 per cent) and the market rate of 10.25 per cent. To eliminate the two subsidies we calculated the monthly payment for the actual capital cost of the project (\$1,000,000) at 10.25 per cent and added the monthly mortgage payment to the monthly operating costs to determine an adjusted breakeven rent for the non-profit (i.e., the rent which would have to be

charged if the project had no subsidies). If the project received a gift of land, or a long term lease of land, the cost of the land was added to the capital cost of the project and a new mortgage payment calculated at the prevailing market rate of interest. In this way all subsidies and or gifts (federal, provincial, and charitable donations of land) were removed from the project.

Finally, we subtracted the monthly contribution for the replacement reserve thus creating the non-profit adjusted breakeven rent which is the actual breakeven cost of running the project.<sup>13</sup> Excluding replacement reserves does not have an impact on the results (i.e., the results are not materially different if replacement reserves are included).

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## 2.7 Projections

The projection of historical costs into the near future was called for in the original terms of reference for the study. How the projections should be done is always a matter for discussion. Study results are presented so that the historical period is clearly separated from projections. Thus the projections can be ignored if one wishes to do so.

There are at least three ways to make projections. These include the use of some reasonable estimate of inflation and operating costs, a regression analysis, and refinement of the model developed by in the paper by Hosios et. al.

Appendix B presents the details of the historical record and a projection to the end of twenty-five years. Appendix C presents the results of a regression analysis (i.e., develops a trend line to year 25). Refinement of the model developed by Hosios et. al. goes well beyond the scope of this research and is not attempted within the confines of this study.

13 Non-profit projects are allowed to accumulate an operating surplus. The allowable amount has varied over time increasing from \$100 a unit in the late 1970s to \$500 a unit in the 1990's. We did not make an adjustment for the presence of an operating surplus



## CHAPTER

## 3

## INFORMATION SOURCES

Because the purpose was to compare actual costs over as long a period of time as possible, cases ended up being selected because of the availability of the required information. Although the search for information was time consuming, and therefore costly, the study team was able to find ten cases of "matched pairs" within the budget limitations for the study. Four of the cases are in Ontario (Ottawa) and six are in British Columbia (Richmond, Burnaby, Vancouver). More cases could be studied (i.e., actual numbers collected) if additional time and resources were available. Within the study areas there is no reason to believe that the cases are "atypical" or unusual.

Market rents (for the 20 or so years of interest to this study) are only available for multiple unit residential construction where owners agreed to participate in a "rent supplement" program. In some cases the project had been constructed under either the Assisted Rental Program (ARP) or the Canada Rental Supply Program (CRSP). For these projects we have construction costs, market rents and the size of the ARP assistance. Although these units benefit from rent supplement and in some cases ARP assistance, this should not materially affect the market rent. Indeed, as part of the rent supplement contracting process rents are verified as being similar to non-assisted units and are therefore deemed to be fully representative of market rent.

ARP/CRSP projects were generally relatively modest in their design and amenity levels. For example, a comparison of the actual rents in the Ottawa case studies shows that three of the four projects rents were all very close to or just below average market levels.<sup>14</sup>

	Project Rent	CMHC rent survey average rents (no 1978 data)
Ott1 (1Br 1978)	\$246	1977= \$239; 1979= \$258
Ott 2 3Br T/h (1979)	\$374	\$361 (apt not t/h)
Ott 3 3Br T/H 1984	\$575	\$589 (apt not t/h)
Ott 4 1 Br highrise 1984)	\$535	\$387

Information was collected from files maintained either by CMHC, provincial housing agencies or non-profit societies. In most cases the information was found by looking at archival material (i.e., paper files) although some more recent information was obtained from electronic data bases maintained by provincial housing agencies.

From this material it was possible to determine the year the building was constructed, the cost of the project, the market interest rate and any subsidies involved. Almost all of the information on non-profit projects came from annual financial statements prepared by accounting firms. From time to time these figures (for the British Columbia cases) were involved in a "compliance audit" and found to be accurate and comprehensive. Although it was not the original intention of the study team to carry out a detailed review for these projects, the search for information necessarily included a comprehensive search of the files for most of the cases. This material is a rich source of information that augments the study findings and suggests some insights into a deeper understanding of the study issues. These are discussed in Chapter 6.

14. Comparable market rents for Vancouver for the period 1977-1981 are not available from CMHC.

It is important to emphasize the "objective" nature of the financial evidence used in this study. Although the "paired comparisons" are presented as "cases" the evidence obtained about each paired comparison is completely objective. If other study teams were to examine the same archival material they would obtain the same numbers (e.g., on rent charges and original subsidies) These numbers are not in any way subjective or the result of an interview to gain "impressions" from an expert. This point is important because it has some bearing on the extent to which the study team thinks the lessons learned can be generalized to other regions and other time periods.

There are modest differences in the way the information was collected in Ontario and British Columbia. Phase 1 of this study identified three provinces for which it seemed data could be found for this study.<sup>15</sup> Once a decision was taken to proceed with the actual collection of data, the study team decided to carry out a test of the method and the collection of data in Ottawa. Ottawa was chosen because the agencies with the data (or able to provide access to the data) were in Ottawa (e.g., CMHC national and local offices, the Ottawa Carleton Housing Authority, and the non-profit societies). If the data could be collected successfully Ottawa seemed a good place to begin.

Data was collected for the Ottawa cases after comparable projects were identified. This yielded four matched pairs which are discussed later in this report. The study team looked at the information for a number of matched pairs and settled on the four presented here because they were the most closely matched.

The situation in British Columbia was different. First, all the necessary information is centralized in the offices of the British Columbia Housing Management Commission (BCHMC) and it was possible to search the files of all non-profit and ARP projects constructed in the lower mainland between 1977 and 1980 to determine if the appropriate information could be collected. A complete file review of some thirty projects was carried out. This had three results. First, six matched pairs were identified from

15. Although originally informed that matched pairs could be found in New Brunswick this turned out not to be the case.

among 20 possible non-profit projects. Second, reviewing all the relevant files for the period 1977 to 1980 generated information which casts some light on the dynamics of the rate of growth in non-profit and market rents. Finally, having reviewed the universe of files for one market area it is possible to generate a tentative estimate of the number of possible "matched pairs" that one might find in Canada and thus to address some issues around the extent to which the study results can be generalized.

It was not possible to compensate for the fact that some market rents do not include heat while all non-profit rents do. The absence of this data tends to understate the differences between the non-profit and the market rent (i.e., some of the market rents should be increased over what is shown here). There was simply no way to generate a twenty year record that would be accurate and so we simply note the absence of the information.

These issues will be discussed in some detail after we review the comparison of market and adjusted break even rents in the next chapter and the subsidy costs to government of using a non-profit or rent supplement vehicle (Chapter 5).

Chapter 4 details the comparisons made between the two delivery vehicles.

## CHAPTER

## 4

THE COMPARISON OF MARKET  
AND ADJUSTED BREAK EVEN  
RENTS

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**4.1 The Comparison**

In this section of the report we present the results of the ten paired comparisons, in as clear a format as we have been able to devise. The details of the comparisons are presented in Appendix B, as is the raw data. Below we present a summary of the key elements for each case. Each case is presented in the same way. In this chapter we only address the question of what happens to market and adjusted break even rents for the comparisons. In the next chapter we address the question of subsidies.

Each summary chart describes the units compared (location, size, year of construction and so on). Below the description is a graph which shows two sets of comparisons. On the top half of the graph is the monthly rent for the non-profit and market project. The numbers shown to 1995 are actual numbers and there is a break in the graph for the period after 1995 to show that the period after the break is a projection.

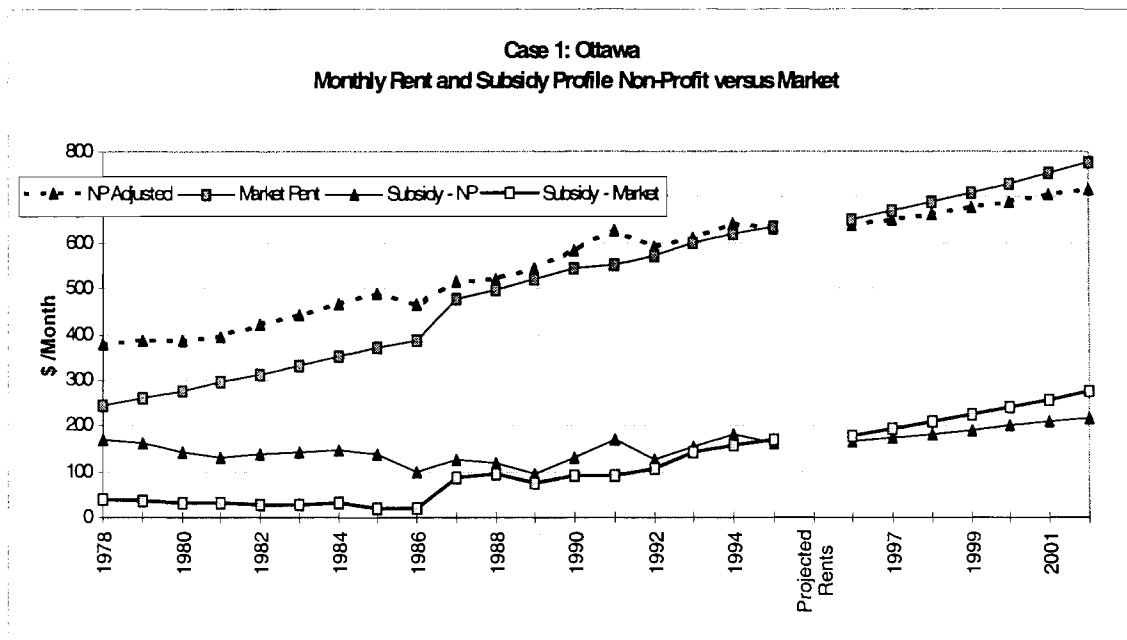
The bottom half of the graph shows the cost of subsidizing a household in the market or non-profit vehicle. The discussion of subsidies occurs in the next chapter.



There are ten comparisons four for Ottawa and six for the lower main land in British Columbia (labeled Vancouver).

### CASE 1: OTTAWA

**Year Occupied:** Both projects occupied in 1977  
**Building Form:** NP is 23 Unit Masonry Highrise; Market is 4 storey woodframe with 32 units  
**Location:** Inner City  
**Units Compared:** One Bedroom  
**Programs Involved:** Non-profit assisted under sec 15.1; Market developed under ARP.

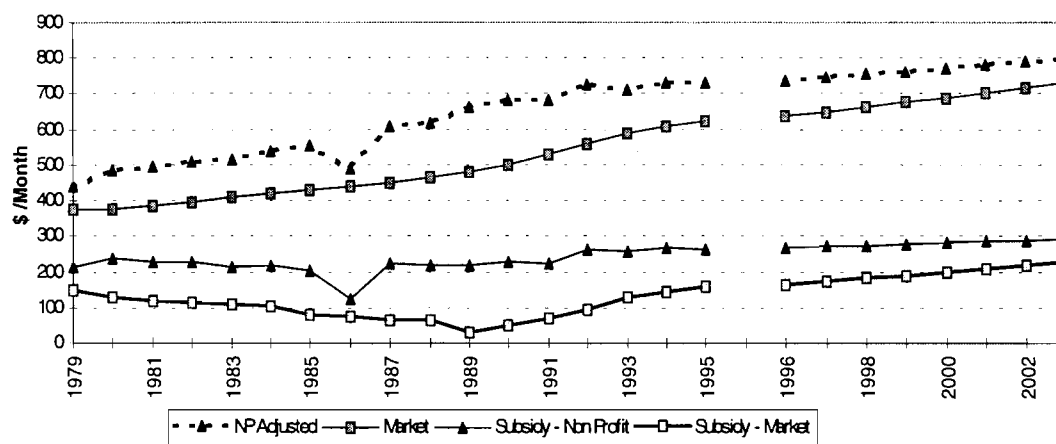


In our first comparison the non-profit rent is higher than the market rent. The gap between the two narrows over time and the rents charged are virtually identical after 1992. In 1995 the non-profit rent drops below the market rent (i.e., the crossover occurs).

## CASE 2: OTTAWA

**Year Occupied:** Market Occupied in early 1977; NP in late 1978, with 1979 providing first full year of data  
**Building Form:** Woodframe, Two Storey Townhomes  
**Location:** Old suburbs  
**Units Compared:** Three Bedroom Town House  
**Programs Involved:** Non-profit assisted under sec 15.1; Market developed under ARP.

Case 2 Ottawa  
 Monthly Rent and Subsidy Profile Non-Profit versus Market



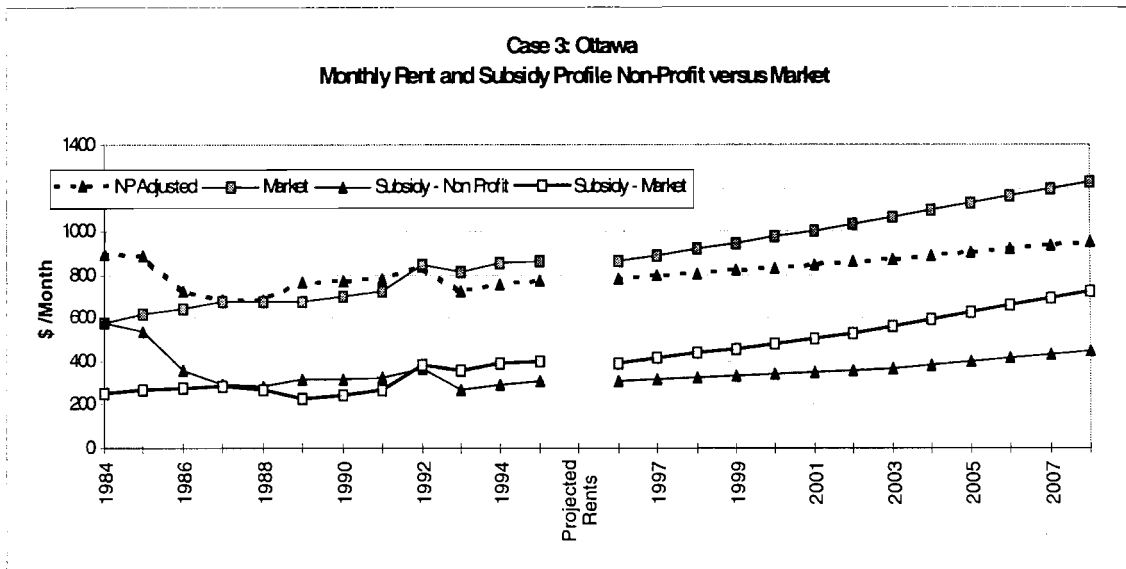
In our second case the market rent and the non-profit adjusted breakeven rent are close to each other at the beginning of the comparison (1979) and track each other quite closely over the 25 years of the comparison. Although the gap narrows over the full 25 years there is considerable variation with a period in the late 1980s when the non-profit rent is increasing more quickly than the market rent although the gap narrows again during the 1990s.

In this case we are comparing a building constructed in 1975-76 with a non-profit built in 1978. This comparison is somewhat unfair to the non-profit since building costs and interest rates were lower in 1975 than in 1978: the construction cost index

increased 19.3 per cent over this period. A cross over occurs in the 25th year if one adjusts for the differences in construction costs.

### CASE 3: OTTAWA

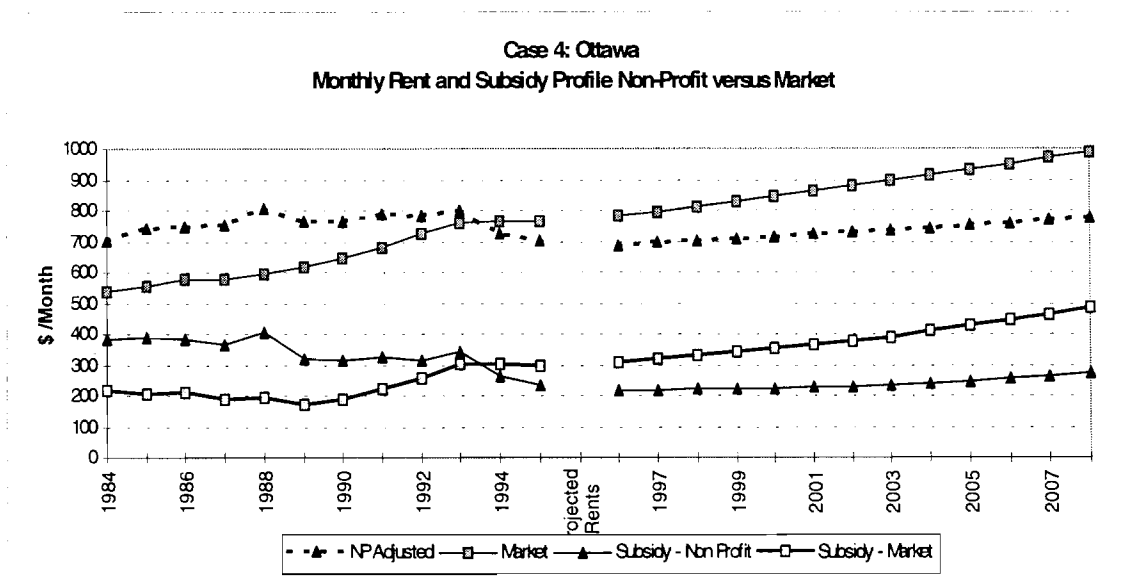
**Year Occupied:** Market Occupied in 1983; NP in 1984  
**Building Form:** Woodframe, Two Storey Townhomes  
**Location:** Old suburbs  
**Units Compared:** Three Bedroom Town House  
**Programs Involved:** Non-profit assisted under sec 56.1; Market not developed under any program



Our third comparison is of two buildings occupied in 1983 and 1984. The non-profit rent starts out well above the comparable market rent (\$896 vs \$575) and rapidly falls to closely mirror the market rents finally falling below market by 1992 and has remained below market since then.

### CASE 4: OTTAWA

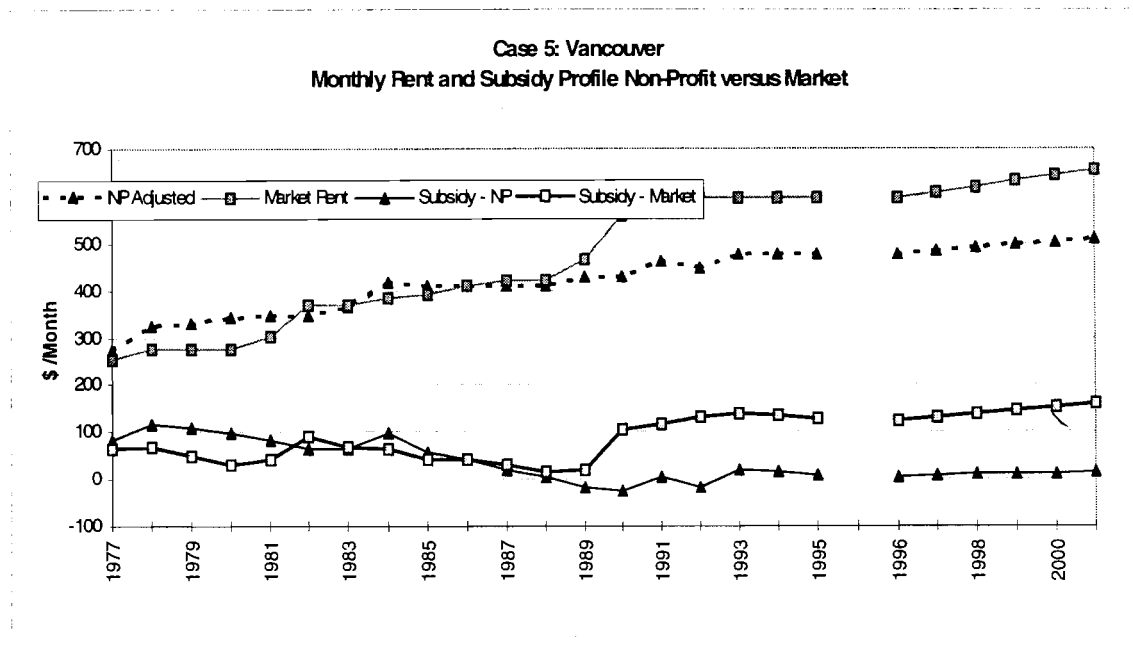
**Year Occupied:** Market Occupied in 1983; NP in 1984  
**Building Form:** Concrete, MidRise  
**Location:** Old suburbs  
**Units Compared:** One Bedroom  
**Programs Involved:** Non-profit assisted under sec 56.1; Market not developed under any program



The fourth comparison shows market rent being \$166 below the non-profit rent in 1984 (the beginning of the comparison). The size of the gap slowly decreases until the non-profit rent falls below the market rent in 1994.

### CASE 5: VANCOUVER

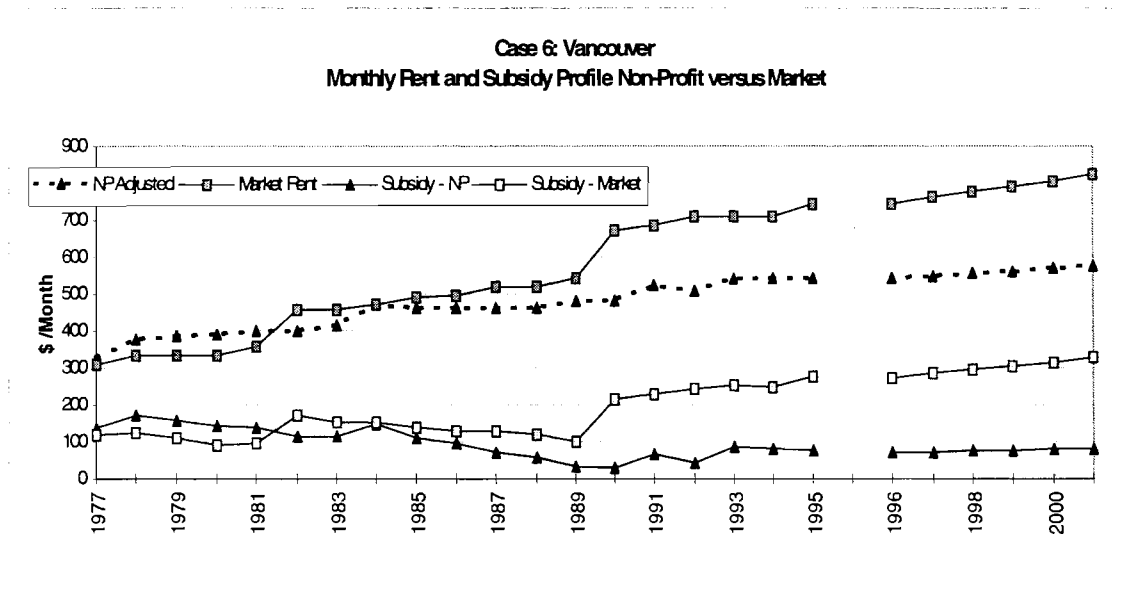
**Year Occupied:** Both projects occupied in 1977  
**Building Form:** Masonry Highrise  
**Location:** Inner City  
**Units Compared:** Bachelor Units  
**Programs Involved:** Non-profit assisted under sec 15.1, Market developed under ARP



The fifth comparison is of two masonry highrise projects in the inner city. The gap between the market rent and the non-profit rent is relatively small (only \$17 in the first year), shows some variability until 1986 when the non-profit rent becomes less than the market rent and remains less than the market rent thereafter. By 1995 the non-profit rent is some \$119 below the comparable market rent.

### CASE 6: VANCOUVER

**Year Occupied:** Both projects occupied in 1977  
**Building Form:** Masonry Highrise  
**Location:** Inner City  
**Units Compared:** One Bedroom Units  
**Programs Involved:** Non-profit assisted under sec 15.1; Market developed under ARP



In this comparison the market rent and the non-profit rent are within a few dollars of each other (virtually tracking each other) until 1982 year when the non-profit rent falls below market. The difference increases to \$190 per month by 1990 and is over \$200 a month by 1995.

### CASE 7: VANCOUVER

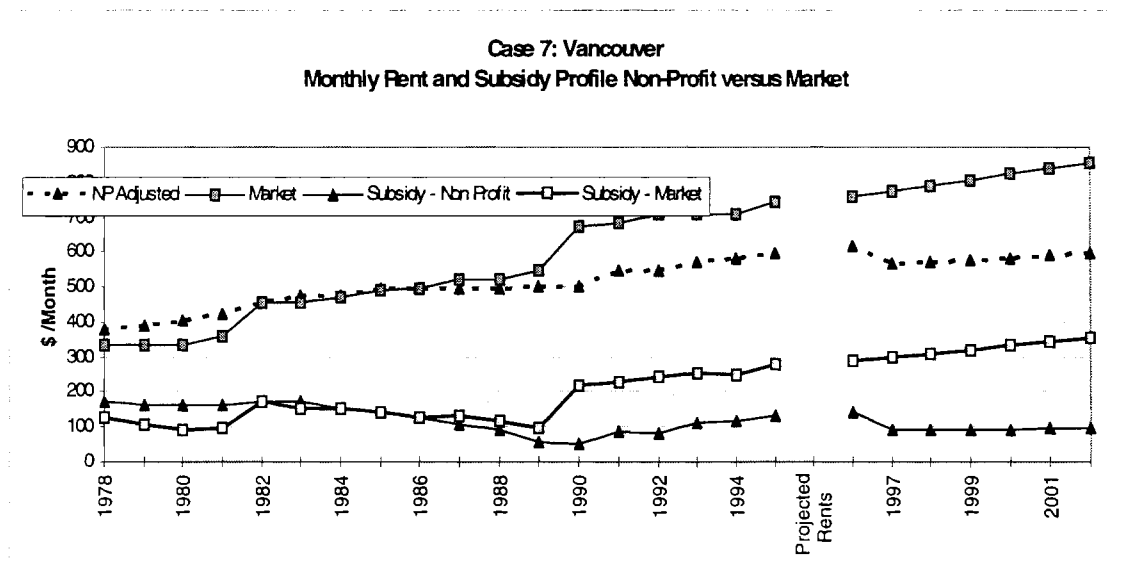
**Year Occupied:** Both projects occupied in 1977, with 1978 providing first full year of data

**Building Form:** Masonry Highrise

**Location:** Inner City

**Units Compared:** One Bedroom

**Programs Involved:** Non-profit assisted under sec 15.1; Market developed under ARP



In our seventh case the market and non-profit rents start out within \$45 of each other and track each other until the 5th year when the non-profit rent falls below the market rent. The two rents move in tandem until the non-profit rent falls well below the comparison market rent and is \$148 below the market rent in 1995.

## CASE 8: VANCOUVER

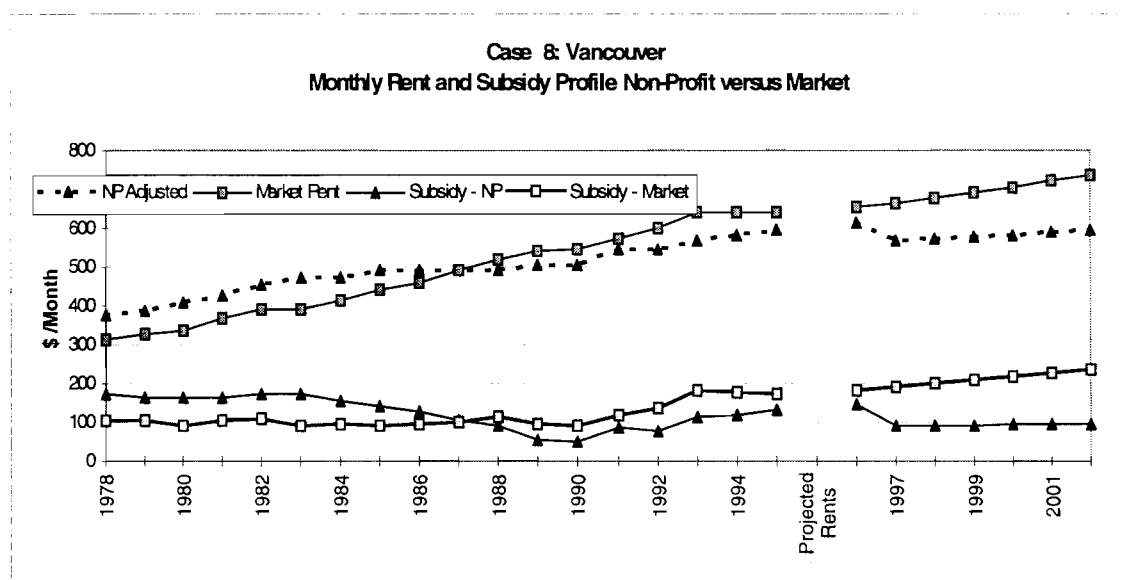
**Year Occupied:** Both projects occupied in 1977, with 1978 providing first full year of data

**Building Form:** Masonry Highrise

**Location:** Inner City

**Units Compared:** One Bedroom

**Programs Involved:** Non-profit assisted under sec 15.1; Market developed under ARP

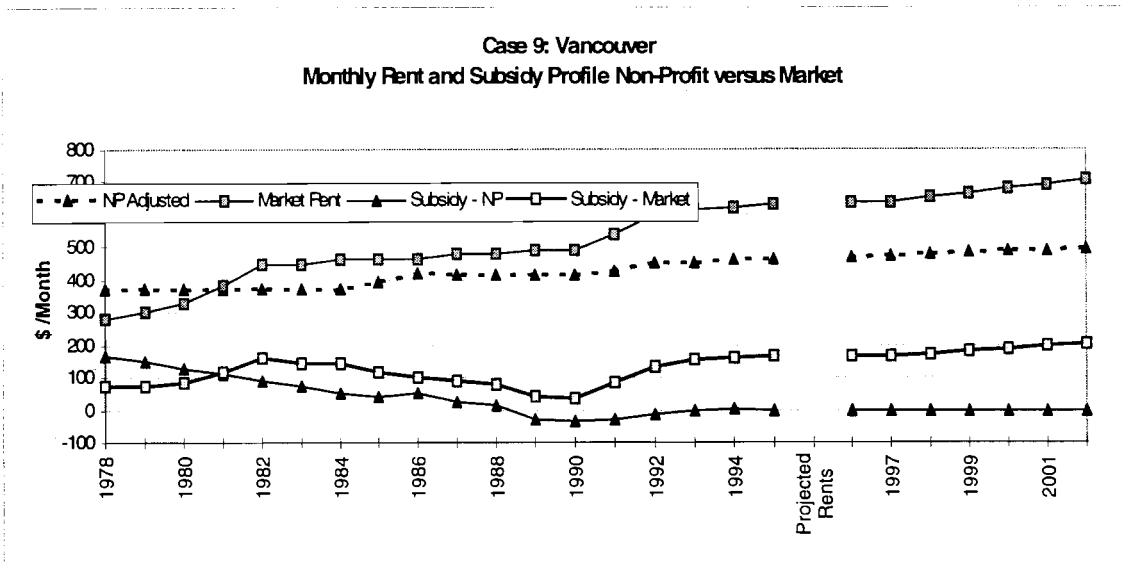


In the eighth comparison the non-profit rent is slightly higher than the market rent at the beginning of the comparison (\$65) and falls slightly below the market rent in 1988, remaining below market rent for the remainder of the comparison period.



### CASE 9: VANCOUVER

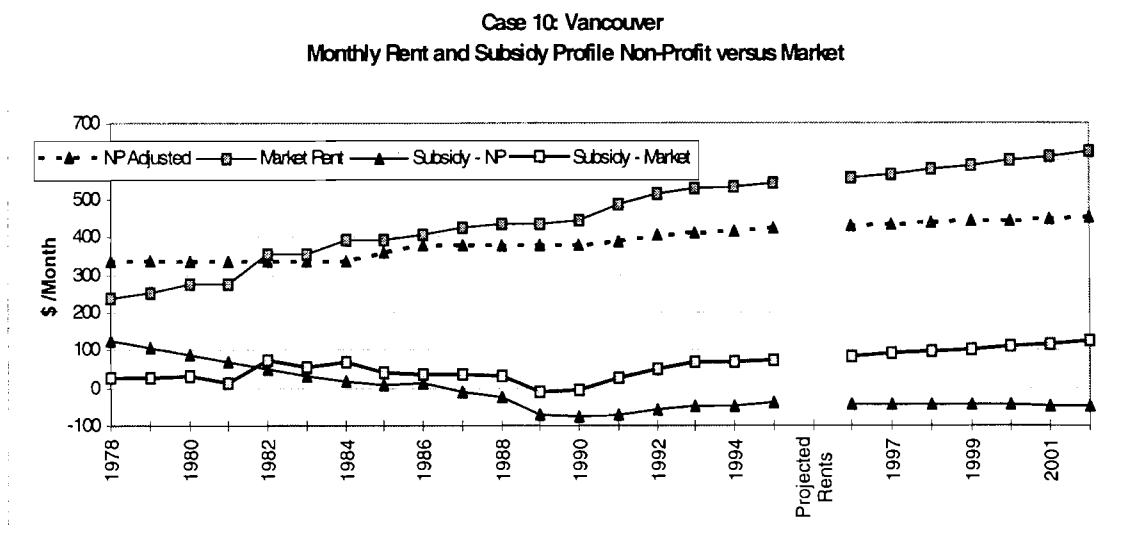
**Year Occupied:** 1978  
**Building Form:** Three storey elevated woodframe  
**Location:** South Vancouver/Richmond  
**Units Compared:** One Bedroom  
**Programs Involved:** NP Sec 15.1/ARP



In the ninth comparison the non-profit rent is higher than the market rent for the first four years and then falls below the market rent in the fifth year, remaining well below the market rent for the remainder of the comparison period. The difference (actual numbers) in 1995 is \$164 a month.

### CASE 10: VANCOUVER

**Year Occupied:** 1978  
**Building Form:** Three storey elevated woodframe  
**Location:** South Vancouver/Richmond  
**Units Compared:** Bachelor  
**Programs Involved:** NP Sec 15.1/ARP



In the tenth comparison the non-profit rent is greater than the market rent for four years (during which the gap narrows) and falls below the market rent in year 5. The non-profit rent then remains below the market rent for the rest of the comparison period being some \$114 less than the comparable market unit in 1995.



## CHAPTER

## 5

## SUBSIDY COSTS

Having established comparable rents for non-profit and market projects in the same area what are the subsidy costs for a government to assist a low-income household?

Some comparisons of subsidy costs attempt to compare different program characteristics as they might apply to different supply vehicles. For example, the costs of subsidizing a household in newly constructed non-profit projects is compared to that of subsidizing a household in older market rental units. To complicate matters, the rent geared to income charge is often different (e.g., in the non-profit the government picks up 100 per cent of the difference between what the family pays and what the unit costs as opposed to a regime where, as in many shelter allowance designs, government picks up only 70 per cent of the difference). Comparisons of these types are inherently futile since analysts are not comparing similar situations (i.e., are not comparing oranges with oranges).

To make the comparisons required by this study we assume identical households are served in both cases. The average income for households in this type of housing is not available for every year in the study period (1977-96). To create a reasonable facsimile of such a time series, the upper boundary of the first quintile of household income as defined by Statistics Canada is used as a representative income of

a potential client. In 1988 the upper boundary of the first quintile was \$16,114, somewhat higher than the mean income of households in core need (\$12,000) as defined by CMHC.

Since we are interested in the subsidies over an extended period of time (25 years) we use the actual upper boundary of the first quintile for the period 1977 to 1995 and thereafter increase it 1 per cent per year for the full 25 year projection period. We assume the household is required to contribute 30 per cent of income to cover actual rental costs. The subsidy is the difference between the 30 per cent RGI and the market rent or the adjusted break even rent.

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## **5.1           Examining a Stream of Subsidy Costs**

Governments are interested in the ongoing costs generated by a program. Will the program become more expensive over time or will program costs even out or fall? Governments are also interested in questions about the timing of costs and often try to compare program costs over time, controlling for such things as inflation. Governments also like to know if initial costs will result in substantial long term savings and at what point these savings may occur.

Typically, estimates of program costs are projected over time. The longer the projection the less satisfying the results because everyone knows that such things as inflation rates are likely to change and no one knows exactly when or in what direction the change will occur.

In this section we present the findings from the ten comparisons. Seven different results are presented for each case. Since the numbers before 1996 (i.e., up to the end of 1995) are actual numbers (i.e., no projections or assumptions are involved) these are presented in nominal dollars and real dollars. To obtain real dollars the nominal dollars were inflated by the all item Consumer Price Index for the years in question. Thus

the nominal sum (pre 1996) and real dollar total to end 1995 are based on historical numbers.

In the design phase of the report we intended to make projections to year 35 and 36 since we assumed that most of the projects for which we would be able to obtain information would have 35 year mortgages. In fact seven of the ten projects have 50 year mortgages and so a projection to year 35 and year 36 (when mortgage payments would cease) no longer seemed appropriate.<sup>16</sup>

Since the projects start at different points in time (1977 - 1984) we projected market rents and non-profit rents to the end of a 25 year period. In most cases this involves a projection of 6 or 7 years. The details of the projection are given in Appendix B. Although we use current assumptions about inflation (2 per cent being the mid-point of the Bank of Canada's target levels) the projection period is in most cases for such a brief period of time that the projections are not very sensitive to different inflation rates.<sup>17</sup>

Finally, we present a figure for the estimated subsidy cost in year 25. A projection to year 25 was chosen as a compromise between making no projections at all and making projections into a distant future. We chose year 25 because it was reasonably close to the years (19 and 20) for which we have actual numbers and because it represents a convenient cut-off point.

The study results are presented in three columns: non-profit (NP), rent supplement (RS) and the difference between the two (difference). If the difference is

16. There are a number of different ways to make projections. One could use a regression analysis and the results for one are presented in Appendix C. One could recalibrate the formula presented in the paper by Hosios et al. but this goes well beyond the scope of this paper.

17. Statistics Canada reports the consumer price index for December 1996 as 2.2 per cent higher from one year earlier.

negative non-profit is the less expensive vehicle. The graphs representing the subsidy situation are presented in the previous chapter with the rents.

## 5.2 Results of the Comparisons (Subsidies)

In this section we present the findings from the ten comparisons. Seven different results are presented for each case. Since the numbers before 1996 (i.e., up to the end of 1995) are actual numbers (i.e., no projections or assumptions are involved) these are presented in nominal dollars and real dollars. To obtain real dollars the nominal dollars were inflated by the all item Consumer Price Index for the years in question. Thus the nominal sum (pre 1996) and real dollar total to end 1995 are based on historical numbers.

Ottawa - Case 1				
Summary (25 Years)				
	NP	RS	Difference	
Nominal Sum Pre 96	30352	15328	15024	
Nominal Sum Post 95	16064	18836	-2772	
Nominal Total (25 Years )	46416	34164	12252	
Real \$ Total to 1995	43398	18883	24515	
Real \$ Value 96-end	14799	17316	-2517	
Real \$ Total (25 yrs)	58197	36199	21998	
Annual Subsidy Year 25 Only	2620	3289	-669	

In the first comparison the non-profit rent only dips below the market rent in the mid 1990's. As a result rent supplement is the less costly vehicle for the study period. Since the non-profit rent is below the market rent after 1995 the non-profit vehicle is cheaper for those categories that refer to the period after 1995 (e.g., the nominal sum post 1995, the real \$ value (96-end) and the estimated subsidy cost in year 25).

## Case 2

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	45874	20108	25766
Nominal Sum Post 95	26810	18675	8135
Nominal Total (25 Years )	72684	38783	33901
Real \$ Total to 1995	61853	28219	33633
Real \$ Total 1996 - end	24516	17022	7495
Real \$ Total (25 yrs)	86369	45241	41128
Subsidy Cost in Year 25 Only	3508	2707	801

In the second comparison the non-profit rent never moves below the market rent and so the rent supplement project is the most cost effective during the full 25 year period.

## Case 3

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	51023	43499	7524
Nominal Sum Post 95	57550	84910	-27360
Nominal Total (25 Years )	108573	128409	-19836
Real \$ Total to 1995	61388	50224	11164
Real \$ Value 1996 -end	49825	73085	-23260
Real \$ Total (25 yrs)	111213	123309	-12095
Subsidy Cost in Year 25 Only	5370	8730	-3360

In the third comparison the subsidy costs favour the non-profit project for the full 25 years although the rent supplement project is more cost effective in terms of the nominal sum (pre 96) and the real dollar total to the end of 1995. Much of the nominal sum difference (pre 96) is accounted for by the first three years of the period when the non-profit rent was as much as \$321 higher than the market rent in the first year.



**Case 4**

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	48470	33095	15375
Nominal Sum Post 95	36890	60251	-23361
Nominal Total (25 Years )	85360	93346	-7986
Real \$ Total to 1995	57775	38236	19539
Real \$ Value 1996 -end	32035	52055	-20019
Real \$ Total (25 yrs)	89810	90291	-481
Subsidy Difference in yr 25 Only	3270	5809	-2539

In the fourth comparison the cost effectiveness picture is again mixed. To the end of 1995 the non-profit project is more expensive in real dollars but at the end of 25 years is some \$481 less expensive in real dollars. Subsidy costs in year 25 are estimated to be some \$2539 less than the comparable market unit.

**Case 5**

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	9818	16478	-6660
Nominal Sum Post 95	759	10233	-9473
Nominal Total (25 Years )	10577	26711	-16133
Real \$ Total to 1995	18596	22577	-3980
Real \$ Value 1996 -end	702	9523	-8822
Real \$ Total (25 yrs)	19298	32100	-12802
Subsidy Difference in yr 25 Only	175	1937	-1762

In our fifth comparison the subsidy costs (modestly) favour the non-profit unit to the end of 1995. The nominal difference is some \$6660 to the end of 1995.

**Case 6**

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	22454	37166	-14712
Nominal Sum Post 95	5472	21587	-16115
Nominal Total (25 Years )	27926	58753	-30827
Real \$ Total to 1995	36977	50831	-13854
Real \$ Value 1996 -end	5101	20112	-15011
Real \$ Total (25 yrs)	42078	70943	-28865
Subsidy Difference in yr 25 Only	969	3924	-2955

In the sixth comparison (one bedroom units) the non-profit project is less costly than the market project on all of the cost comparisons (i.e., for the period of historical costs and the projection (6 years) to year 25.

**Case 7**

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	26966	35726	-8760
Nominal Sum Post 95	8425	26978	-18553
Nominal Total (25 Years )	35391	62704	-27313
Real \$ Total to 1995	40718	47089	-6371
Real \$ Value 1996-end	7822	24875	-17053
Real \$ Total (25 yrs)	48540	71964	-23425
Projected Difference in yr 25 Only	1132	4263	-3131

In the seventh comparison the non-profit vehicle is the most cost effective on all the measures for the study period.

**Case 8**

Summary (25 Years)				
	NP	RS	Difference	
Nominal Sum Pre 96	26966	24806	2160	
Nominal Sum Post 95	8425	17424	-8999	
Nominal Total (25 Years )	35391	42230	-6839	
Real \$ Total to 1995	40718	33888	6830	
Real \$ Value 1996 - end	7822	16055	-8233	
Real \$ Total (25 yrs)	48540	49943	-1403	
Projected Difference in yr 25 Only	1132	2816	-1684	

In the eighth comparison the non-profit unit is more cost effective on five of seven measures for the full study period. The differences are not large.

**Case 9**

Summary (25 Years)				
	NP	RS	Difference	
Nominal Sum Pre 96	9530	23486	-13956	
Nominal Sum Post 95	-144	15253	-15397	
Nominal Total (25 Years )	9386	38739	-29353	
Real \$ Total to 1995	18753	32438	-13685	
Real \$ Value 1996 -end	-133	14056	-14189	
Real \$ Total (25 yrs)	18620	46494	-27874	
Subsidy Cost in Year 25 Only	-25	2473	-2498	

For the ninth comparison subsidy costs are lower in all years but the first four. As a result the non-profit project is financially the more effective vehicle for the study period on all measures.

### Case 10

Summary (25 Years)				
	NP	RS	Difference	
Nominal Sum Pre 96	662	8462	-7800	
Nominal Sum Post 95	-3784	8699	-12483	
Nominal Total (25 Years )	-3122	17161	-20283	
Real \$ Total to 1995	6239	11592	-5353	
Real \$ Value 1996 - end	-3493	8001	-11493	
Real \$ Total (25 yrs)	2746	19592	-16846	
Subsidy Cost in Year 25 Only	-576	1494	-2071	

In the tenth and last comparison we present, the non-profit project is more effective on all measures than the comparable market project. Although the rent differences are not large during much of the study period the differences do increase as do subsidy costs for the market unit.

## 5.3 Qualitative Factors

The original study design called for a discussion of qualitative factors that might be considered in discussing the comparative advantage of one rental program over the other. During the design phase for this study it was recognized that the only efficient way to address this issue of quality was to use the results of a survey of tenants that was being carried out by CMHC as part of their evaluation of urban social housing programs.

A brief summary of that research is presented in Appendix C.

Although the measurement of the qualitative dimensions of housing programs is difficult, on the measures used in the urban social housing program evaluation one can say that the results for non-profit tenants were in many cases higher than those for a comparable group of private renters or renters in rent supplement units.

During the course of the study we visited the projects and made a visual assessment of their quality. These assessments indicated no significant quality differences. Compliance audits (in the files) stated the projects were well maintained and met appropriate standards.

These results coupled with the findings (on rents and subsidies) reported in the previous chapters suggest that the non-profit vehicle and particular examples of non-profit programs can be effective and efficient while providing important contributions to dimensions measuring the quality of life.

To this point the results of our research work have been presented. We have described the pattern of rents in market and non-profit units and calculated the cost of subsidizing a household in either vehicle over the past 20 years and made cautious estimates of the next few years. Having reported results, what findings conclusions and observations can reasonably be drawn from them? This is the subject of the next chapter.

## CHAPTER

## 6

FINDINGS, CONCLUSIONS AND  
OBSERVATIONS

## 6.1 Findings – Rent

For all ten comparisons the non-profit adjusted break even rents are initially higher than market rents.<sup>18</sup> For ten of the ten cases non-profit rents fall relative to market rents in comparable buildings.<sup>19</sup> For nine of the ten comparisons the non-profit rents become less than market rent in a comparable building during the period under study.<sup>20</sup> The year in which the crossover occurs varies from the 4th year in one project to the 18th year in another.<sup>21</sup> Eight of the nine crossovers occur in eleven years or less.

18. Accordingly, one would reject null hypothesis I. At the same time, it is important to note that this is not the same thing as saying that non-profit projects are more expensive than comparable newly constructed market buildings. If one adjusts the market rent (in new construction) for the ARP subsidy, the adjusted break even rent and the adjusted market rent (to take account of the subsidy) are usually within a few dollars of each other.
19. Accordingly, one would reject null hypothesis II.
20. Accordingly, one would reject null hypothesis III.
21. The time to crossover is positively associated with unit size. Smaller units crossover more quickly than larger units. The rank order correlation coefficient (rank by size, rank by time to cross over) is significant at the .05 level. The small number of comparisons makes it difficult to assess the relative importance of other factors (e.g., client type).

The evidence we have gathered suggests that the "crossover" can happen much earlier than commonly supposed. The studies discussed earlier in this report, using a set of reasonable assumptions, project a crossover to take place (if at all) between the 22nd and 36th year.

While there are differences between the British Columbia and Ontario cases the general pattern is the same in *all* cases (non-profit rents start out higher than market rents and over time fall relative to market rents). In general, the B.C. cases all crossover and the degree of difference increases by a substantial margin. For example, after 18 years (using actual data) the non-profit adjusted break even rents with one exception are between \$43 and \$202 per month cheaper than market rents in comparable projects.

The Ontario projects take longer to crossover (9 to 18 years) and although the non-profit adjusted break even rents are cheaper in three of the four comparisons the difference is not as great as it is in British Columbia. The important difference is the fact that the Ottawa projects are larger (e.g., 2 of the 4 pairs are 3 bedroom town houses) and the original gap between market and non-profit rent is greater in the Ontario cases. In general, larger units take longer to cross over. Case two is the only one that does not crossover.<sup>22</sup>

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## 6.2 Findings – Subsidies

For two of our cases we have 20 years of actual data, 19 years for four cases, 18 and 17 years for another two and 12 years for the remaining two. By the end of 25 years, with one exception, the non-profit adjusted break even rents are lower than the market rents in comparable projects.

22. This is the one comparison with a large difference between the date of construction of the two projects. If one adjusts for the construction index the crossover occurs in year 25.

Using the data one can make three conclusions about the study projects. First, one would conclude that during the study period non-profit projects on average were less expensive to subsidize than market rents when similar projects were compared. Second, the size of the saving will vary by unit size and be influenced by differences in policy regimes (e.g., rent controls) and operating expenses<sup>23</sup>. Third, the savings in year 25, are considerable.

On average, over time it is less expensive to subsidize households in non-profit projects.<sup>24</sup> For example, in year 25 the estimated average subsidy of a non-profit unit compared to the estimated subsidy for a market unit is some \$2,000 dollars a year less. This is the sum of the subsidy cost in year 25 for the ten cases. (See Appendix B, first page of each case, last line of the summary chart.) Since the ten projects have a total of some 400 units the total savings in year 25 for these projects alone would be some \$800,000. If one uses the trend lines in Appendix C to estimate the situation in year 25, the savings are even larger.

23. There are three reasons for the difference between the Ontario and the B.C. cases. First, smaller units in larger projects (e.g., 100 bachelor units in a high-rise) dip below market rents more quickly than larger units (e.g., three bedroom townhouses) and the B.C. cases are all smaller units (i.e., bachelor and one bedroom units). Second, rent controls were in place in British Columbia during the early 1980's but the rent control regime was more relaxed than that in Ontario and increases of 10.6 per cent were allowed in the period 1975-79. This was later changed to 7 per cent. This compares to allowable increases in Ontario of 6.0 per cent in 1985. Rents in the Ontario cases closely track rent increase guidelines and rent control seems to be one factor constraining the size of the difference between rents in non-profit and market units.

A third reason (and in the view of the study team more important than rent controls) has to do with relative operating costs and changes in those costs. A number of studies have recognized that operating costs in the lower mainland of British Columbia are lower than those in the rest of the country. There are two reasons for this. First, property taxes are lower and secondly, heating costs are much lower. For example, Natural Resources Canada gives annual heating costs in 1996 of \$701 dollars in Ottawa versus \$451 in Vancouver. In 1992 CMHC reported that average operating costs for co-operative projects in Ontario were \$3300 compared to \$2017 in British Columbia. These higher costs tend to mask the underlying cost differences between the two vehicles.

24. Accordingly, one would reject null hypothesis IV.



### 6.3 Conclusions Related to the Theoretical Literature

In a previous chapter we mentioned four studies that used a set of reasonable assumptions to cast some light on the relative efficiency of non-profit and rent supplement (or shelter allowance) programs.

The observed results from ten cases reported in this study do not in general support the predictions one would make from the theoretical studies. First, the study cases show that non-profit rents do fall below market rents (nine out of ten cases) without making any projections into the future. Second, the crossover happens in different markets (Ottawa and the lower mainland of British Columbia). Third, the crossover can occur relatively early in the life of a project (as early as the fifth year in three of our cases). Fourth, the differences between the non-profit rent and the market rent increase over time until they are considerable (more than \$13,000 per year by year 25 for our ten comparison cases)<sup>25</sup>.

It is not the purpose of this study to redo the theoretical literature but three comments are in order. First, as our actual cases show, there is considerable variation in the real world (e.g., the crossover year can vary from year 4 to year 18 and in one case the crossover did not occur (although the gap narrowed).

These results suggest that the model developed by Hosios et. al. and as applied in further work by CMHC should be refined. Additional work done on the model by CMHC shows the earliest a non-profit project would be cheaper than rent-

25. If one used regression analysis to predict the differences in year 25 the savings would be even larger.

supplement is year 16<sup>26</sup>. Eight of the ten projects discussed here become cheaper by year 11.

It is clearly unreasonable to assume that non-profits are somehow necessarily less efficient than entrepreneurs<sup>27</sup>. At a minimum one would have to recognize that the entrepreneur and the non-profit manager have different goals. One is trying to maximize a rate of return and the other is trying to minimize a rental charge.

A third point has to do with the limited utility of assuming large initial differences and projecting them at constant rates (as several studies have done). This does not allow any benefit from the management of the non-profit projects or non-profit as a vehicle to show up.

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## 6.4 Generalizing From the Evidence

For a number of reasons the study team is convinced that the results can be generalized beyond the two provinces for which we have actual data. The logic of the argument would be as follows.

First, there is considerable consistency in the data (e.g., the non-profit rents increase more slowly than market rents). Second, the comparison is as fair as possible (e.g., advantages to the non-profit such as gifts of land have been removed). Third, the search for comparable market rents resulted in the use of non-profits located in similar neighborhoods (i.e., the comparisons were not made because they favoured one vehicle or the other). Fourth, while there are differences between markets (Ottawa and Vancouver) the same patterns operate.

26. Deacon, P. *Cost of a Shelter-Allowance Program in Ontario*, CMHC, Ottawa, mimeo, no date, see page 9.

27. "Few would argue that the non-profit sector is more efficient." Fallis, G. op. cit., p. 83.

Housing markets are characterized by local factors (e.g., unemployment, land costs, mobility, demographics, plant closures and so on). While there are individual differences (e.g., between Toronto and Vancouver or Toronto and Sudbury) there is a general pattern which emerges over time as periods of recession and expansion work their effects. While circumstances will vary by market area, the strength of the pattern observed in this study suggests that a similar pattern would be observed in other markets if one collected the requisite twenty years of data.

The dynamics driving the crossover seem to involve the following considerations. The management of non-profit projects is trying to prevent rent increases. In addition, there are donations of time (e.g., by lawyers and accountants) which help keep costs down. The most important reason is probably related to the return on investment associated with market rents<sup>28</sup>. Although this is a complicated topic requiring a separate study, the market projects over time must provide a return on investment either as positive cash flow or as a capital gain when the project is sold or a combination of the two. Over the long term (e.g., ten to twenty years) this is probably the main difference between rents in the non-profit and market vehicles (i.e., the non-profit manager is not trying to maximize a return on an investment).

Examination of these factors should be done on an empirical basis since the evidence gathered here clearly shows that non-profit agencies can contain costs (i.e., provide accommodation at lower than market rents even when all subsidies are removed).

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## **6.5 Observations**

Although the study results rest on a small number of paired comparisons there is a considerable degree of consistency within the data which suggests that the

28. The complexity of the real estate investment decision is well discussed in Jaffe, A.J. and Sirmans C.F. (1982), *Real Estate Investment Decision Making*, Prentice Hall, Englewood Cliffs.

conclusions reached here can be generalized to other market areas. There will be regional differences but the general conclusion that non-profit projects can be less costly and that savings grow over time is extremely solid.

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## 6.6 The Policy Debate

The policy debate about the advantages of using non-profits, rent supplements or a shelter allowance to assist households with housing needs is extremely complex. The complexity of the debate is rooted in a number of sources: history, the imprecision about the goals of housing programs, measurement problems and the different interests of various groups in society.

The findings from this study can address some aspects of the policy debate and not others. The most important contribution is a demonstration that it is possible to gather data from existing rental properties and compare a market and a non-profit vehicle and given the enormous subsidies involved (for government) an empirical study is inexpensive. Second, it is important to separate the vehicle from the design of an individual program. For example, a non-profit or shelter allowance program can be designed in many different ways and these program design differences should not obscure, as they easily can, the measurement of comparative costs.

At present, in some jurisdictions, the policy debate is about the relative cost of helping households in their existing housing as opposed to using a non-profit vehicle. To make sense of the relative costs one has to distinguish among the different goals of government housing programs and compare similar programs. If the goal is to transfer income (e.g., reduce an affordability problem) without reference to housing conditions (e.g., crowding or adequacy) then one is talking about an income transfer and the discussion should centre around the relative merits of a tax reduction or a monthly check (i.e., one is not talking about a housing program).

If the debate is about the merits of a housing program (i.e., a program to deal with affordability, suitability and adequacy) then this study can make a contribution to the debate. Where there are tight rental markets (i.e., extremely low vacancy rates) and governments wish to address supply issues at the same time as they address issues of housing need, non-profit projects can be more cost effective than subsidizing the construction of comparable market units and renting units from a private landlord. This study does not address the question of whether or not a generalized program of rent supplement or shelter allowance payments is less or more cost effective than a generalized program of support to a non-profit program. However, the method developed in this study and the ten comparisons presented here demonstrate two things. First, it is possible to measure the relative costs using actual cases. Second, the comparison may not as readily favor the rent supplement (shelter allowance) approach as some might think.

Traditional arguments in favour of rent supplements (and shelter allowances) have argued that households can take advantage of lower rents in existing housing units and that non-profits (by definition) are less efficient than entrepreneurs and thus even for new construction governments would be better off using the rent supplement approach. This study has cast serious doubt on the second claim. The first claim assumes that households can find appropriate shelter (suitable, adequate and affordable) in the market. This assumes the units exist and are available. A recent study carried out for CMHC showed that while sufficient units exist (to house low income households) they are not available (e.g., they are occupied by households who are under consuming housing). Thus the claim that all low income households can be housed at average or below average market rents is (sometimes) false. When this condition applies (as it does in 1996-1997) then the non-profit vehicle may be an appropriate one. A brief summary of this work is presented in Appendix E.

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## 6.7 Endnote

This study has demonstrated a number of things. First it is possible to conduct an empirical comparison of the relative cost effectiveness of two different housing vehicles. Second, the results of the empirical work contradict at least some of the theoretical work that has addressed questions of cost effective program choice. Third, it should be possible to carry out additional empirical work which would provide information on the pattern of behaviour in different market areas. Important work needs to be done on the actual behaviour of non-profit housing agencies. What particular aspects of their operations allow them to provide accommodation (with all subsidies removed) at less than market rents?

In particular the study shows that for the ten comparison projects studied here, the non-profit vehicle (nine times out of ten) is the most cost effective program choice. The study results rest on a solid empirical foundation which suggests that similar results would be obtained in similar markets.



**APPENDIX A**  
**Study Design as Proposed in October 1995**



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## Study Design as Proposed in October 1995<sup>1</sup>

Considerable work has been done developing **models** of different programs and comparing different **programs** over time. Although these exercises are useful and instructive they are not always convincing. The usual dispute about the appropriateness of the model involves arguments about the assumptions made and the discount rates (e.g., inflation, maintenance costs, interest rates) used. The rates chosen have a large impact on the outcome of the comparisons and are normally regarded with concern by those interested in the comparison being made. For example, a 0.5% difference in the increase in estimated maintenance costs can change the outcome (i.e., with a 0.5% change a program that appeared less effective under one assumption, looks to be more attractive).

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### *The Problem*

Is there a research method which would involve the collection of actual experience and allow one to decide (for that market) whether one program is more expensive/effective than an other?

Ideally, one would like to run a true experiment, comparing different program interventions and (all other things being equal) compare the results. Unfortunately, this is rarely possible in social policy.

Although the pure experiment cannot be carried out (or has not been carried out) is it possible to collect actual costs for two different programs (for some specified period of time) and compare them?

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### *A Possible Solution*

The study is to assess the effectiveness of selected rental housing programs in addressing the problems of affordability, adequate supply and housing quality. To do this, one must begin with housing costs.

One solution is to track the actual costs of a group of non-profit projects (over time) and compare these costs (expressed in terms of the break-even rent for the

1. Ekos Research Associates (1995), *Phase One of the Study on Selected Rental Housing Programs: A Feasibility Analysis*, Chapter 4, Ottawa, Canada.



units) with the market rents for a comparable set of buildings in the private sector. At the same time one could collect average market rents for comparable housing in the same market over the same period of time.

If one could create a set of comparable projects (e.g., non-profit and rent supplement where rent supplement is used as a proxy for market rents) in the same market, and track the economic and market rents for the units over time (e.g., 1970 to 1994) one could easily estimate the cost of subsidizing households (with the same income) in the two different programs.

For the historical period one would then have actual costs and could easily compare the total costs for the historical period.

The total subsidy bill (for the two programs) could then be expressed in current dollars and the net present value of the subsidy could easily be determined. Since these numbers would be based on **actual** experience (assuming fairness in creating the two comparison groups) there would be little argument about that particular case (for the historical period examined).

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### *Estimating Subsidy Costs for 35 Years*

With the historical data series in hand, one could then test one or more **models** that have been used in the past. There are any number of formula that have been used to estimate rents for a period of time. It should be possible to test several that have been used in past studies to see if they "explain" the historical series that we obtain. If a formula produces a reasonable estimate for the **actual** historical data then it could be used to estimate rents for the full 35 years. For example, the study on "Cost Effective Program Choice" which compared non-profit costs with rent supplement costs developed a model to project market rents for rent supplement units and the rent for non-profit units.

With the historical data series in hand one could test the formula to see if it does generate a reasonable estimate of rents. This in itself would be useful to know (more than one formula could be tested).

If the formula (or some modest revision to it) can be shown to generate reasonable estimates (for the historical period for which we have actual rents) then we could use the formula to generate estimates for year 35.

With estimates (for the two programs) in year 35 it will be a simple task to compare total subsidy costs per household and express these in nominal dollars and as a net present value.

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## *Definitions*

Before discussing definitions it is important to point out that the suggested approach separates the study process into two parts. First the costs of living in certain accommodation are determined for a historical period. Second, when the historical costs are known (i.e., the break-even and market rents for the two types of projects have been collected) the historic costs can be used as a basis to determine the cost of a shelter allowance program using units provided by non-profit agencies or the private market. Separating the costs of housing from the costs of subsidizing households simplifies the work to be done. Since the subsidy formula will be the same (i.e., it will be applied to the two sets of historical costs) the **difference between the two programs** will be a simple reflection (at the cost level) of the total break even or market rents.

It will be difficult (impossible) for the study to address all of these issues within the study budget. Fortunately, CMHC is carrying out an evaluation of urban social housing programs (rent supplement, urban native and non-profit housing) which will include a survey of tenants, landlords, managers and a condition survey of a selected number of units (both rent-supplement and non-profit). The survey instruments address a number of qualitative issues (e.g., feelings of security, knowing one's neighbours and so on) which will allow one to get at these issues.

Effectiveness issues will depend on a separate judgement related to the survey data collected by the CMHC evaluation unit and the results of the inspections of a sample of units. Suitability and adequacy are not at issue since both programs (non-profit and rent-supplement) match units to household size so these will not confound the historical comparisons we are making.

With these considerations in mind one can see that the key definitions separate into three categories (housing costs, subsidy costs and qualitative factors).

### *Housing Costs*

- ❑ market rent - is the rent charged by a private landlord participating in the RS program.
- ❑ break-even rent- is the amount required by a non-profit agency to cover operating costs and principal and interest payments for the mortgage.

### *Subsidy Costs*

- ❑ household income - the definition of household income will match that used by CMHC in the rent-geared to income scale.

- ❑ the formula used to determine the subsidy will be the same for both programs (i.e., subsidizing a unit in non-profit or market housing).
- ❑ the impact of tax programs developed for rental housing (e.g., ARP) will be examined.

### *Qualitative Factors*

While finding historical costs is crucial to the study there are a number of qualitative factors which need to be looked at before one can talk about effectiveness. If the study approach is agreed to then the qualitative factors to be looked at would largely be determined (and defined by) the survey questions (or inspections) carried out by CMHC's evaluation group and inspectors.

Qualitative factors identified so far include the following.

1. physical quality (CMHC is having their inspectors look at a sample of rent supplement and non-profit projects),
2. security of tenure,
3. equity (fair treatment by management),
4. maintenance (e.g., responsiveness to requests for repairs),
5. social support networks,
6. harassment,
7. physical safety, (feelings of security or safety might be included here or dealt with separately) and
8. community involvement.
9. Location (e.g., proximity to work, school, family, public transport).

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## *Related Considerations*

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### *(a) Rent Controls*

Rent controls will be handled by noting the provinces where they have been operating (e.g., Ontario) and/or only in place for part of the time period. Thus the comparison will be between different markets where full or partial controls have been in place.

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### *(b) Management Costs*

In the decision to compare rent-supplement projects with non-profit projects one is essentially electing to compare projects that have been in existence for more than ten years (likely 15-20 years) and since they have survived they are likely to be managed to some reasonable standard of competence. Thus we are assuming that management costs are included in the break-even rent or the market rent for the full period of the comparison.

The assumption that the market and break-even rents will reflect "true" costs does not seem unreasonable. While we will look for the impact of other subsidy programs (e.g., the Assisted Rental Program - ARP) it is extremely unlikely that market rents (for such a long period of time) could not reflect costs. The project would have gone bankrupt if costs were not covered.

Since the projects being studied have survived for a long period of time it is unlikely that we will encounter "problem projects" where the "problems" are reflected in the rent. For example, it is unlikely that we will encounter projects that went into bankruptcy (in the private sector) or ceased to operate (i.e., as a non-profit). However, we will ask about such events and include discussion of them in the analysis.

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### *(c) Accounting Changes/Renovations*

As with depreciation allowances we are assuming that the impact of accounting changes will be reflected in the break-even and market rents. Similarly, major repairs will also be captured in the economic and market rents.

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#### *(d) The Impact of Other Programs*

Since the purpose of the study is to compare two streams of costs (as a beginning point) it is important to note any programs (e.g., ARP) which have a direct and immediate impact on the costs (in the case of ARP on market rents in the first few years of the project). In general, programs which do not have an impact on the costs we are studying will not be dealt with.

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#### *(e) Costs and Effectiveness*

Simply knowing the costs of two housing programs for a certain period will not settle the issue of effectiveness in addressing affordability, housing supply and housing quality. Affordability is related to household income and is not a specific attribute of any type of housing program until someone decides how much of particular housing costs to subsidize. Housing quality is not necessarily an attribute of a specific program until the program has been implemented. For example, it is possible to design a rent supplement program which provides the same or better quality than a corresponding non-profit program. This is not to claim that this has happened only to emphasize the point that housing quality is not a necessary attribute of a housing program.

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#### *(f) The Tax Code*

There are differences in the way that the tax code treats the two types of projects. While there are tax differences between the two sectors, examination of tax differences goes well beyond this study. Thus the study will not examine the impacts of the system of taxes on the two programs. Specific programs (i.e., tax breaks or special provisions designed to encourage rental housing, for example the Assisted Rental Program), will be considered.

If it should turn out that the historical costs of the two programs are similar and it appears that the general provisions of the tax code have a particular importance then it might be worthwhile to contemplate a related study of tax issues.

## *The Problem of Reserves and Residual Value*

One important difference between the two programs has to do with the creation of assets and ownership of the assets.

When the mortgage on the non-profit project is retired (usually at the end of 35 years) the project will have considerable value. Accountants refer to the value of a project at some future time (assuming it can be sold for some amount) as **residual value**. For accounting purposes residual value may have an impact on decisions to undertake an investment.<sup>2</sup>

Residual value has considerable importance to this study since it has to be estimated for the non-profit projects. There is no residual value to the rent supplement projects since disposal of the project will have no impact on the subsidy costs faced by government(s).

One general problem has to do with estimating the residual value of a project. The residual value is difficult to estimate but nevertheless is real and needs to be taken into account in our analysis.

There are three different ways that the residual value can be looked at. One can imagine the break-even rent of the project being reduced (once there is no longer a mortgage to pay) and the resident tenants would receive the benefit of the lower rent. Alternately, if government was subsidizing households in the project the amount of the subsidy would be lower (all other things being equal) after the mortgage was retired. Finally, the land and building could be sold and the proceeds of the sale returned to the non-profit corporation (presumably for investment in another housing project) or to a government.

The analysis has to consider two possibilities. First, that the residual value is captured in the form of lower rents (e.g., after the mortgage is paid off) or secondly, that the cost of the subsidy stream (i.e., over the 35 years) is reduced by the return of the net residual value to the government (or a government agency).

Phase 2 of the study will present the impact of residual value in two ways: first, as a reduction in the subsidy in year 36; and, second (and alternately) as a reduction in the cost of the thirty-five year subsidy stream. Doing so will require taking account of certain complications.

2. In accounting terms "where the estimated residual value is significant, the net residual value (after removal costs) is viewed as a cash inflow at the time of disposal and is discounted along with other cash inflows." Robert N. Anthony and James S. Reece, *Accounting: Text and Cases*, 7th ed. (Homewood, Illinois: Richard d. Irwin Inc., 1983, p. 763.



There are at least three factors that need to be taken into account. First, a 35 year old project may require substantial rehabilitation which would likely be capitalized (impacting the rent) and it is difficult to know what these costs (in dollars) might be. Second, the building could be torn down and a new project built which would also have an unspecified impact on economic rents. In this case, the residual value would be found in the land costs (i.e., the non-profit would not have to buy the land at market cost) and presumably have an impact on economic rents. Finally, the project may continue (without substantial renovation) but any (or most) savings from retiring the mortgage may be taken up in increased maintenance costs.

Thus it is not clear that there is a "residual value" which can be captured in such a way as to reduce break-even rents. Similar, but slightly different considerations, apply to the rent supplement project. No one knows what will happen to market rents in year 36. What happens will depend on the market, the interests of the owners, and the investment climate at the time.

This is an important issue. Governments look at subsidy costs (i.e., the amount they have to pay out) and a substantial difference in costs between the two programs in year 36 would be of interest.

It should be possible to test different assumptions, although the conclusions to be drawn may not be very convincing. A fundamental problem is the expression of residual value in discounted dollars. If the policy analyst (i.e., the person recommending a course of action to a government) is giving recommendations based on a stream of subsidies the current value of several million dollars 35 years in the future is modest (i.e., the several million dollars in year 35 do not make much difference to the subsidy stream).

On the other hand if there is a stock of non-profit housing available (e.g., able to provide lower cost accommodation to households at some point in time — i.e., year 36) that is less expensive to subsidize, then this is of interest. Some studies (e.g., a study by the Quebec Housing Authority -SHQ) show a significant "crossover" in the subsidy costs for non-profit compared to market housing in the 20th year (i.e., the initially more affordable market rents become more expensive -compared to non-profit housing).<sup>3</sup>

The existence of residual value will depend on the treatment of replacement reserves. To prevent sudden gyrations in rent, non-profits have created replacement reserves (i.e., set aside earmarked funds for inevitable repair/renovation bills). The provisions for replacement reserves vary among provinces and over time within a province.

If a non-profit project sets aside reserves and is able to use them as intended then the project should be in a satisfactory condition in year 36 (i.e., it will not face

3. Société d'habitation du Québec. La SHQ, Propriétaire et Locataire de logements: Considérations économiques et sociales. Québec, Société d'habitation du Québec, 1990.

extraordinary repair/renovation bills), and it will make sense to talk about the residual value of the project.

Creating a replacement reserve requires paying a slightly higher rent now in order to avoid rapid escalations in rent at some point in the future. There is of course pressure to keep rents down (by governments and tenants) and it is not clear if replacement reserves will work out as intended.

However, if replacement reserves are in place during the life of the project they will become a second type of asset that has to be considered in our analysis. For example, if a decision was taken to wind up a project, a certain amount of money would be returned to the non-profit agency (and ultimately to the government): any funds in the replacement reserves and the sale price of the project (less the outstanding mortgage and any disposal fees).

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### *Feasibility*

To this point in the discussion we have identified two crucial sets of data which need to be acquired if the study is to be carried out. First, a historical series of rents (market and non-profit) has to be collected. Second, qualitative information on the tenants/projects has to be obtained.

The only possible candidate program for market rents is the Rent Supplement program (RS). It is important to realize that the rents in RS are not pure market rents but would be used as a proxy for market rents. No historical series of market rents (that are rents for the same units in a particular building are available). It is possible that RS rents are not reflective of market rents. The only way to deal with this issue is to compare the RS rents we are able to obtain with the general pattern of rents in the same market. This can be done using the CMHC rent survey for the corresponding period of time.

Qualitative information can be obtained for a sample of RS and non-profit projects only because CMHC has carried out an evaluation of its urban social housing programs. Thus it will be possible to analyze reasonably solid qualitative information for the two types of projects (i.e., RS and non-profit).

As part of the same evaluation CMHC created a sample of 200 rent supplement agreements (in effect before 1986). Using this sample as a starting point makes it possible to determine if the necessary historical information is available.

### *Advantages/Disadvantages*

The main advantage of the proposed approach is that it rests on **actual historical costs** which can be used as a solid underpinning for the study. To our knowledge such a study has never been carried out and would make a modest and interesting contribution to the debate.

Linking this study to the CMHC study would help with generalizing the results. As initially conceived (i.e., case studies in four markets) one would (in fairness) only be able to talk about the particular market(s) studied. Housing markets vary considerably by region and over different time periods. However, since the study would be linked to the representative sample (of rent-supplement units) chosen by CMHC it would be possible (with some luck) to come to more general conclusions.

The disadvantages are twofold. First, it is impossible to find a historical series of rents that covers the full 35 years. Thus **actual costs** will be available for part of the period and estimates of the full 35 years will have to be generated. This is a limiting problem but not a fatal one. Even 20 years of actual costs would contribute to our understanding.

The second (major) disadvantage has to do with the fact that study resources (and historical data) are limited and only a small number of projects and markets can be looked at. This restricts the extent to which the study results can be generalized. It is worth remembering that even with 35 years of actual costs for 100s of projects, the past price behaviour does not guarantee our knowledge of what will happen in the future.

**APPENDIX B**  
**Case Study Detailed Spreadsheets**



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## Definitions

The spreadsheets use the actual data collected for the non-profit and market projects identified as comparables on the basis of similar market area, building form and age. The basis for each column is explained below. Historic data are used through 1995. For 1996 and beyond the rents are projected. Non-profit rent projections are based on maintaining mortgage payments at their 1995 level (i.e., no renewal) while operating costs increase at a rate of 2 per cent annually. Market rents are increased by the same 2 per cent per annum. All data are presented on a per unit basis (project costs were pro rated on a square footage basis between different unit types).

- A) **NP Adjusted:** As discussed above, the non-profit rents are adjusted to eliminate any program benefits. This is the break-even rent the project would have to charge in the absence of any subsidy benefit. The resulting "Non-profit Adjusted" rent series is presented as the first column. As noted above, data are adjusted historic data to 1996 and are projected thereafter.
- B) **Market Actual:** This is the actual market rent in the private project, as identified from the rent supplement schedule for the project. Although benefiting from a rent supplement, the project rents reflect market conditions so no adjustment is made to the market rents. Similarly, although some market cases were developed under ARP, the market rent level is not adjusted for this subsidy, as this does not impact the market rent. (ARP assistance influenced project viability but developers were permitted to set rents at market rates).
- C) **Difference:** This is simply the difference between adjusted non-profit and market rent levels. A negative difference indicates that the non-profit rent is lower; a positive difference reflects lower market rent. The year in which the sign changes indicates the cross over point in the rent profile.

Columns to the right of the "Affordable Rent" column present the calculation of the subsidy cost that would be incurred to ensure that a household earning an income at the level of the upper boundary of the first income quintile pays only 30 per cent of this income for rent.

- D) **Affordable Rent:** This is the rent that would be charged at a 30 per cent rent geared to income ratio to a household earning an income at the level of the upper boundary of the first income quintile (as published by Statistics Canada in the annual Household Income, Facilities, and Equipment - HIFE - Survey). From 1996 on this is projected at a 1 per cent increase annually.

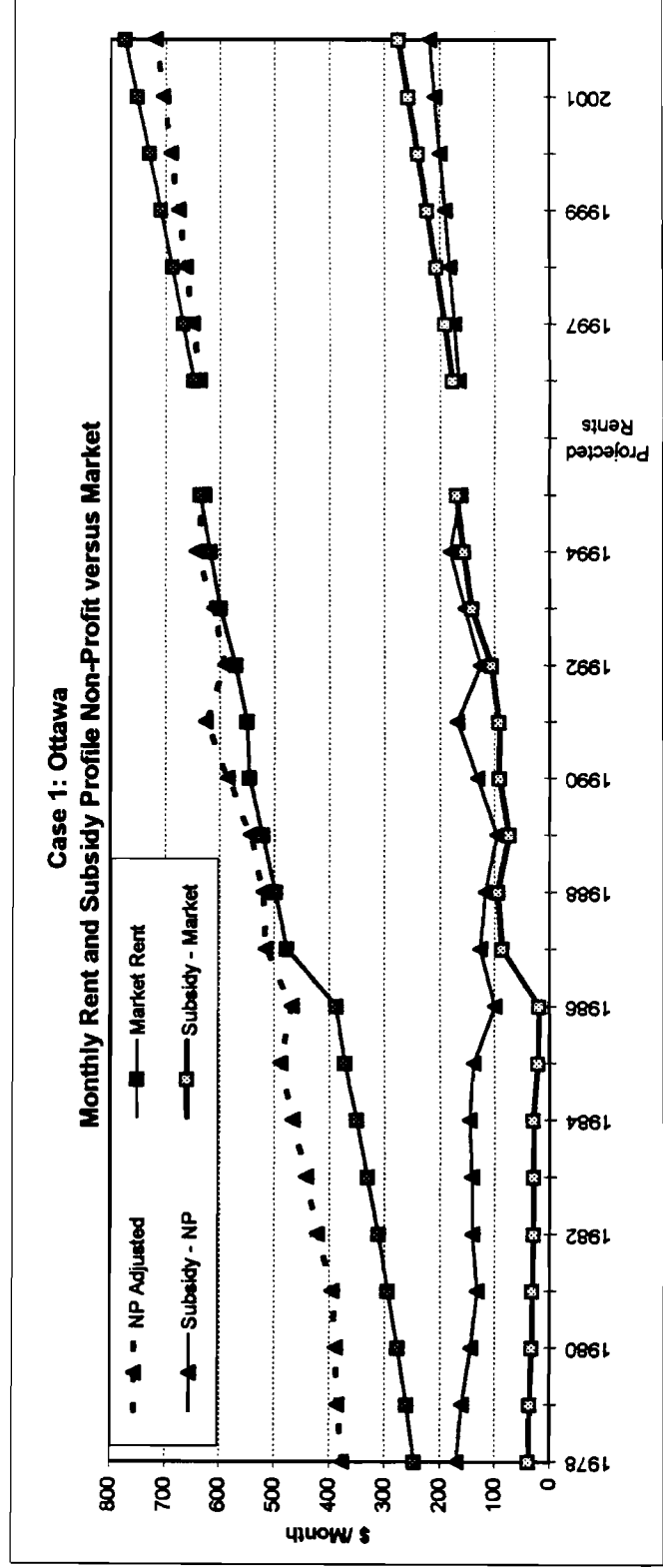


## Case 1: Ottawa

**Year Occupied:** Both projects occupied in 1977  
**Building Form:** NP is 23 Unit Masonry Highrise; Market is 4 storey woodframe with 32 units  
**Location:** Inner City  
**Units Compared:** One Bedroom  
**Programs Involved:** Non-project assisted under sec 15.1; Market developed under ARP.

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	30352	15328	15024
Nominal Sum Post 95	16064	18836	-2772
Nominal Total (25 Years )	46416	34164	12252
Real \$ Total to 1995	43398	18883	24515
Real \$ Value 96-end	14799	17316	-2517
Real \$ Total (25 yrs)	58197	36199	21998
Annual Subsidy Year 25 Only	2620	3289	-669

+ve difference means RS Cheaper  
 -ve difference means NP Cheaper





# Rent levels and Subsidy Cost to Assist Hypothetical Household with Annual Income Equal to First Quintile Boundary

Subsidy cost: 1st Quintile Household															
Rent Data (Monthly)		Non Profit	Adjusted	Market	Actual	Difference	Affordable Rent @30%		nominal \$ cost				Real 1995\$ cost)		
							\$/Month		Monthly NP	Monthly Mkt	Annual NP	Annual Mkt	Monthly NP	Monthly Mkt	
Year	Historic Data														
1978			377		246	131	208	169	39	2028	462	404	92	4845	1104
1979			385		261	124	225	160	36	1919	432	349	79	4194	944
1980			388		277	111	244	144	33	1724	396	285	65	3420	785
1981			395		294	101	263	132	31	1583	371	233	55	2795	656
1982			422		311	111	282	140	29	1678	347	223	46	2679	554
1983			442		330	112	301	141	29	1689	347	212	44	2544	522
1984			466		350	116	320	146	30	1755	358	211	43	2532	516
1985			488		371	117	350	138	21	1661	252	192	29	2306	350
1986			467		386	81	367	100	19	1195	227	133	25	1592	302
1987			515		476	39	389	126	87	1507	1042	160	111	1924	1330
1988			519		498	21	403	117	95	1399	1142	143	117	1717	1401
1989			543		521	22	447	96	74	1153	887	112	86	1349	1037
1990			585		545	40	454	131	91	1572	1097	146	102	1754	1224
1991			626		550	76	458	168	92	2020	1105	178	97	2134	1167
1992			591		571	20	466	125	105	1503	1266	130	110	1564	1317
1993			612		599	13	458	154	141	1847	1697	157	145	1889	1734
1994			643		618	25	462	181	156	2170	1872	184	159	2213	1909
1995			629		636	-7	467	162	169	1948	2030	162	169	1948	2030
Projected Rents															
Projected Subsidy Costs															
1996			637		649	-11	471	166	177	1991	2127	163	174	1952	2085
1997			650		668	-18	476	174	192	2086	2304	167	185	2005	2214
1998			663		688	-25	481	182	207	2184	2487	171	195	2058	2344
1999			676		709	-33	486	191	223	2286	2677	176	206	2112	2473
2000			690		730	-40	491	199	240	2393	2874	181	217	2168	2603
2001			704		752	-48	496	209	257	2504	3078	185	228	2224	2733
2002			719		775	-56	500	218	274	2620	3289	190	239	2281	2864

## Notes:

Projections based on constant mortgage payments at 1995 rate; plus operating expenses increasing at 2% p.a.  
 Affordable rent based on 30% of first quintile boundary income level; Projected from 1995 with a 1% increase annually  
 Real rents calculated by inflating historic data by CPI all item index  
 Post 1995 Real Subsidy costs calculated by deflating nominal subsidy at 2% inflation rate

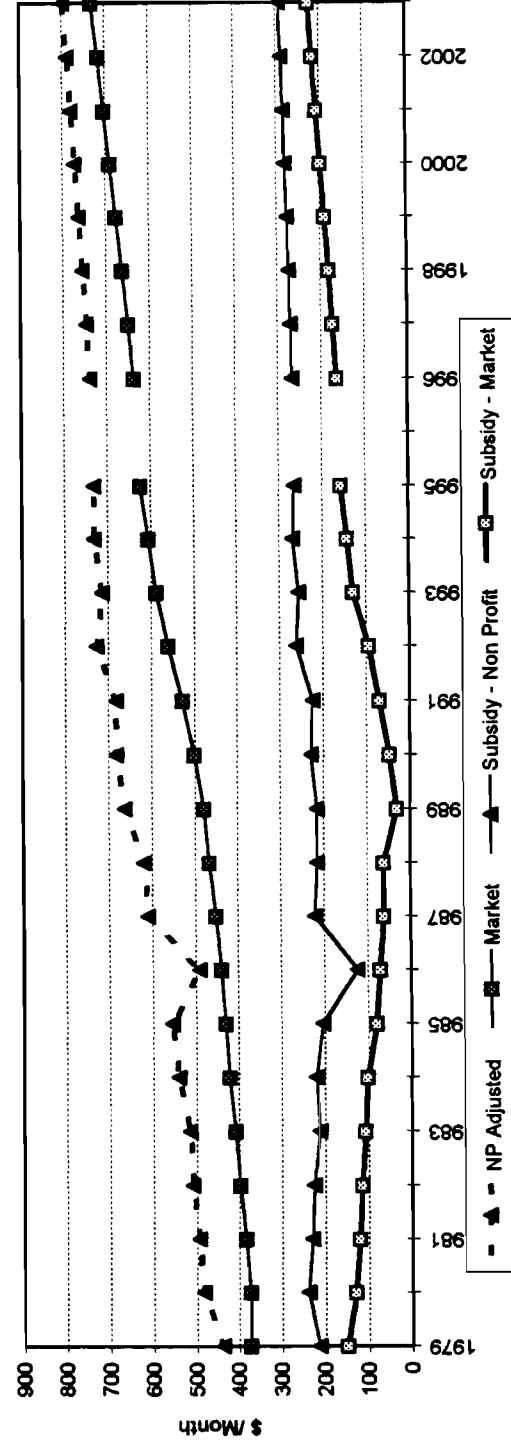
## Case 2: Ottawa

**Year Occupied:** Market Occupied in early 1977; NP in late 1978, with 1979 providing first full year of data  
**Building Form:** Woodframe, Two Storey Townhomes  
**Location:** Old suburbs  
**Units Compared:** Three Bedroom Town House  
**Programs Involved** Non-project assisted under sec 15.1; Market developed under ARP.

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	45874	20108	25766
Nominal Sum Post 95	26810	18675	8135
Nominal Total (25 Years)	72684	38783	33901
Real \$ Total to 1995	61853	28219	33633
Real \$ Total 1996 - end	24516	17022	7495
Real \$ Total (25 yrs)	86369	45241	41128
Subsidy Cost in Year 25 Only	3508	2707	801

+ve difference means RS Cheaper  
 -ve difference means NP Cheaper

Case 2: Ottawa  
 Monthly Rent and Subsidy Profile Non-Profit versus Market



**Rent levels and Subsidy Cost to Assist Hypothetical Household with Annual Income Equal to First Quintile Boundary**  
**Subsidy cost: 1st Quintile Household**

Rent Data (Monthly)			Difference	Affordable Rent @30%	Nominal \$ cost				Real 1995\$ cost)			
Year	Non Profit	Market			Monthly		Annual		Monthly		Annual	
					NP	Market	NP	Market	NP	Market	NP	Market
Historic Data												
1979	Adjusted	Actual	374	65	225	214	149	2565	1788	467	5605	3907
1980		483	374	109	244	239	130	2864	1560	473	5682	3094
1981		493	384	109	263	230	121	2756	1451	405	4866	2563
1982		508	397	111	282	226	115	2708	1379	360	4323	2202
1983		514	408	106	301	213	107	2551	1283	320	3843	1932
1984		540	422	118	320	220	102	2634	1222	317	3801	1763
1985		555	430	125	350	205	80	2457	960	284	3411	1333
1986		491	439	52	367	124	72	1483	863	165	1977	1150
1987		611	452	159	389	222	63	2658	754	283	3394	963
1988		619	466	153	403	216	63	2590	758	265	3180	930
1989		663	479	184	447	216	32	2587	383	252	3025	448
1990		682	501	181	454	228	47	2738	569	255	3054	635
1991		682	528	154	458	224	70	2685	841	236	2836	888
1992		727	560	167	466	261	94	3134	1134	272	3261	1180
1993		714	587	127	458	256	129	3073	1553	262	3141	1587
1994		731	606	125	462	269	144	3222	1726	274	3286	1760
1995		731	624	107	467	264	157	3167	1886	264	3167	1886
Projected Rents												
Projected Subsidy Costs												
1996		739	636	102	471	267	165	3205	1980	262	3142	1941
1997		747	649	97	476	270	173	3244	2076	260	3118	1995
1998		755	662	92	481	274	181	3284	2175	258	3095	2049
1999		763	675	88	486	277	190	3326	2276	256	3073	2103
2000		771	689	82	491	281	198	3369	2380	254	3052	2155
2001		780	703	77	496	285	207	3414	2486	253	3032	2208
2002		789	717	72	500	288	216	3460	2595	251	3012	2259
2003		798	731	67	506	292	226	3508	2707	250	2994	2311

**Notes:**

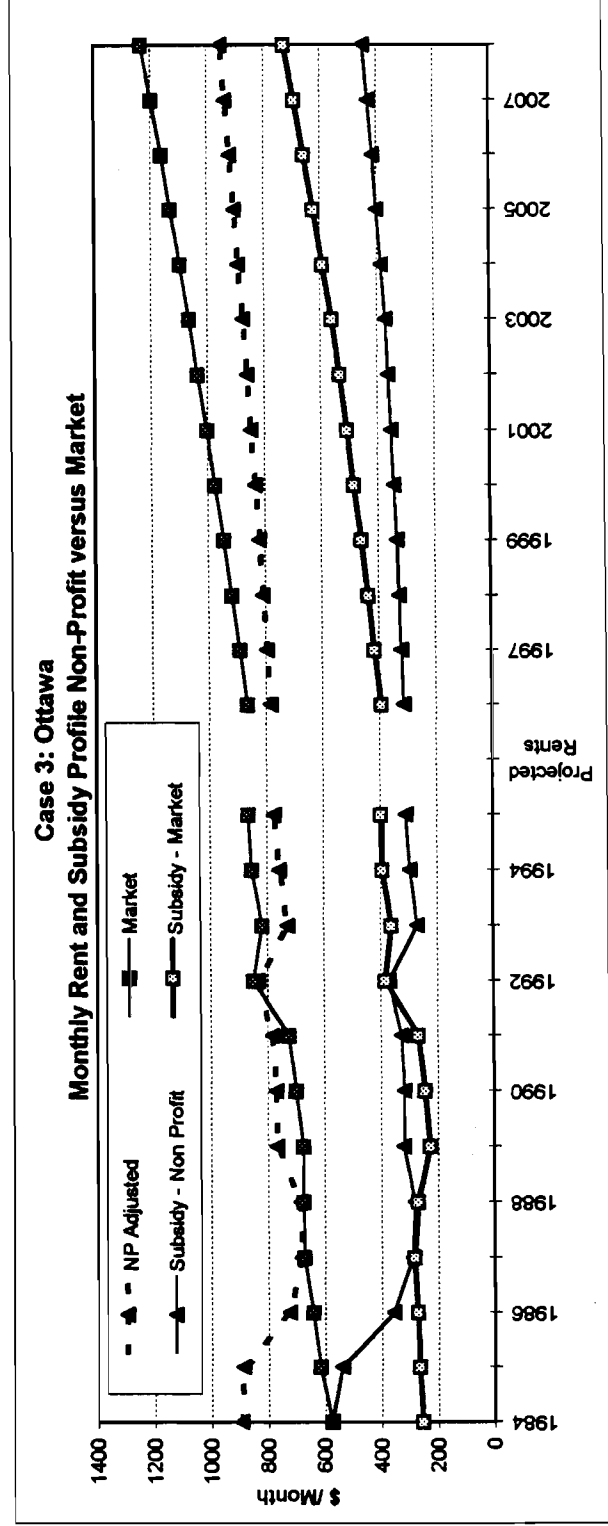
Projections based on constant mortgage payments at 1995 rate; plus operating expenses increasing at 2% p.a.  
 Affordable rent based on 30% of first quintile boundary income level; Projected from 1995 with a 1% increase annually  
 Real rents calculated by inflating historic data by CPI all item index  
 Post 1995 Real Subsidy costs calculated by deflating nominal subsidy at 2% inflation rate

### Case 3: Ottawa

**Year Occupied:** Market Occupied in 1983; NP in 1984,  
**Building Form:** Woodframe, Two Storey Townhomes  
**Location:** Old suburbs  
**Units Compared:** Three Bedroom Town House  
**Programs Involved** Non-project assisted under sec 56.1; Market not developed under any program.

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	51023	43499	7524
Nominal Sum Post 95	57550	84910	-27360
Nominal Total (25 Years )	108573	128409	-19836
Real \$ Total to 1995	61388	50224	11164
Real \$ Value 1996 -end	49825	73085	-23260
Real \$ Total (25 yrs)	111213	123309	-12095
Subsidy Cost in Year 25 Only	5370	8730	-3360

+ve difference means RS Cheaper  
 -ve difference means NP Cheaper



# Rent levels and Subsidy Cost to Assist Hypothetical Household with Annual Income Equal to First Quintile Boundary

Subsidy cost: 1st Quintile Household									
Rent Data (Monthly)				Affordable Rent @30%		Nominal \$ cost		Real 1995\$ cost	
Year	Non Profit	Adjusted	Actual	Difference	\$/Month	NP	Market	NP	Market
<b>Historic Data</b>									
1984		896	575	321	320	576	255	6910	3058
1985		888	615	273	350	538	265	6456	3180
1986		724	640	84	367	357	273	4283	3275
1987		681	673	8	389	292	284	3502	3406
1988		684	674	10	403	281	271	3374	3254
1989		768	675	93	447	321	228	3851	2735
1990		771	700	71	454	317	246	3809	2957
1991		785	725	60	458	327	267	3925	3205
1992		835	850	-15	466	369	384	4434	4614
1993		727	818	-91	458	269	360	3233	4325
1994		757	855	-98	462	295	393	3538	4714
1995		776	865	-89	467	309	398	3710	4778
<b>Projected Rents</b>									
1996		784	865	-81	471	313	394	3750	4722
1997		796	891	-95	476	320	415	3838	4978
1998		808	918	-110	481	327	437	3924	5244
1999		821	945	-124	486	335	459	4023	5511
2000		834	974	-140	491	343	483	4120	5800
2001		847	1003	-156	496	351	507	4217	6089
2002		861	1033	-172	500	361	533	4326	6390
2003		875	1064	-189	506	369	558	4434	6702
2004		890	1096	-206	506	384	590	4614	7086
2005		905	1129	-224	506	399	623	4794	7482
2006		920	1162	-242	506	414	656	4974	7878
2007		936	1197	-261	506	430	691	5166	8298
2008		953	1233	-280	506	447	727	5370	8730
<b>Projected Subsidy Costs</b>									
1996									
1997									
1998									
1999									
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
2008									

## Notes:

Projections based on constant mortgage payments at 1995 rate; plus operating expenses increasing at 2% p.a.  
 Affordable rent based on 30% of first quintile boundary income level; Projected from 1995 with a 1% increase annually  
 Real rents calculated by inflating historic data by CPI all item index  
 Post 1995 Real Subsidy costs calculated by deflating nominal subsidy at 2% inflation rate

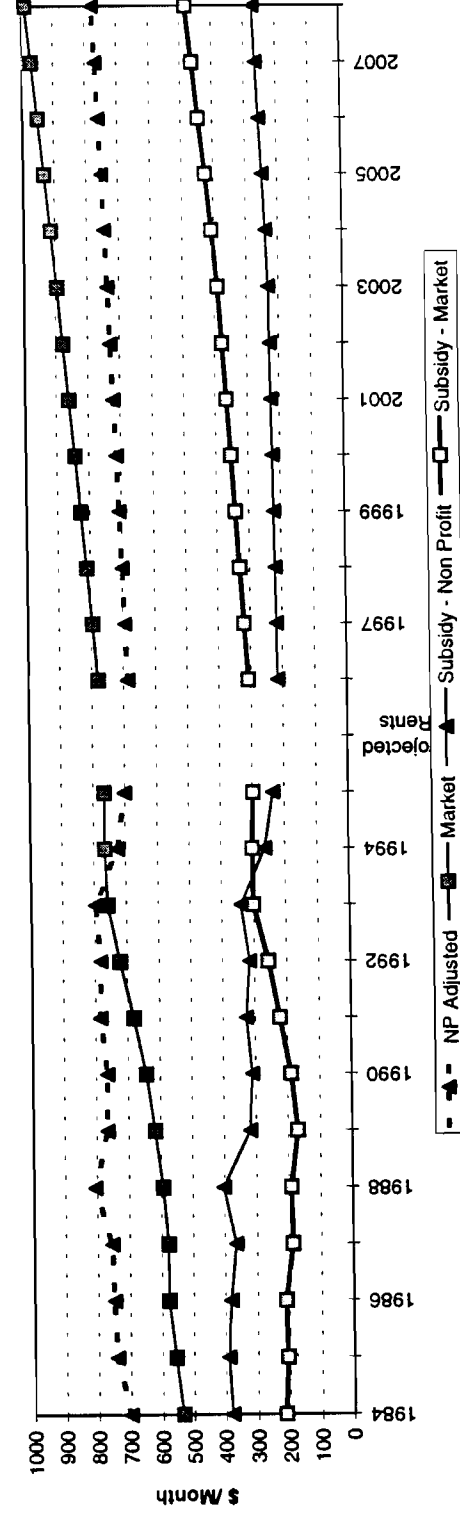
## Case 4: Ottawa

**Year Occupied:** Market Occupied in 1983; NP in 1984,  
**Building Form:** Concrete, MidRise  
**Location:** Old suburbs  
**Units Compared:** 1 Bedroom  
**Programs Involved:** Non-profit assisted under sec 56.1; Market not developed under any program.

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	48470	33095	15375
Nominal Sum Post 95	36890	60251	-23361
Nominal Total (25 Years )	85360	93346	-7986
Real \$ Total to 1995	57775	38236	19539
Real \$ Value 1996 -end	32035	52055	-20019
Real \$ Total (25 yrs)	89810	90291	-481
Subsidy Difference in yr 25 Only	3270	5809	-2539

+ve difference means RS Cheaper  
 -ve difference means NP Cheaper

**Case 4: Ottawa**  
**Monthly Rent and Subsidy Profile Non-Profit versus Market**



# **Rent levels and Subsidy Cost to Assist Hypothetical Household with Annual Income Equal to First Quintile Boundary**

Subsidy cost: 1st Quintile Household												
Rent Data (Monthly)			Affordable Rent @30%	Nominal \$ cost			Real 1995\$ cost)					
Year	Non Profit	Adjusted Market		Monthly		Annual	Monthly		Annual			
				NP	Market	NP	Market	NP	Market			
Historic Data												
1984		701	535	166	381	215	4574	2578	550	310	6598	3719
1985		741	557	184	391	207	4692	2484	543	287	6516	3449
1986		750	578	172	383	211	4600	2531	511	281	6132	3374
1987		755	578	177	365	189	4385	2266	467	241	5599	2893
1988		807	595	212	404	192	4846	2306	496	236	5948	2830
1989		766	618	148	319	171	3826	2051	373	200	4473	2398
1990		765	644	121	311	190	3738	2285	347	212	4169	2549
1991		786	682	104	328	224	3937	2689	347	237	4159	2840
1992		782	723	59	316	257	3797	3090	329	268	3951	3215
1993		798	758	40	340	300	4085	3605	348	307	4176	3685
1994		726	765	-39	263	303	3161	3634	269	309	3223	3706
1995		703	765	-62	236	298	2830	3578	236	298	2830	3578
Projected Subsidy Costs												
1996	Projected Rents	688	780	-92	471	217	309	3706	212	303	2548	3633
1997		695	796	-101	476	219	320	3836	210	307	2521	3687
1998		702	812	-110	481	221	331	3970	208	312	2495	3741
1999		709	828	-119	486	223	342	4107	206	316	2470	3795
2000		716	845	-129	491	225	354	4248	204	321	2446	3847
2001		723	862	-139	496	227	366	4392	202	325	2423	3900
2002		730	879	-148	500	230	378	4539	200	329	2401	3951
2003		738	896	-158	506	232	391	4690	198	334	2380	4003
2004		746	914	-169	506	240	409	4905	201	342	2411	4104
2005		753	933	-179	506	248	427	5124	203	350	2441	4204
2006		762	951	-190	506	256	446	5348	206	358	2471	4301
2007		770	970	-201	506	264	465	5576	208	366	2500	4397
2008		778	990	-212	506	273	484	5809	211	374	2528	4491

## **Notes:**

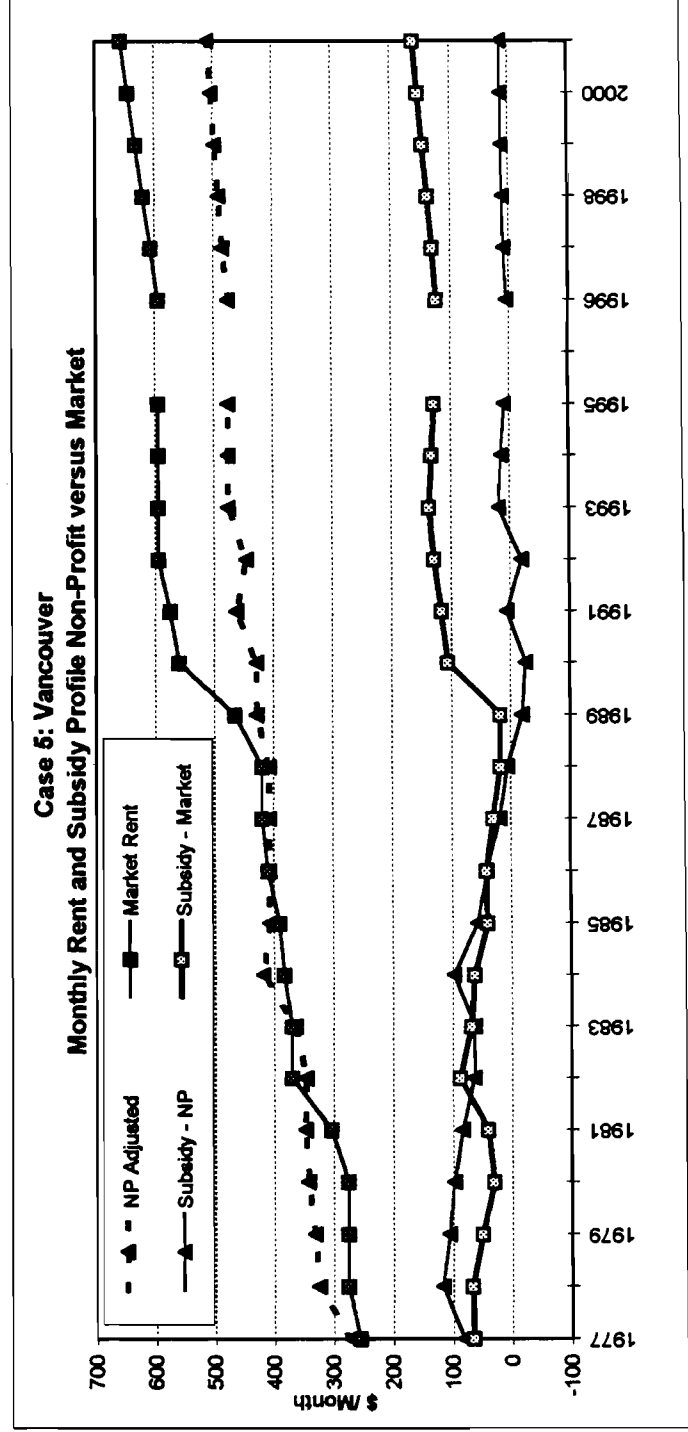
Projections based on constant mortgage payments at 1995 rate; plus operating expenses increasing at 2% p.a.  
 Affordable rent based on 30% of first quintile boundary income level; Projected from 1995 with a 1% increase annually  
 Real rents calculated by inflating historic data by CPI all item index  
 Post 1995 Real Subsidy costs calculated by deflating nominal subsidy at 2% inflation rate

## Case 5: Vancouver

**Year Occupied:** Both projects occupied in 1977  
**Building Form:** Masonry Highrise  
**Location:** Inner City  
**Units Compared:** Bachelor Units  
**Programs Involved** Non-project assisted under sec 15.1; Market developed under ARP.

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	9818	16478	-6660
Nominal Sum Post 95	759	10233	-9473
Nominal Total (25 Years )	10577	26711	-16133
Real \$ Total to 1995	18596	22577	-3980
Real \$ Value 1996 -end	702	9523	-8822
Real \$ Total (25 yrs)	19298	32100	-12802
Subsidy Difference in Year 25 Only	175	1937	-1762

+ve difference means RS Cheaper  
 -ve difference means NP Cheaper





# **Rent levels and Subsidy Cost to Assist Hypothetical Household with Annual Income Equal to First Quintile Boundary** **Subsidy cost: 1st Quintile Household**

Year	Rent Data (Monthly)			Difference	Affordable Rent @30%	nominal \$ cost						Real 1995\$ cost)					
	Non Profit	Market				\$ /Month	Monthly			Annual	Monthly			Annual			
		Adjusted	Actual				NP	Mkt	NP		Mkt	NP	Mkt		NP	Mkt	
Historic Data																	
1977		272		255	17	190	82	65	984	780	213	169	2557	2027			
1978		325		275	50	208	118	68	1410	810	281	161	3368	1935			
1979		332		275	57	225	107	50	1284	600	234	109	2806	1311			
1980		342		275	67	244	98	31	1176	372	194	61	2332	737			
1981		347		303	44	263	84	40	1007	479	148	71	1779	846			
1982		346		370	-24	282	64	88	767	1055	102	140	1225	1684			
1983		364		370	-6	301	63	69	755	827	95	104	1137	1245			
1984		418		383	35	320	98	63	1174	754	141	91	1694	1088			
1985		408		390	18	350	58	40	696	480	81	56	966	667			
1986		408		410	-2	367	41	43	491	515	55	57	654	686			
1987		408		420	-12	389	19	31	226	370	24	39	288	472			
1988		408		420	-12	403	5	17	62	206	6	21	76	253			
1989		428		465	-37	447	-19	18	-229	215	-22	21	-268	251			
1990		428		560	-132	454	-26	106	-307	1277	-29	119	-342	1425			
1991		463		575	-112	458	5	117	61	1405	5	124	64	1484			
1992		446		595	-149	466	-20	129	-234	1554	-20	135	-244	1617			
1993		476		595	-119	458	18	137	221	1649	19	140	225	1685			
1994		476		595	-119	462	14	133	166	1594	14	135	169	1625			
1995		476		595	-119	467	9	128	110	1538	9	128	110	1538			
Projected Subsidy Costs																	
Projected Rents																	
1996		476		595	-119	471	5	124	54	1482	4	121	53	1453			
1997		485		607	-122	476	9	131	109	1568	9	126	105	1507			
1998		491		619	-128	481	10	138	124	1657	10	130	117	1561			
1999		497		631	-134	486	12	146	140	1748	11	135	129	1615			
2000		504		644	-140	491	13	153	157	1841	12	139	142	1667			
2001		510		657	-147	496	15	161	175	1937	13	143	155	1720			

## **Notes:**

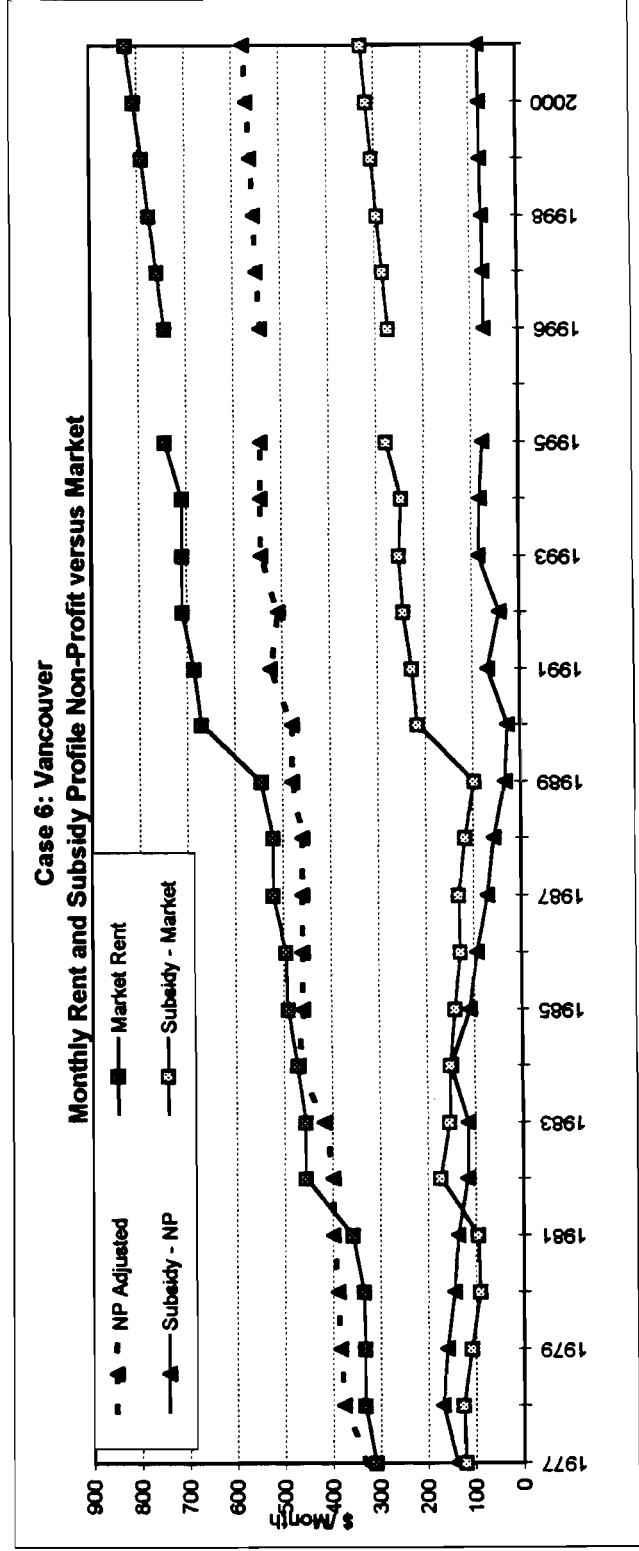
Projections based on constant mortgage payments at 1995 rate; plus operating expenses increasing at 2% p.a.  
 Affordable rent based on 30% of first quintile boundary income level; Projected from 1995 with a 1% increase annually  
 Real rents calculated by inflating historic data by CPI all item index  
 Post 1995 Real Subsidy costs calculated by deflating nominal subsidy at 2% inflation rate

## Case 6: Vancouver

**Year Occupied:** Both projects occupied in 1977;  
**Building Form:** Masonry Highrise  
**Location:** Inner City  
**Units Compared:** One Bedroom Units  
**Programs Involved** Non-project assisted under sec 15.1; Market developed under ARP.

Summary (25 Years)				
	NP	RS	Difference	
Nominal Sum Pre 96	22454	37166	-14712	
Nominal Sum Post 95	5472	21587	-16115	
Nominal Total (25 Years )	27926	58753	-30827	
Real \$ Total to 1995	36977	50831	-13854	
Real \$ Value 1996 -end	5101	20112	-15011	
Real \$ Total (25 yrs)	42078	70943	-28865	
Subsidy Difference in Year 25 Only	969	3924	-2955	

+ve difference means RS Cheaper  
 -ve difference means NP Cheaper



**Rent levels and Subsidy Cost to Assist Hypothetical Household with Annual Income Equal to First Quintile Boundary**  
**Subsidy cost: 1st Quintile Household**

Rent Data (Monthly)			Affordable Rent @30%		nominal \$ cost				Real 1995\$ cost)						
Year	Non Profit	Adjusted	Actual	Market	Difference	\$ /Month		Monthly		Annual		Monthly		Annual	
								NP	Mkt	NP	Mkt	NP	Mkt	NP	Mkt
Historic Data															
1977		329		310	19	190		139	120	1668	1440	361	312	4334	3742
1978		377		333	44	208		170	126	2034	1506	405	300	4859	3598
1979		384		333	51	225		159	108	1908	1296	347	236	4169	2832
1980		389		335	54	244		145	91	1740	1092	288	180	3451	2166
1981		399		358	41	263		136	95	1631	1139	240	168	2880	2012
1982		398		455	-57	282		116	173	1391	2075	185	276	2221	3313
1983		416		455	-39	301		115	154	1379	1847	173	232	2077	2782
1984		470		471	-1	320		150	151	1798	1810	216	218	2594	2611
1985		460		490	-30	350		110	140	1320	1680	153	194	1833	2333
1986		460		495	-35	367		93	128	1115	1535	124	170	1486	2046
1987		460		520	-60	389		71	131	850	1570	90	167	1085	2004
1988		460		520	-60	403		57	117	686	1406	70	144	842	1726
1989		480		545	-65	447		33	98	395	1175	38	114	462	1374
1990		480		670	-190	454		26	216	317	2597	30	241	354	2897
1991		525		685	-160	458		67	227	805	2725	71	240	850	2878
1992		508		710	-202	466		42	244	510	2934	44	254	530	3053
1993		543		710	-167	458		85	252	1025	3029	87	258	1047	3096
1994		543		710	-167	462		81	248	970	2974	82	253	989	3033
1995		543		745	-202	467		76	278	914	3338	76	278	914	3338
Projected Subsidy Costs															
1996		543		745	-202	471		72	274	858	3282	70	268	841	3218
1997		549		760	-211	476		73	284	878	3404	70	273	844	3272
1998		556		775	-219	481		75	294	900	3530	71	277	848	3326
1999		563		791	-228	486		77	305	922	3658	71	282	852	3379
2000		569		806	-237	491		79	316	945	3789	71	286	856	3432
2001		576		823	-246	496		81	327	969	3924	72	290	861	3484

**Notes:**

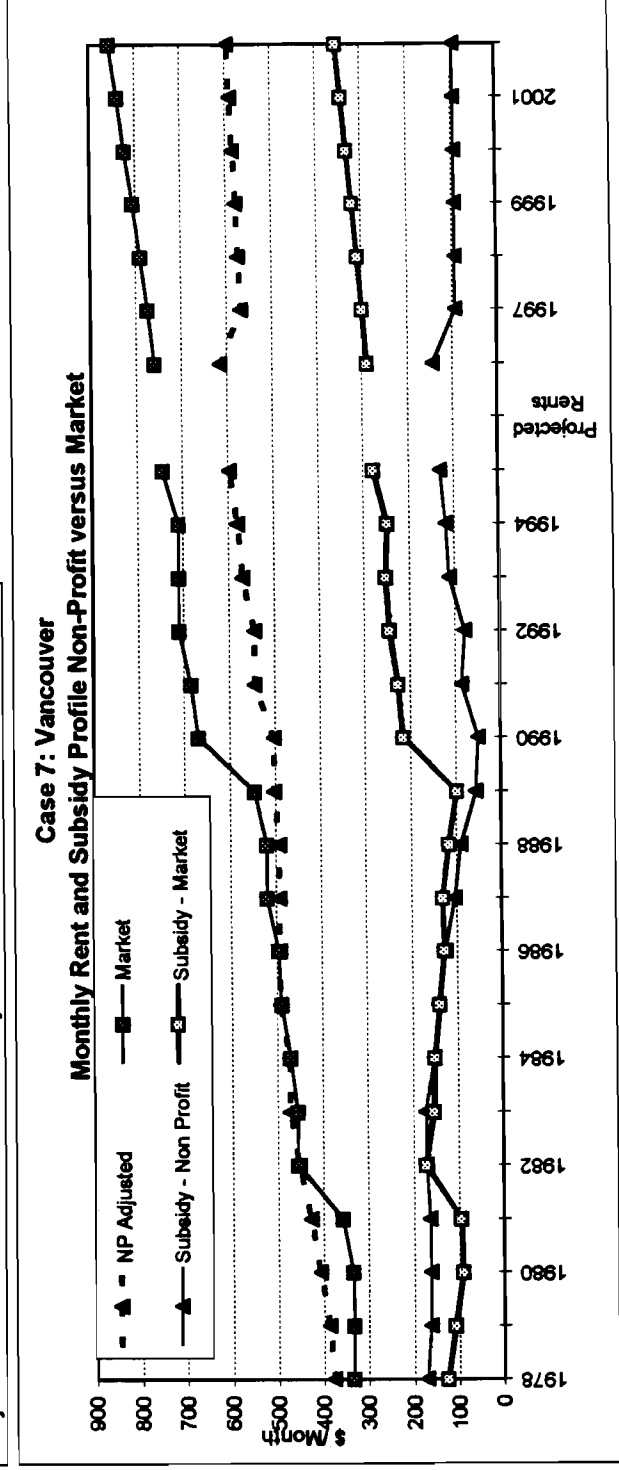
Projections based on constant mortgage payments at 1995 rate; plus operating expenses increasing at 2% p.a.  
 Affordable rent based on 30% of first quintile boundary income level; Projected from 1995 with a 1% increase annually  
 Real rents calculated by inflating historic data by CPI all item index  
 Post 1995 Real Subsidy costs calculated by deflating nominal subsidy at 2% inflation rate

## Case 7: Vancouver

**Year Occupied:** Both projects occupied in 1977, with 1978 providing first full year of data  
**Building Form:** Masonry Highrise  
**Location:** Inner City  
**Units Compared:** One Bedroom  
**Programs Involved:** Non-project assisted under sec 15.1; Market developed under ARP.

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	26966	35726	-8760
Nominal Sum Post 95	8425	26978	-18553
Nominal Total (25 Years)	35391	62704	-27313
Real \$ Total to 1995	40718	47089	-6371
Real \$ Value 1996-end	7822	24875	-17053
Real \$ Total (25 yrs)	48540	71964	-23425
Projected Difference in Year 25 Only	1132	4263	-3131

+ve difference means RS Cheaper  
 -ve difference means NP Cheaper



**Rent levels and Subsidy Cost to Assist Hypothetical Household with Annual Income Equal to First Quintile Boundary**  
**Subsidy cost: 1st Quintile Household**

Year	Rent Data (Monthly)			Difference	Affordable Rent @30%		nominal \$ cost				Real 1995\$ cost)			
	Non Profit	Adjusted	Market		Actual	\$/Month	Monthly		Annual		Monthly		Annual	
							NP	Mkt	NP	Mkt	NP	Mkt	NP	Mkt
Historic Data														
1978		378		333	45	208	171	126	2046	1506	407	300	4888	3598
1979		387		333	54	225	162	108	1944	1296	354	236	4248	2832
1980		407		335	72	244	163	91	1956	1092	323	180	3879	2166
1981		427		358	69	263	164	95	1967	1139	289	168	3474	2012
1982		453		455	-2	282	171	173	2051	2075	273	276	3274	3313
1983		473		455	18	301	172	154	2063	1847	259	232	3107	2782
1984		473		471	2	320	153	151	1834	1810	220	218	2646	2611
1985		493		490	3	350	143	140	1716	1680	199	194	2383	2333
1986		493		495	-2	367	126	128	1511	1535	168	170	2014	2046
1987		493		520	-27	389	104	131	1246	1570	133	167	1591	2004
1988		493		520	-27	403	90	117	1082	1406	111	144	1328	1726
1989		503		545	-42	447	56	98	671	1175	65	114	784	1374
1990		503		670	-167	454	49	216	593	2597	55	241	662	2897
1991		544		685	-141	458	86	227	1033	2725	91	240	1091	2878
1992		544		710	-166	466	78	244	942	2934	82	254	980	3053
1993		569		710	-141	458	111	252	1337	3029	114	258	1366	3096
1994		580		710	-130	462	118	248	1414	2974	120	253	1442	3033
1995		597		745	-148	467	130	278	1562	3338	130	278	1562	3338
Projected Subsidy Costs														
1996		615		760	-145	471	144	288	1722	3461	141	283	1688	3393
1997		568		775	-207	476	92	299	1105	3587	88	287	1062	3447
1998		573		791	-217	481	92	310	1109	3716	87	292	1045	3501
1999		579		806	-228	486	93	321	1114	3848	86	296	1029	3555
2000		584		823	-239	491	93	332	1119	3983	84	301	1013	3607
2001		589		839	-250	496	94	343	1125	4121	83	305	999	3660
2002		595		856	-261	500	94	355	1132	4263	82	309	985	3711

**Notes:**

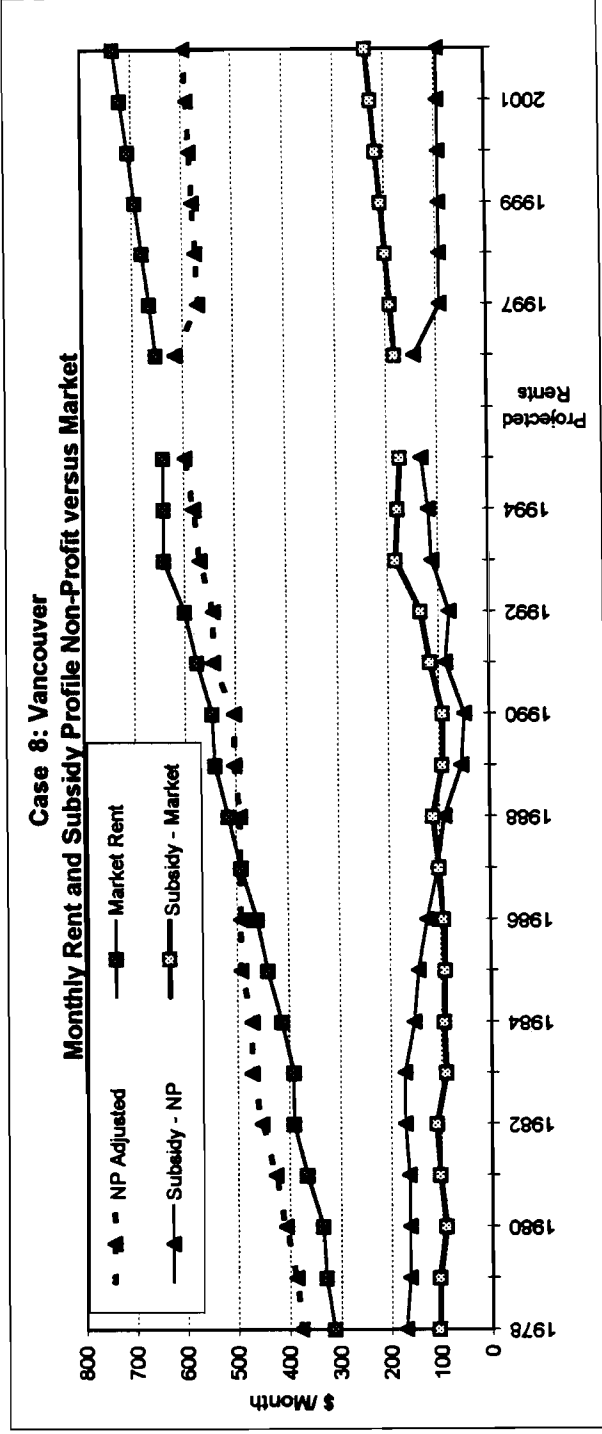
Projections based on constant mortgage payments at 1995 rate; plus operating expenses increasing at 2% p.a.  
 Affordable rent based on 30% of first quintile boundary income level; Projected from 1995 with a 1% increase annually  
 Real rents calculated by inflating historic data by CPI all item index  
 Post 1995 Real Subsidy costs calculated by deflating nominal subsidy at 2% inflation rate

## Case 8: Vancouver

**Year Occupied:** Both projects occupied in 1977, with 1978 providing first full year of data  
**Building Form:** Masonry Highrise  
**Location:** Inner City  
**Units Compared:** One Bedroom  
**Programs Involved:** Non-project assisted under sec 15.1; Market developed under ARP.

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	26966	24806	2160
Nominal Sum Post 95	8425	17424	-8999
Nominal Total (25 Years)	35391	42230	-6839
Real \$ Total to 1995	40718	33888	6830
Real \$ Value 1996 - end	7822	16055	-8233
Real \$ Total (25 yrs)	48540	49943	-1403
Projected Difference in Year 25 Only	1132	2816	-1684

+ve difference means RS Cheaper  
 -ve difference means NP Cheaper





## Case 9: Vancouver

Year Occupied:

1978

Building Form:

Three storey elevated woodframe

Location:

South Vancouver/Richmond

Units Compared:

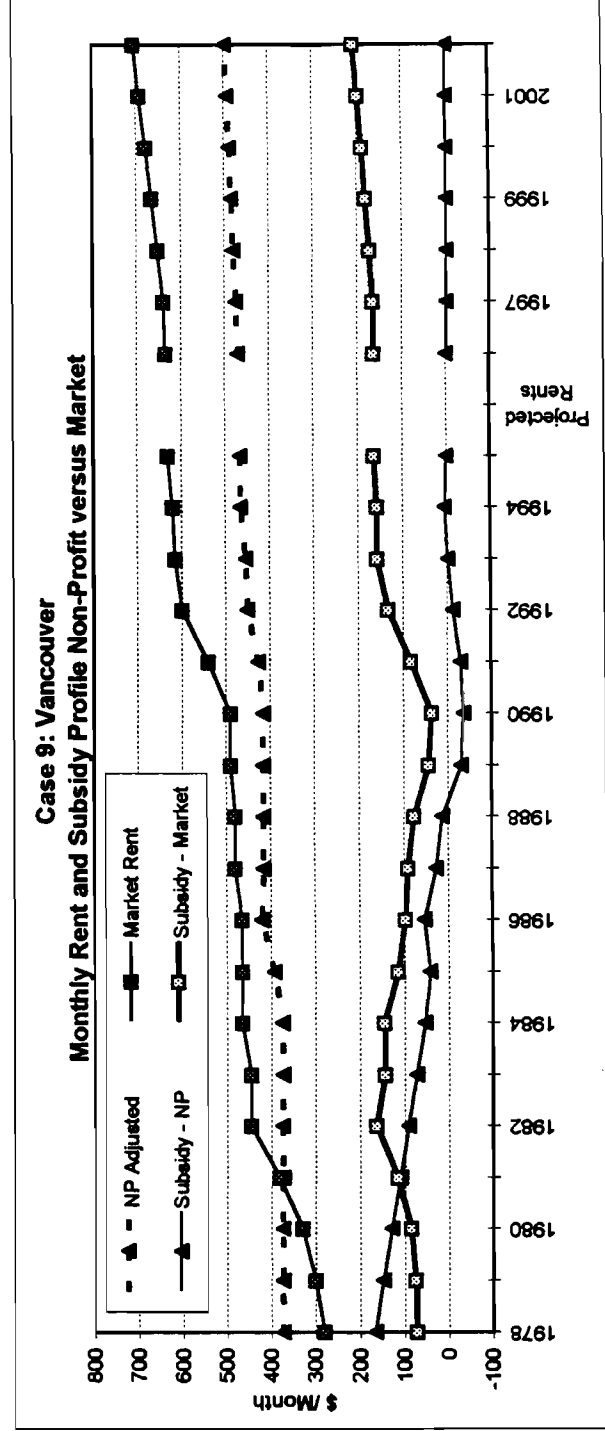
One Bedroom

Programs Involved

NP Sec 15.1/ARP

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	9530	23486	-13956
Nominal Sum Post 95	-144	15253	-15397
Nominal Total (25 Years )	9386	38739	-29353
Real \$ Total to 1995	18753	32438	-13685
Real \$ Value 1996 -end	-133	14056	-14189
Real \$ Total (25 yrs)	18620	46494	-27874
Subsidy Cost in Year 25 Only	-25	2473	-2498

+ve difference means RS Cheaper  
-ve difference means NP Cheaper







## Case 10: Vancouver

Year Occupied: 1978

Building Form: Three storey elevated woodframe

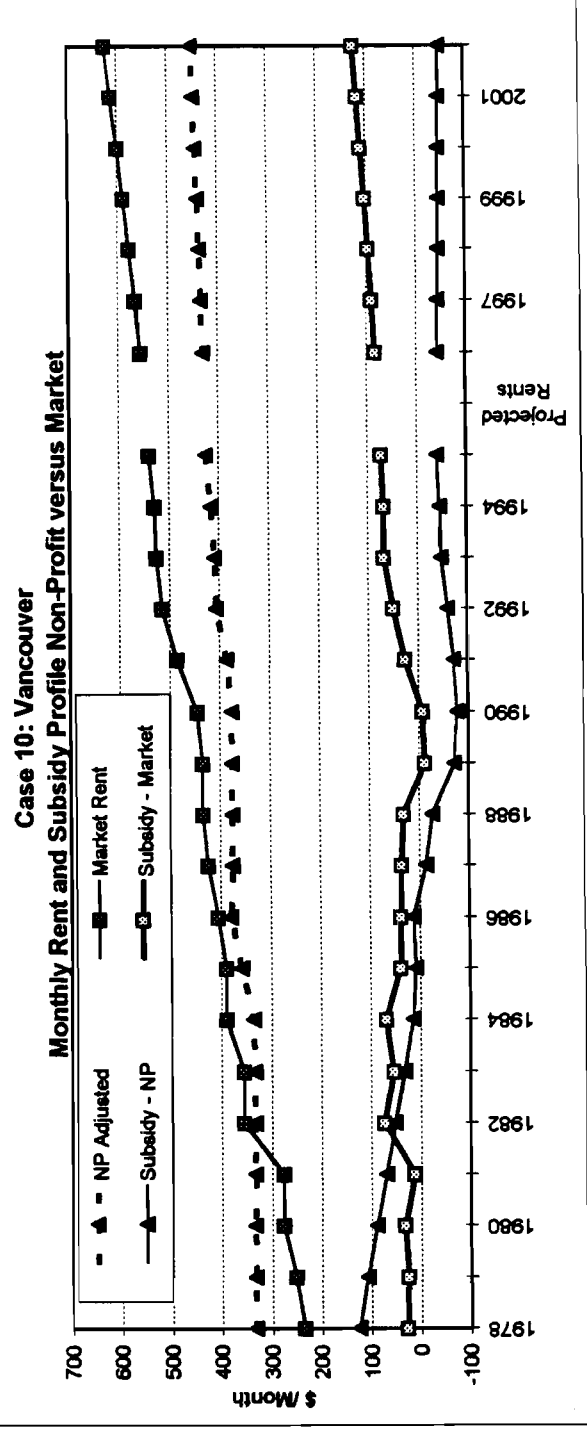
Location: South Vancouver/Richmond

Units Compared: Bachelor

Programs Involved: NP Sec 15.1/ARP

Summary (25 Years)			
	NP	RS	Difference
Nominal Sum Pre 96	662	8462	-7800
Nominal Sum Post 95	-3784	8699	-12483
Nominal Total (25 Years )	-3122	17161	-20283
Real \$ Total to 1995	6239	11592	-5353
Real \$ Value 1996 - end	-3493	8001	-11493
Real \$ Total (25 yrs)	2746	19592	-16846
Subsidy Cost in Year 25 Only	-576	1494	-2071

+ve difference means RS Cheaper  
-ve difference means NP Cheaper



**Rent levels and Subsidy Cost to Assist Hypothetical Household with Annual Income Equal to First Quintile Boundary**  
**Subsidy cost: 1st Quintile Household**

Year	Rent Data (Monthly)		Difference	Affordable Rent @30%		nominal \$ cost			Real 1995\$ cost					
	Non Profit	Market		Actual	Adjusted	\$ /Month	Monthly		Annual		Monthly		Annual	
							NP	Mkt	NP	Mkt	NP	Mkt	NP	Mkt
Historic Data														
1978	333	235	98	208	126	28	1506	330	300	66	3598	788		
1979	333	251	82	225	108	26	1296	312	236	57	2832	682		
1980	333	276	57	244	89	32	1068	384	176	63	2118	761		
1981	333	276	57	263	70	13	839	155	124	23	1482	274		
1982	333	355	-22	282	51	73	611	875	81	116	976	1397		
1983	333	355	-22	301	32	54	383	647	48	81	577	974		
1984	335	390	-55	320	15	70	178	838	21	101	257	1209		
1985	359	390	-31	350	9	40	108	480	12	56	150	667		
1986	379	405	-26	367	12	38	143	455	16	51	190	606		
1987	376	425	-49	389	-13	36	-158	430	-17	46	-202	549		
1988	376	435	-59	403	-27	32	-322	386	-33	39	-395	474		
1989	376	435	-59	447	-71	-12	-853	-145	-83	-14	-998	-170		
1990	376	445	-69	454	-78	-9	-931	-103	-87	-10	-1038	-114		
1991	386	485	-99	458	-72	27	-863	325	-76	29	-912	343		
1992	406	515	-109	466	-60	49	-714	594	-62	51	-743	618		
1993	409	525	-116	458	-49	67	-584	809	-50	69	-596	826		
1994	416	530	-114	462	-46	68	-554	814	-47	69	-565	830		
1995	426	540	-114	467	-41	73	-490	878	-41	73	-490	878		
Projected Rents														
Projected Subsidy Costs														
1996	430	555	-125	471	-42	84	-503	1002	-41	82	-493	982		
1997	433	566	-133	476	-43	90	-516	1079	-41	86	-496	1037		
1998	437	577	-141	481	-44	96	-529	1157	-42	91	-498	1091		
1999	441	589	-148	486	-45	103	-541	1238	-42	95	-500	1144		
2000	445	601	-156	491	-46	110	-553	1321	-42	100	-501	1197		
2001	448	613	-164	496	-47	117	-565	1407	-42	104	-502	1249		
2002	452	625	-173	500	-48	125	-576	1494	-42	108	-502	1301		

**Notes:**

Projections based on constant mortgage payments at 1995 rate; plus operating expenses increasing at 2% p.a.  
Affordable rent based on 30% of first quintile boundary income level; Projected from 1995 with a 1% increase annually  
Real rents calculated by inflating historic data by CPI all item index  
Post 1995 Real Subsidy costs calculated by deflating nominal subsidy at 2% inflation rate

**APPENDIX C**  
**Trendline Projection of Rents to Year 25**



# SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

## Non Profit

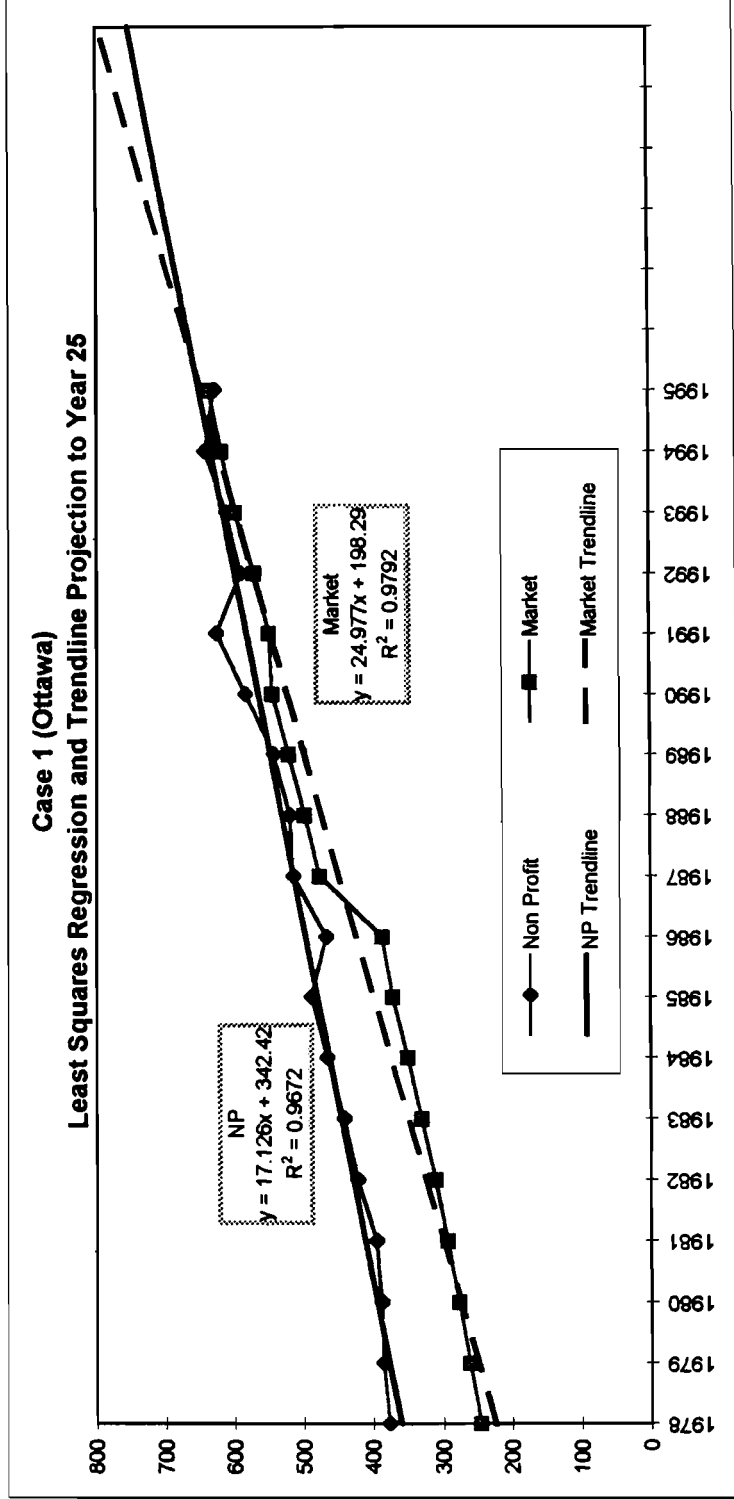
Regression Statistics	
Multiple R	0.9834678
R Square	0.9672088
Adjusted R Square	0.9651594
Standard Error	17.352773
Observations	18

## Market Rnt

Regression Statistics	
Multiple R	0.989543
R Square	0.979196
Adjusted R Square	0.977896
Standard Error	20.03359
Observations	18

	Coefficients	Standard Error	t Stat
Intercept	342.42	8.53	40.13
X Variable 1	17.13	0.79	21.72

	Coefficients	Standard Error	t Stat
Intercept	198.29	9.85	20.13
X Variable 1	24.98	0.91	27.44



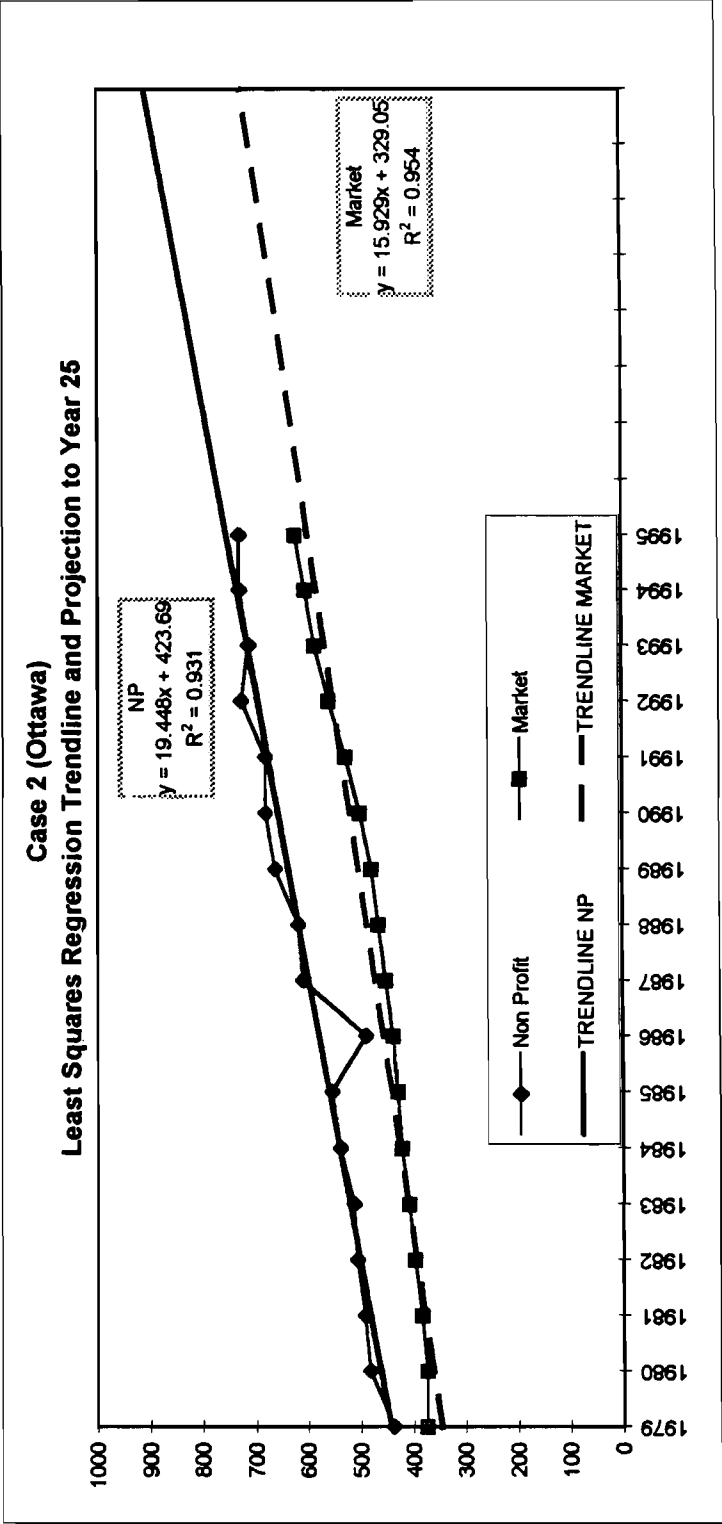
SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

Non Profit	Regression Statistics
Multiple R	0.96490397
R Square	0.93103967
Adjusted R Square	0.92644232
Standard Error	27.6038251
Observations	17

Market Rent	Regression Statistics
Multiple R	0.97672732
R Square	0.95399625
Adjusted R Square	0.95092933
Standard Error	18.2429098
Observations	17

	Coefficients	Standard Error	t Stat
Intercept	423.69	14.00	30.26
X Variable 1	19.45	1.37	14.23

	Coefficients	Standard Error	t Stat
Intercept	329.05	9.25	35.56
X Variable 1	15.93	0.90	17.64



# SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

## Non Profit

Regression Statistics	
Multiple R	0.2533993
R Square	0.0642112
Adjusted R Square	-0.0293677
Standard Error	70.767433
Observations	12

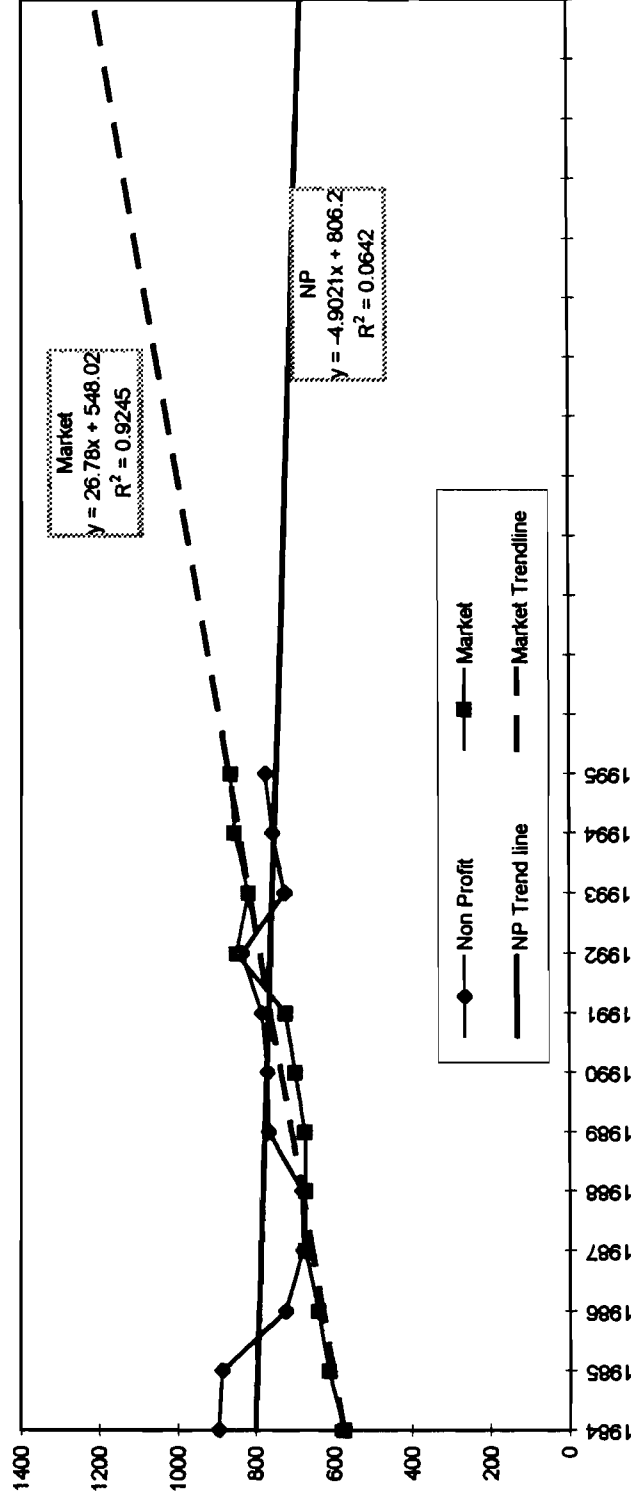
	Coefficients	Standard Error	t Stat
Intercept	806.20	43.55	18.51
X Variable 1	-4.90	5.92	-0.83

## Market Rent

Regression Statistics	
Multiple R	0.9615139
R Square	0.9245091
Adjusted R Square	0.91696
Standard Error	28.937826
Observations	12

	Coefficients	Standard Error	t Stat
Intercept	548.02	17.81	30.77
X Variable 1	26.78	2.42	11.07

Case 3 (Ottawa) Least Squares Regression Trendline and Projection to Year 25



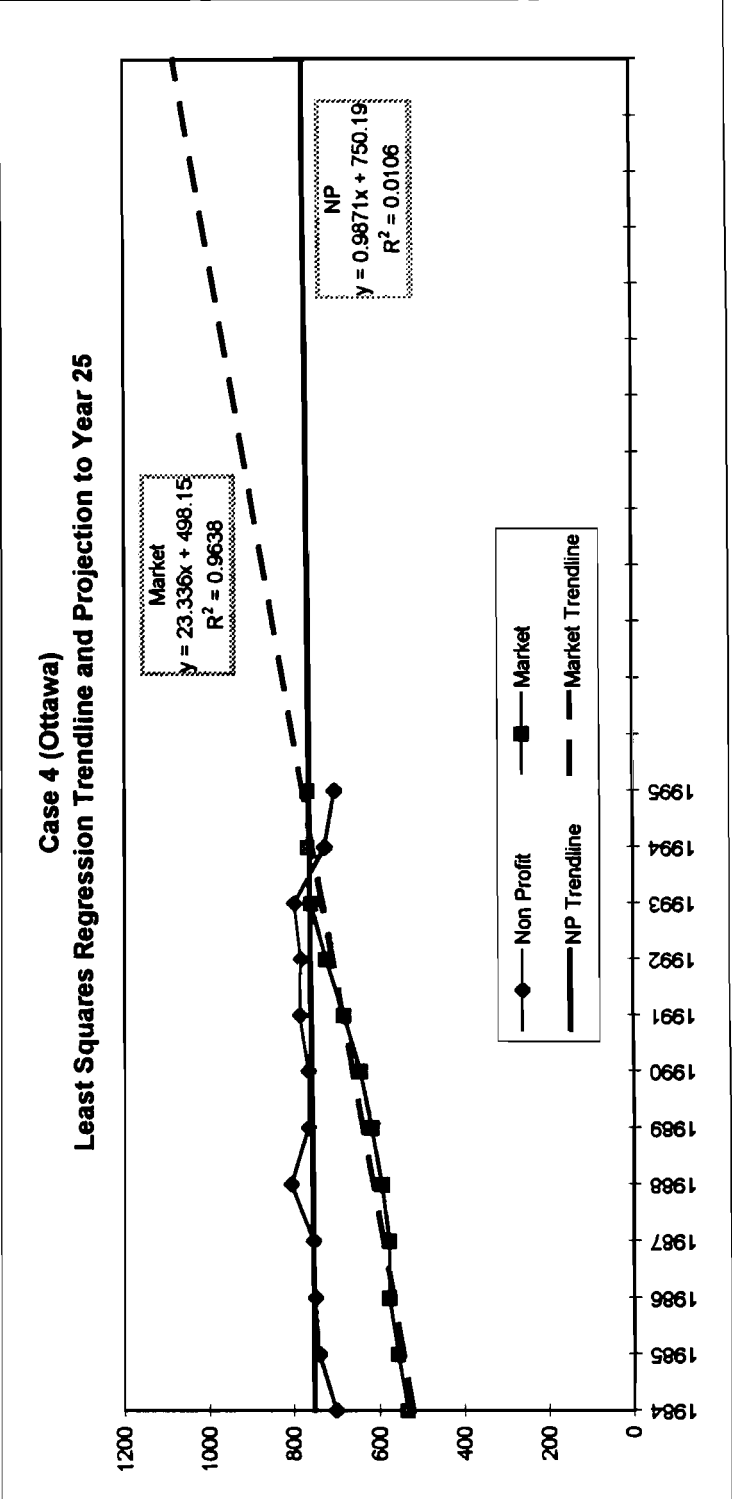


SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

Non Profit		MarketRent	
Regression Statistics		Regression Statistics	
Multiple R	0.10312281	Multiple R	0.981746878
R Square	0.01063431	R Square	0.963826932
Adjusted R Square	-0.08830225	Adjusted R Square	0.960209625
Standard Error	36.0055286	Standard Error	17.09548121
Observations	12	Observations	12

Coefficients		Standard Error		t Stat	
Intercept	750.19	22.16	33.85		
X Variable 1	0.99	3.01	0.33		

Coefficients		Standard Error		t Stat	
Intercept	498.15	10.52	47.35		
X Variable 1	23.34	1.43	16.32		



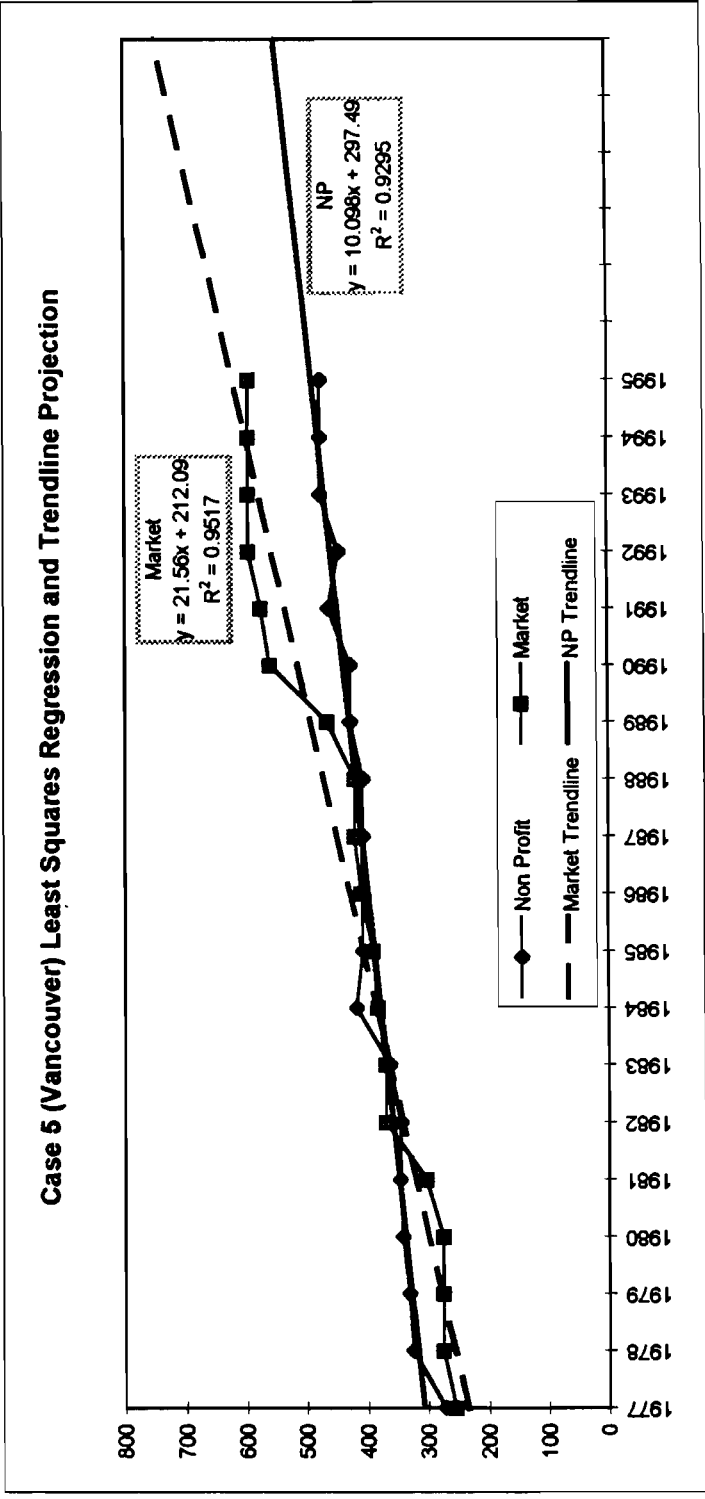
# SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

Non Profit	Regression Statistics
Multiple R	0.96
R Square	0.93
Adjusted R Square	0.93
Standard Error	16.10
Observations	19

	Coefficients	Standard Error	t Stat
Intercept	297.49	7.69	38.68
X Variable 1	10.10	0.67	14.97

MarketRent	Regression Statistics
Multiple R	0.98
R Square	0.95
Adjusted R Square	0.95
Standard Error	28.12
Observations	19

	Coefficients	Standard Error	t Stat
Intercept	212.09	13.43	15.79
X Variable 1	21.56	1.18	18.31



SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

Non Profit

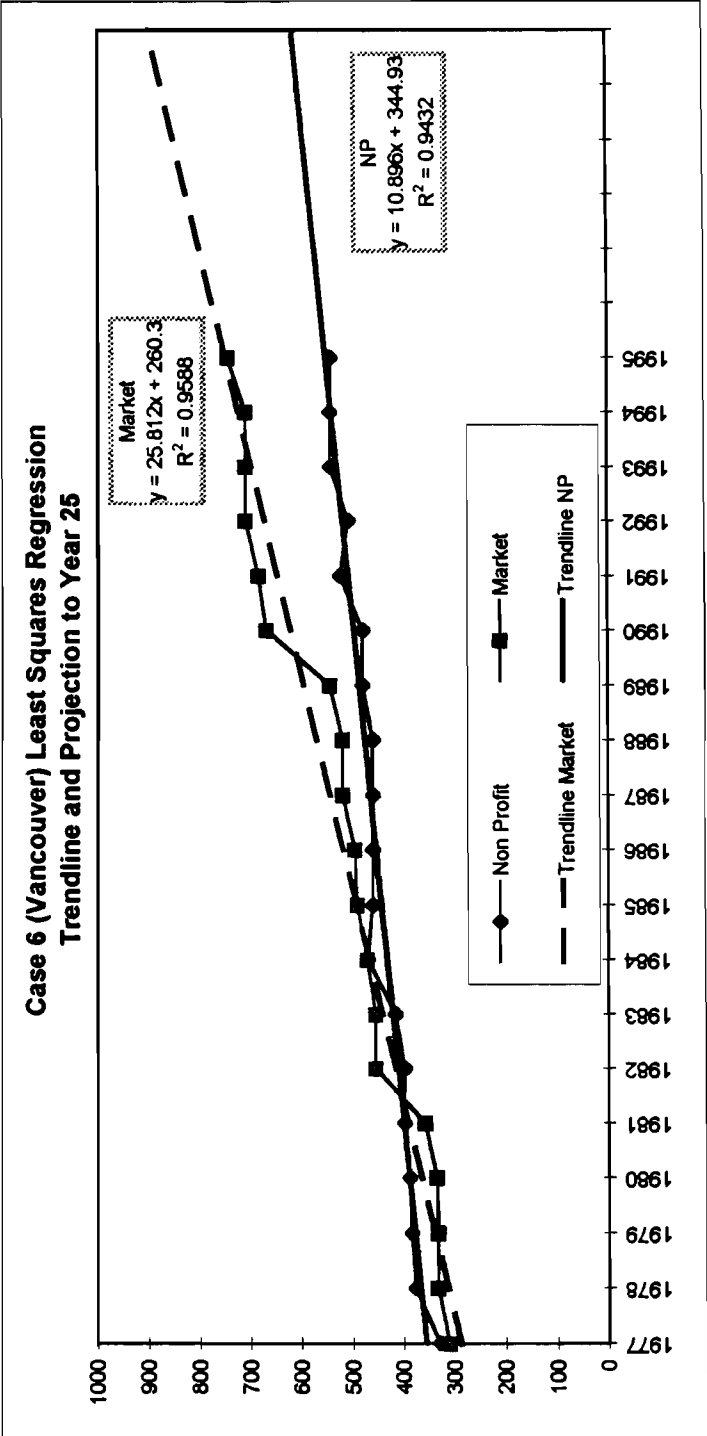
Regression Statistics	
Multiple R	0.97
R Square	0.94
Adjusted R Square	0.94
Standard Error	15.49
Observations	19

	Coefficients	Standard Error	t Stat
Intercept	344.93	7.40	46.64
X Variable 1	10.90	0.65	16.80

Market Rent

Regression Statistics	
Multiple R	0.98
R Square	0.96
Adjusted R Square	0.96
Standard Error	31.00
Observations	19

	Coefficients	Standard Error	t Stat
Intercept	260.30	14.80	17.58
X Variable 1	25.81	1.30	19.88



# SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

## Non Profit

Regression Statistics	
Multiple R	0.98
R Square	0.95
Adjusted R Square	0.95
Standard Error	14.44
Observations	18

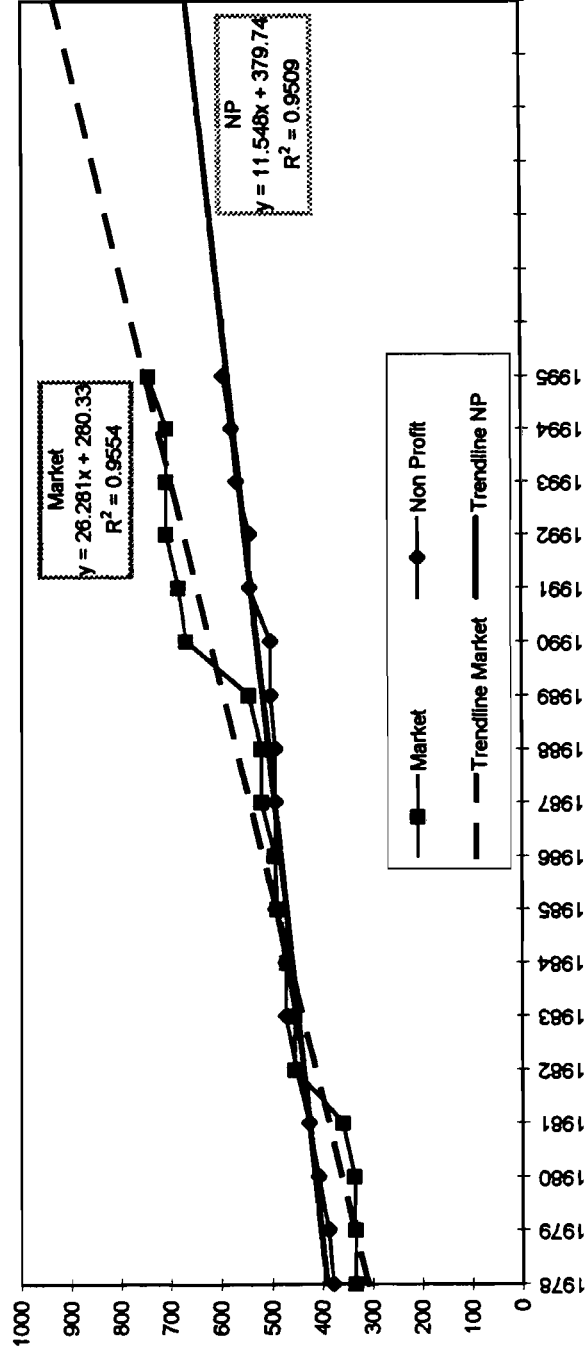
	Coefficients	Standard Error	t Stat
Intercept	379.74	7.10	53.47
X Variable 1	11.55	0.66	17.60

## Market Rent

Regression Statistics	
Multiple R	0.98
R Square	0.96
Adjusted R Square	0.95
Standard Error	31.25
Observations	18

	Coefficients	Standard Error	t Stat
Intercept	280.33	15.37	18.24
X Variable 1	26.28	1.42	18.51

Case 7 (Vancouver) Least Squares Regression Trendline and Projection to Year 25



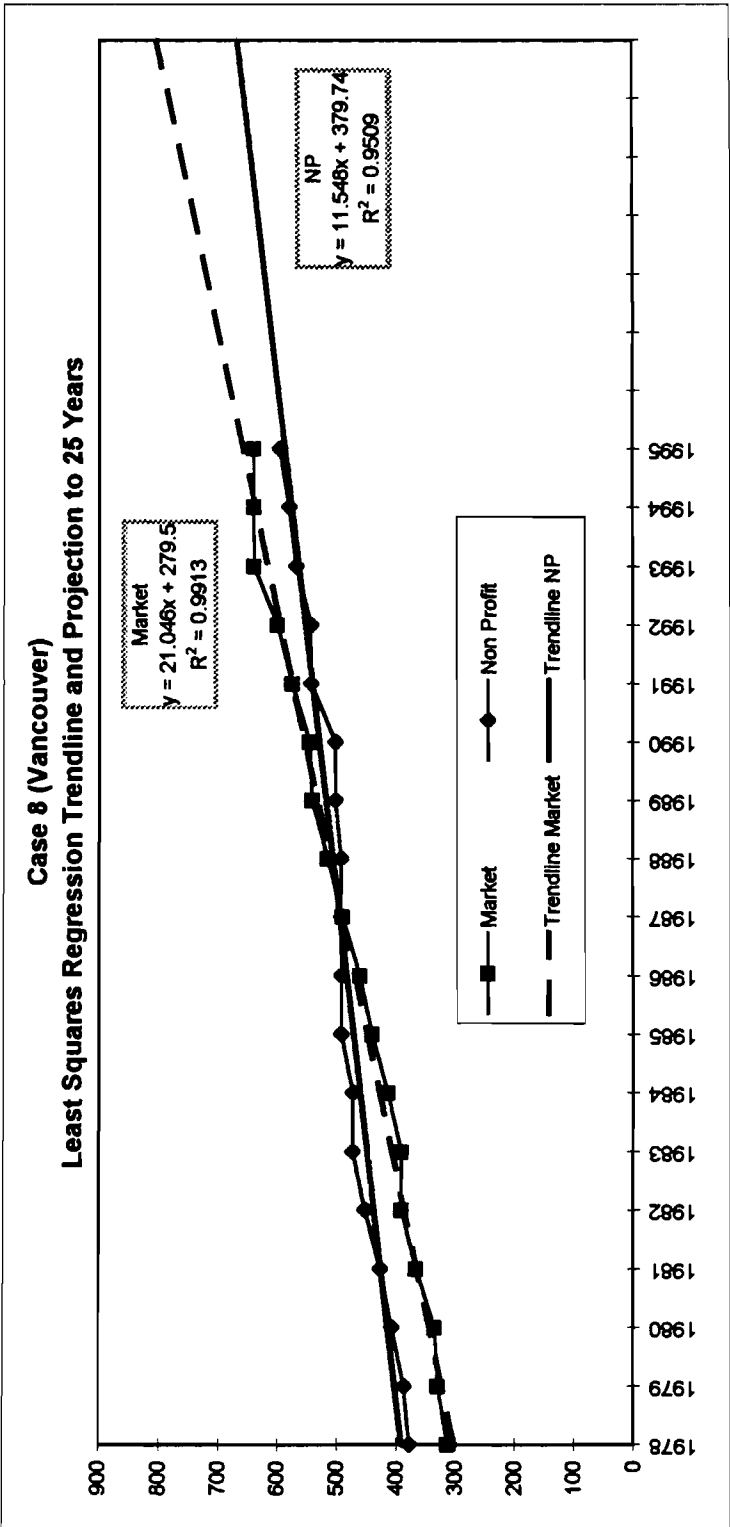
SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

Non Profit	
Regression Statistics	
Multiple R	0.98
R Square	0.95
Adjusted R Square	0.95
Standard Error	14.44
Observations	18

	Coefficients	Standard Error	t Stat
Intercept	379.74	7.10	53.47
X Variable 1	11.55	0.66	17.60

Market Rent	
Regression Statistics	
Multiple R	1.00
R Square	0.99
Adjusted R Square	0.99
Standard Error	10.88
Observations	18

	Coefficients	Standard Error	t Stat
Intercept	279.50	5.35	52.24
X Variable 1	21.05	0.49	42.58



# SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

Non Profit			
Regression Statistics			
Multiple R	0.95		
R Square	0.90		
Adjusted R Square	0.89		
Standard Error	11.10		
Observations	18		

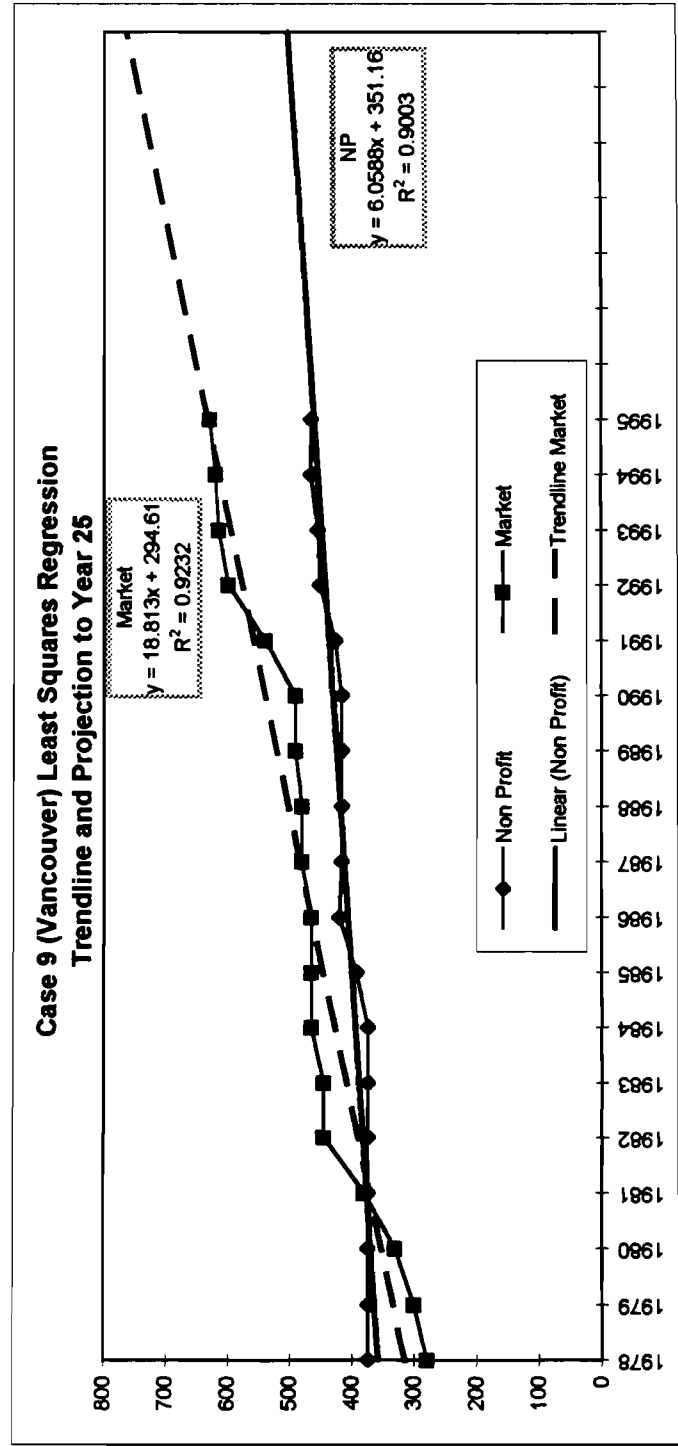
Market			
Regression Statistics			
Multiple R	0.96		
R Square	0.92		
Adjusted R Square	0.92		
Standard Error	29.86		
Observations	18		

Coefficients Standard Error t Stat			
Intercept	351.16	5.46	64.36
X Variable 1	6.06	0.50	12.02

Coefficients Standard Error t Stat			
Intercept	294.61	14.68	20.06
X Variable 1	18.81	1.36	13.87



Case 9 (Vancouver Regression

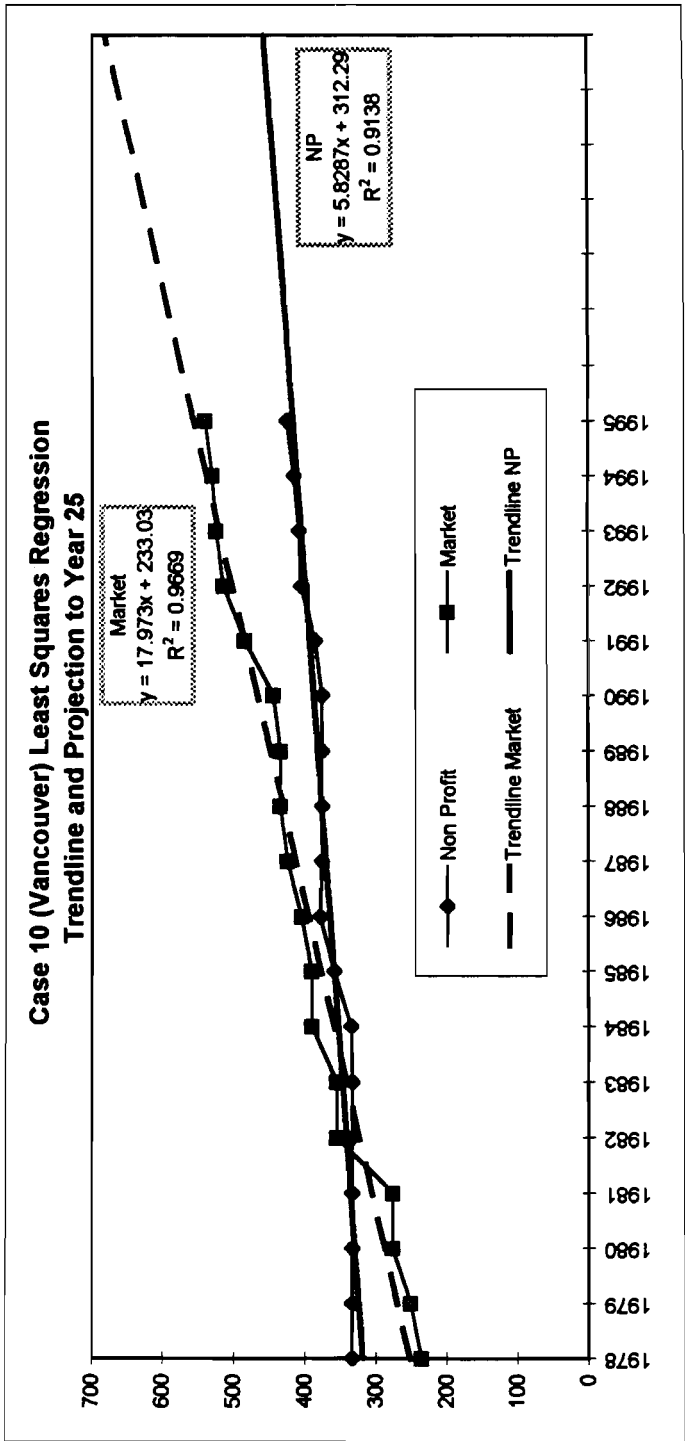
SUMMARY OUTPUT LEAST SQUARES REGRESSION ANALYSIS

Non Profit	
Regression Statistics	
Multiple R	0.96
R Square	0.91
Adjusted R Square	0.91
Standard Error	9.85
Observations	18

Market	
Regression Statistics	
Multiple R	0.98
R Square	0.97
Adjusted R Square	0.96
Standard Error	18.30
Observations	18

	Coefficients	Standard Error	t Stat
Intercept	312.29	4.84	64.48
X Variable 1	5.83	0.45	13.03

	Coefficients	Standard Error	t Stat
Intercept	233.03	9.00	25.89
X Variable 1	17.97	0.83	21.61



Case 10 (Vancouver) Regression

## **APPENDIX D**

### **Qualitative Factors**





## Qualitative Factors

The programs included in the evaluation are the non-profit, rent supplement and urban native housing. Of particular interest to this study is the survey of tenants in non-profit and rent supplement units. While the tenants surveyed are not necessarily from the buildings used in this study it is interesting to look at the responses to the questionnaires.

The CMHC evaluation includes a chapter devoted to the topic "Quality of Life." The analysis of quality of life is based on subjective indicators gathered through a national mail survey of urban social housing residents and a comparative mail survey of 300 private rental market households. Residents were asked their views about their quality of life in their current housing (often in comparison with their previous housing).

In general "the highest overall levels of satisfaction were found in the pre-1986 Non-Profit Housing Programs where nearly two out of three tenants indicated they were very satisfied with fewer than one per cent expressing strong dissatisfaction."<sup>1</sup>

The evaluation also looked at measures of community involvement (e.g., contacts with neighbours (names known, conversations with, neighbours relied on) and on these measures non-profit residents (of the 1973, 78 and 86 programs) had higher levels of community involvement than rent supplement tenants, those in urban native housing or the comparison group. "Non-profit tenants were significantly more sociable with their neighbours than the comparison group based on two of three indicators."<sup>2</sup>

In a summary of the comparisons between private renters and the non-profit tenants (17 items): there was no statistically significant difference on eight items while non-profit tenants reported statistically significant higher results on 9 items.<sup>3</sup> In contrast rent supplement tenants and urban native tenants showed higher results on only 2 (rent supplement) and 4 (urban native) items respectively.

1. CMHC Program Evaluation Division, Urban Social Housing Evaluation (1996).
2. Urban Social Housing Evaluation op. cit.
3. *ibid*, pg. 37.

**Table 1**  
**Results of Statistical Comparisons Indicating**  
**Significant Relationships Between Program and Comparison Group**

	<b>Non-Profit</b>	<b>Rent Supplement</b>	<b>Urban Native</b>
<b>Comparison group used</b>	<b>Private Renters</b>	<b>Private Renters</b>	<b>Aboriginal Households in NP and RS</b>
<b>Dependent variables modeled</b>			
Neighbours' names known	<b>NP higher</b>	No difference	<b>UN lower</b>
Neighbours talk to	No difference	No difference	<b>UN lower</b>
Neighbours relied on	<b>NP higher</b>	No difference	No difference
Membership in community organizations	<b>NP higher</b>	No difference	No difference
Increased use of social services	No difference	No difference	<b>UN higher</b>
Feel more involved in the community	No difference	No difference	No difference
Tenant association member	<b>NP higher</b>	No difference	No difference
Work for Hsg association	<b>NP higher</b>	No difference	N/A
Have made more friends	<b>NP higher</b>	No difference	<b>UN higher</b>
Have more family time	<b>NP higher</b>	<b>RS higher</b>	No difference
Feel more secure	<b>NP higher</b>	<b>RS higher</b>	<b>UN higher</b>
Feel more settled	<b>NP higher</b>	No difference	<b>UN higher</b>
Feel more independent	No difference	No difference	<b>UN higher</b>
<b>Economic enablement indicators (non-seniors only)</b>			
Acquired new skills	No difference	No difference	No difference
More training or education	No difference	No difference	No difference
Got new or better job	No difference	No difference	No difference
Increased income	No difference	<b>RS lower</b>	No difference

Note: Continuous variables were modeled using OLS; categorical response variables using legit regression. All statistical tests are based on 95 per cent two tailed significance. NP and RS were modeled separately and compared with the private renter comparison group. UN was modeled using aboriginal households in the NP and RS programs as a comparison group. RS excludes tenants living in NP. Household characteristics controlled for in the regressions are: household size, household income, age of maintainer, highest education of maintainer or spouse, length of tenure in years and dummy variables for single parent households, female led households, households with a person with a disability and the control dummy. N/A result is indicated where comparable information was not collected for both control and program groups.

**APPENDIX E**  
**The Availability of Affordable Housing**



## The Availability of Affordable Housing

To determine the success of lower income households in accessing these lower rent units a special analysis was undertaken by CMHC in 1994.<sup>1</sup> Using the 1991 census data base, special tabulations were requested to identify the number of rental units by bedroom size in each city and urban centre in Canada renting at or below the average market level (the income cutoff indicator used in the CMHC core housing need model). The same data base was used to identify the number of households that require lower rent units below the same average rent threshold. This analysis found that in all CMA's in the country, for all bedroom/household sizes) there were more units available below Average rent levels than households requiring these units. However, it was also found that there were a significant number of lower income households that were not occupying these units – they were in fact occupied by higher income households.

Aggregating all centres the number of affordable rental units (i.e. below average market rent in each city) in 1991 totaled just over 1.7 million; meanwhile the number of households whose income dictated that they occupy a unit below the average rent level was only 1.25 million. There were some 830,000 households who could afford to pay more than average rent levels without exceeding 30% of income for housing; meanwhile there were 370,000 lower income households that require a below average rent unit but occupied one renting for more than the average in their city (for an appropriate sized unit for that household). In Ottawa and Vancouver, the two cities used in this analysis the percentage of lower income households occupying higher rent units were 15% and 21% respectively, despite the fact that there were significantly more units below average rent levels in the stock in both cities (41,200 and 82,400 respectively). This indicates some constraint in actually accessing lower priced units that already exist.

Another consideration is the weak landlord interest in participating in programs to assist lower income households, particularly those on assistance. The take-up of the rent supplement program in all provinces has been very low. Under the ARP program landlords had an option to contract for rent supplement for up to 25% of the units in a project. While 122,750 units were developed under the ARP program between 1975-78, only 13,012 rent supplements were made over the same period (Canadian Housing Statistics; CMHC administrative data). Under the CRSP program (1982-84), proponents were required to offer 33 per cent of units to provinces for the rent supplement program (a federal provincial cost shared program operated by provinces). Of 24,000 CRSP units committed, only 1,526 (6 per cent) were also contracted under the Rent Supplement Program. This was not entirely a reluctance on the part of landlords. In some cases, units were deemed to be too high quality and high rent and provinces chose not to exercise their option. Under the private Rent Supplement program just over 27,000 private units were contracted between 1971-85. These were typically term contracts with

1. Canada Mortgage and Housing Corporation (1994), *The Private Sector as the Source of Affordable Housing, Social Housing Consultation Working Paper No. 6*. Ottawa.

options for the landlords to renew. By 1992, only 18,765 remained active, implying some disinterest in renewal.

Finally, rents in the private sector change over time and households go on and off assistance. Households benefiting from a shelter allowance will change as will the unit that they occupy. It is likely that the rents on units actually occupied by shelter allowance clients will generally migrate to the median level.

**APPENDIX F**  
**Additional Thanks**





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