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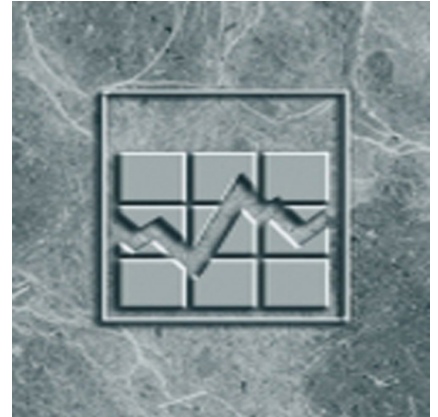
Estimating Homeowners' Expenses on Repairs and Renovations: Recent Changes in Approach

2004

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Household expenditures research paper series

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Executive summary

Since 1987 Statistics Canada has produced estimates of homeowners' expenses on repairs and renovations from two surveys:

- the Survey of Household Spending (SHS), previously called the Family Expenditure Survey (FAMEX), and
- the Homeowner Repair and Renovation Survey (HRRS).

Beginning with the reference year 1996, these estimates were produced annually by both sources.

In recent years there have been concerns about widening the gap between the estimates of repairs and renovations produced by these surveys, and the added response burden in producing these estimates from two sources. Because key users both within and outside Statistics Canada rely on this information, an assessment of the estimates, and the need for two different surveys, was undertaken. The assessment led to the decision to cancel the HRRS, as of the reference year 2003. This report:

- reviews the concepts that these surveys measure;
- examines the estimates produced by each and the differences between them;
- explains why the decision was made to cancel the HRRS and modify the content of the SHS.

1. Introduction

Since 1987 Statistics Canada has produced estimates of homeowners' expenses on repairs and renovations from two surveys:

- the Survey of Household Spending (SHS), previously called the Survey of Family Expenditures (FAMEX), and
- the Homeowner Repair and Renovation Survey (HRRS).

Beginning with the reference year 1996, these estimates were produced annually by both sources.

Repair and renovation data are used by a number of important areas. Within Statistics Canada, users include:

- Income and Expenditure Accounts Division and Input-Output Division, to generate data for the System of National Accounts (SNA); and
- Prices Division, in calculating the Consumer Price Index (CPI).

Key users outside Statistics Canada include Canada Mortgage and Housing Corporation (CMHC) and Finance Canada. The latter, with Income and Expenditure Accounts Division, uses the repairs and renovation information in the housing base for the allocation of the GST/HST between the federal government and the harmonized provinces (Nova Scotia, New Brunswick, and Newfoundland and Labrador).

Since 1996, there have been concerns about widening the gap between the estimates of repairs and renovations produced by the two sources, and the added response burden in producing these estimates from two surveys. Because key users both within and outside Statistics Canada rely on this information, an assessment of the estimates, and the need for two different sources, was undertaken. The assessment led to the decision to cancel the HRRS, as of the reference year 2003. This document summarizes the results of this assessment and explains why this decision was made.

2. The SHS and HRRS: a brief overview of the surveys

To begin, it is useful to briefly describe the two surveys. Both surveys cover private households. Excluded from both are: persons living on Indian Reserves; inmates and chronic care patients living in institutions; military, logging and construction camps; and collective households, such as hotels. Both surveys cover the ten provinces although the SHS also covers the territories every other year.

Since reference year 1997, the SHS has been conducted annually. Prior to that, the survey was known as the Survey of Family Expenditures (FAMEX) and was generally conducted every four years,

for the last time in 1996. The information is collected by personal interview in the respondents' homes. For 2002, from a sample of approximately 21,000 eligible households there was a useable sample size of about 15,000 households, including nearly 10,000 homeowner households.

The SHS questionnaire is extensive and includes sections on household composition, dwelling characteristics, household equipment, a comprehensive list of household expenses, personal income, asset change, financial activity of unincorporated businesses and liabilities. The basic content has remained consistent over the years but the amount of detail has been reduced to lessen response burden. Since the survey covers many topics, the average interview takes approximately two hours. It includes a few questions on repair and renovation expenses. These will be described in more detail later in this report.

The HRRS was introduced for the reference year 1987, to collect detailed annual estimates of repairs and renovation expenses since these estimates were only available on an irregular basis from FAMEX prior to 1996. This survey was a supplement to the Labour Force Survey (LFS), and took place annually for reference years 1987 to 2002, although it was not conducted for 2000. The questions were also part of the Shelter Cost Survey for reference years 1987 and 1990. Interviews were conducted by telephone, taking about 6 minutes for respondents to answer. For 2002, there was a useable sample size of about 18,000 homeowner households.

Statistics from these two surveys were published in separate publications: the SHS data in *Spending Patterns in Canada* (Catalogue 62-202-XIE/XPE) and the HRRS data in *Homeowner Repair and Renovation Expenditure* (Catalogue 62-201-XIB). The key characteristics of the surveys are summarized in Table 1.

TABLE 1 : A comparison of the SHS and HRRS (using 2002 data)		
	SHS	HRRS
Survey type	independent, LFS frame	supplement to the LFS – using 4 of the 6 rotation groups
Universe	private households in the ten provinces (and in the territories every second year)	private homeowner households in the ten provinces
Interview type	personal	telephone
Response type	voluntary	voluntary (but the LFS is mandatory)
Useable sample size	14,704 (total) 9,966 (homeowners)	17,927 (homeowners only)
Average interview length	125 minutes (all sections)	6 minutes
Cost (for the whole questionnaire)	\$5.2 million (excluding cost-recovery)	\$0.2 million
Cost per useable questionnaire (approx.)	\$354	\$11
Questionnaire type	paper and pencil	computer assisted
Questionnaire scope/complexity	detailed questions on all types of household expenses & other topics, including repairs and renovations	detailed questions on homeowners' repairs and renovations

3. The SHS and HRRS: the repair and renovation concepts

In order to understand the reasons for the differences in the estimates it is first necessary to look at the repair and renovations concepts used by the two surveys. These concepts, which for the most part are similar, are discussed below.

3.1 Total repairs and renovations

Total repairs and renovations includes the following categories:

- repairs and maintenance (see 3.1.1); and
- alterations and improvements (see 3.1.2), which include:
 - o additions, renovations and alterations (see 3.1.2.1); and
 - o replacement and new installations of equipment and fixtures (see 3.1.2.2).

The SHS asks questions on homeowners' expenses for repairs and renovations if the household owned and occupied any dwellings during the reference year. In separate sections of the SHS questionnaire, there are also similar questions for renters and for owners of vacation homes. One of the key differences between the surveys is that the HRRS collected expenses only for homeowners who owned their dwelling at the time of the survey. For that reason, when comparing the data from the SHS and HRRS, only homeowners' expenses will be considered.

The HRRS always asked respondents to split repair and renovation costs into those associated with:

- contracted work (labour only or labour plus materials if billed together) and
- materials purchased separately.

Although FAMEX used to do this, beginning in 1996, FAMEX, and then the SHS, asked only for total repair and renovation expenses.

Expenses reported include:

- those relating to the property, building(s) and fixtures on the property associated with the dwelling, as long as they were not rented to others or used for business;
- out-of-pocket costs expenses (i.e. deductible) if insurance settlements were used to repair or replace property

Excluded are:

- expenses for the common part of condominiums, such as the roof.

3.1.1 Repairs and maintenance

These expenses are made to keep an existing structure or piece of equipment in good working condition and appearance and to maintain an "as new" appearance. Repairs made to broken, damaged or malfunctioning components of the structure or equipment are included. Painting, wallpapering, equipment service contracts and cleaning of equipment are included but housekeeping costs such as rug cleaning, window washing, eavestrough cleaning and snow removal are excluded.

One conceptual difference between the surveys is that the cost of complete re-roofing was included in this category for the HRRS but not for the SHS, which includes it with additions, renovations and alterations. (FAMEX included re-roofing in repairs and maintenance.) For purposes of comparing the data, complete re-

roofing has been included with additions, renovations and alterations for both surveys.

3.1.2 Alterations and improvements

3.1.2.1 Additions, renovations and alterations

These are often major projects. *Additions* include structural extensions or additions to the property such as rooms, decks, garages and carports, garden sheds, swimming pools, fences, patios, driveways and major landscaping. *Renovations and alterations* expenses are for work done to upgrade the property to acceptable living or building standards, rearrange interior space, and modernize existing facilities to suit changing needs without changing the type of occupancy. Some examples are remodeling rooms, adding or replacing doors and windows, renovating exterior walls, upgrading insulation, and adding eavestroughs. The cost of plumbing, electrical and heating equipment, built-in appliances, lumber, hardware, paint, wallpaper, floor coverings, patio stones, asphalt and shingles is included if it is part of an addition or renovation project. The finishing of new homes is also included.

As mentioned previously, complete re-roofing expenses are included here for purposes of comparing the data, even though the HRRS asked for it with repair and maintenance expenses.

3.1.2.2 Replacement and new installations of equipment and fixtures

This category has two components. Replacement of equipment occurs when the installation of equipment replaces an existing unit. This could mean the upgrading of equipment to a higher quality or the conversion of equipment from one type to another (e.g., replacing an oil furnace with a gas furnace). New installations of equipment occur when the equipment did not exist before (e.g., adding central air conditioning) or when the new equipment was installed in addition to the equipment that exists on the property.

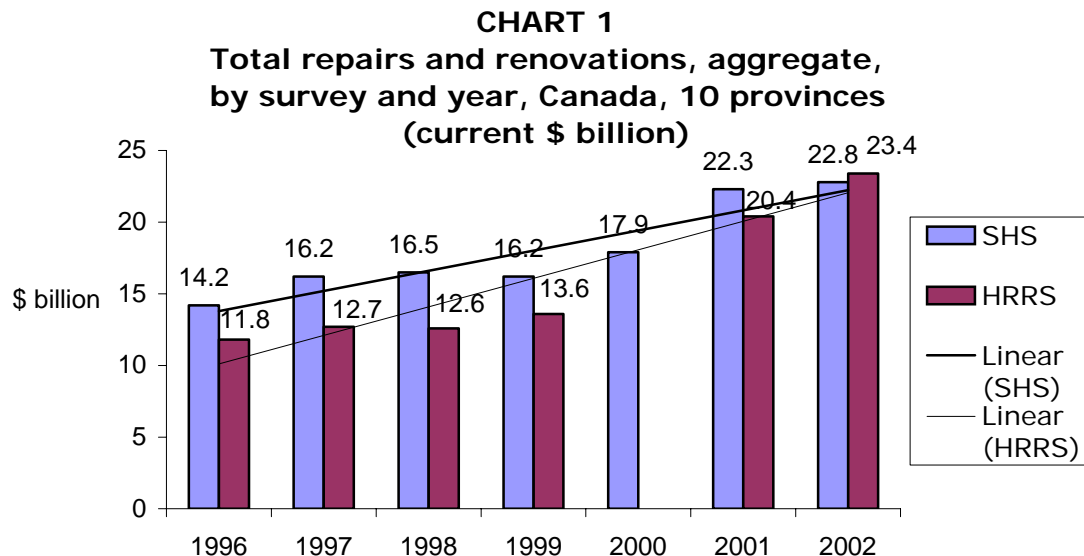
It is important to distinguish between replacement and new installations of equipment and fixtures. Both surveys have collected separate estimates of these items. Income Statistics Division and Prices Division have grouped replacements with repairs and maintenance because they have considered them to be current expenses. They have also grouped new installations with additions, renovations and alterations and treated them as capital expenses. On the other hand, the SNA has included both

replacements and new installations with alterations and improvements. This paper will also include replacement and new installations of equipment and fixtures with alterations and improvements.

4. The SHS and HRRS: the estimates

In this section, the estimates produced by the two surveys will be compared and differences identified and discussed. As stated earlier, these estimates are for homeowners only. To match the HRRS estimates as closely as possible for a given year, the SHS estimates are for households in the ten provinces reporting home ownership as of December 31.

Total repairs and renovations: Aggregate expenses have generally been higher for the SHS than the HRRS. From 1996 to 1999, the SHS's repair and renovation expenses exceeded those of the HRRS by an average of 25%. However, the magnitude of the difference dropped considerably in 2001, to 9% higher for SHS. In 2002 the SHS estimate was very close to that of the HRRS, and was, for the first time, slightly lower (by 3%). (See Chart 1 and Appendix A, Table A1.)



The percentage of households reporting repairs and renovations expenses was also higher for the SHS than the HRRS from 1996 to 1999, by about nine percentage points. However, in 2001 the pattern reversed; fewer households reported these expenses for the SHS than for the HRRS (by 4 percentage points in 2001 and 3 in 2002). Although the percentage reporting for the SHS stayed constant from 2000 to 2001, the percentage reporting for the HRRS jumped eleven

percentage points, possibly because of a change in the collection method; in that year there was a move to computer-assisted telephone interviewing, which was done from the regional offices.

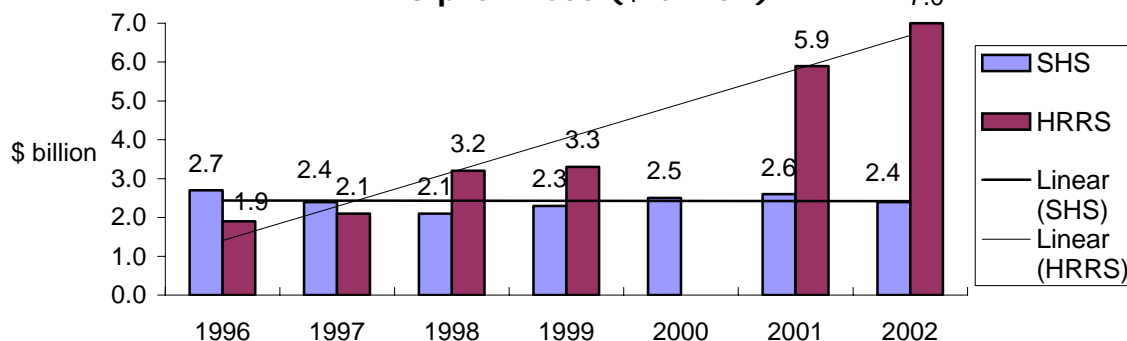
The average expense per household has also been higher for the SHS than the HRRS. However, in 2002 the difference was relatively small, just 3%. From 1997 to 2001 the difference between them ranged from 10% to 22%.

To further explore the differences in the amounts reported we will now look at the estimates for the two main components of total repairs and renovations: repairs and maintenance, and alterations and improvements (see definition under Concepts).

Repairs and maintenance: Repairs and maintenance expenses constitute a relatively small percentage of total repair and renovation expenses, although there are important differences in this regard between the two surveys. These expenditures have accounted for a growing percentage of the total repair and renovation expenditures for the HRRS from 1997 to 2002: it reached almost 30% in 2002. For the SHS, on the other hand, these expenses were shrinking as a proportion of the total, to just over 10% in 2002.

For the SHS, these expenses have remained quite stable over the years. In 1998 there was a large increase in the repair and maintenance estimates for the HRRS, when the order of the questions was changed and these questions were put before those for alterations and improvements. Even larger jumps in these amounts followed in 2001 and 2002, when the HRRS began to do computer-assisted telephone interviewing from the regional offices. The result of these increases in the estimates for the HRRS was that, by 2002, aggregate expenses for repairs and maintenance for the SHS were 66% lower than those of the HRRS. (See Chart 2 and Appendix A, Table A2.)

CHART 2
Repairs and maintenance (excluding re-roofing),
aggregate, by survey and year, Canada,
10 provinces (\$ billion)

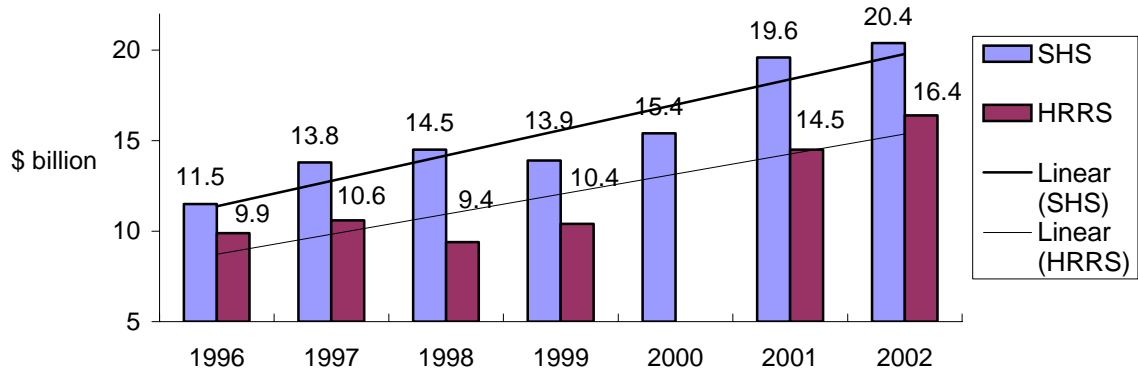


The aggregate expenses in this category are lower for the SHS because the percentage of households reporting these expenses has, especially in recent years, been much lower for that survey. In 2002, 45% of households reported these expenses to the SHS, compared with 66% for the HRRS.

The average expense per household reporting repairs and maintenance has also been much lower for the SHS in recent years, when the amounts reported to the HRRS jumped. In 2002, the average per household for the SHS was \$700, 49% lower than for the HRRS. In 1998 and 1999 the average for the SHS was only about 20% lower than for the HRRS.

Alterations and improvements: Expenses for alterations and improvements constitute the largest proportion of repair and renovation expenditures, and were significantly higher for the SHS. In 2002, aggregate expenses for alterations and improvements for the SHS were \$20.4 billion, 25% more than for the HRRS. This difference is in fact lower than it had been in previous years: from 1997 to 2001 it ranged from 31% to 54%. (See Chart 3 and Appendix A, Table A3.)

CHART 3
Alterations and improvements (including re-roofing),
aggregate, by survey and year, Canada,
10 provinces (current \$ billion)



For 2002, the aggregate estimate for additions, renovations and alterations, the major component of alterations and improvements was \$15.2 billion for the SHS, or 23% above the HRRS estimate. The other component, replacement and new installations of equipment and fixtures, was \$5.2 billion for the SHS, 16% above the HRRS estimate.

The percentage of households reporting expenses for alterations and improvements was quite close in recent years; the difference in 2001 and 2002 was 2 and 4 percentage points, respectively. Prior to that, the percentage reporting this expense to the SHS was considerably higher than to the HRRS.

The average expense per household reporting alterations and improvements was, again, higher for the SHS than the HRRS, by 19% in 2002.

To summarize then, the aggregate estimates for total repairs and renovations have, for the most part, been higher for the SHS than the HRRS, although in the most recent year in which both surveys were conducted (2002) the estimates were quite close. However, a significant jump in recent years in the amounts reported to the HRRS for repairs and maintenance has meant that, by 2002, this estimate was much lower for the SHS than for the HRRS. On the other hand, the estimates for alterations and improvements – the major component of repairs and renovations – have been consistently higher for SHS than those of the HRRS.

5. The SHS versus the HRRS: possible causes of the difference in the estimates

Given that the concepts used by the surveys are similar, why are the estimates produced by the SHS and HRRS not closer? In this section we look at some of the differences in the content and methods, the changes that have taken place over time and some of the quality measures, in an attempt to explain this.

Balance edit

Careful edit and imputation procedures are used for both the SHS and HRRS. However, the SHS makes use of a balance edit that relates income, expenditures and changes in assets and debts to ensure that expenses reported are reasonable, and that significant amounts are not missing. This edit is done during collection, and again during processing. This helps to maintain the quality of the SHS data. It is likely that this balance edit is more useful in identifying problems with respect to alterations and improvements, as these are generally larger amounts. Because expenditures for repairs and maintenance are more often smaller, the balance edit would probably not catch missing expenses. This makes the content of the questionnaire particularly important in ensuring the comprehensiveness of repair and maintenance estimates.

The HRRS can not use a balance edit, as it does not collect all the information required to perform it. It therefore does not have a tool for identifying unreported amounts, which might help to explain why estimates for alterations and improvements are lower for the HRRS than the SHS.

Questionnaire changes

The content and the ordering of the questions on the HRRS and SHS have undergone several changes in recent years. These changes are summarized in Appendix B. Some of them help to explain the differences and changes in the estimates from the two surveys.

Reduction in content from FAMEX 1996 to SHS 1997: There was a major reduction in the level of detail between the 1996 FAMEX questionnaire and the 1997 SHS questionnaire. Table 2 summarizes the changes in the Canada level estimates between the two years.

TABLE 2: FAMEX 1996 versus SHS 1997, Canada, 10 provinces					
	FAMEX (SHS) *				HRRS
	1996	1997	Abso- lute diff. 1997- 1996 **	% diff. 1997- 1996 **	% diff. 1997- 1996 **
Homeowner households (mil.)	6.9	7.2	0.3	4	2
Aggregate expenses (\$ bil.)					
Total repairs & renovations	14.2	16.2	2.0	14	7
Repairs & maintenance	2.7	2.4	-0.3	-12	11
Alterations & improvements	11.5	13.8	2.3	20	6
Additions, renovations	8.8	11.4	2.6	30	7
Replacements	1.5	1.6	0.1	4	10
New installations	1.2	0.8	-0.3	-29	-4
% of households reporting					
Total repairs & renovations	79	74	-4	-6	2
Repairs & maintenance	63	47	-17	-26	3
Alterations & improvements	53	52	-1	-2	2
Additions, renovations	37	40	3	8	3
Replacements	22	17	-5	-24	8
New installations	12	8	-4	-34	-7
Average per rep. hhld. (\$)					
Total repairs & renovations	2,600	3,000	400	16	3
Repairs & maintenance	600	700	100	15	6
Alterations & improvements	3,100	3,700	500	17	2
Additions, renovations	3,400	3,900	500	16	2
Replacements	1,000	1,300	300	31	0
New installations	1,300	1,400	100	5	1

NOTES: * Estimated for households reporting homeownership Dec. 31.

** Differences were calculated using unrounded data.

Reducing the level of detail in the SHS questionnaire appears to have caused a significant drop in the percentage of households reporting repairs and maintenance expenses. The detailed questions probably had helped to jog the respondents' memories for these less expensive items. The change does not seem to have affected the response for the more costly items, such as additions and renovations. Reducing

the level of detail also seems to have increased the average expense per reporting household. Using detailed questions may lead to more precise answers, but using broad questions (which cover a variety of expense items) may elicit answers that are rounded off and somewhat inflated.

Re-ordering of the HRRS questions for 1998: The order of the questions was the same for both surveys prior to reference year 1998. Respondents were asked about their expenses for major projects before they were asked for their repairs and maintenance expenses. For reference year 1998, the HRRS questionnaire was changed, moving the questions on repairs and maintenance expenses before those on other expenses. This change was made because more households report repairs and maintenance expenses than other expenses. Table 3 summarizes the changes in the Canada level estimates between the two years.

Changing the order of the HRRS questionnaire seems to have had a major effect on the aggregate estimate for repairs and maintenance, which grew 49% (or \$1.1 billion). This contrasts with the SHS estimate, which recorded a decline of 13%. The percentage of households reporting expenses and the average expense per reporting household both showed large increases for the HRRS. From 1997 to 1998, the percentage of HRRS households reporting repairs and maintenance expenses jumped five percentage points to 57%. Over the same period, there was no change in the percentage reporting for the SHS. The average expense per reporting household grew 34% for the HRRS while it fell 12% for the SHS.

Another reason why changing the order of the questions may have had an impact on the estimates is the respondents are told that expenses must not be double-counted, that a given expense must be recorded in only one category. Certain activities, such as painting, are considered to be repair and maintenance projects. The same activities can also be done as part of addition or renovation projects. The HRRS expenses for repairs and maintenance increased \$1.1 billion for 1998 while expenses for additions and renovations decreased by the same amount. This did not happen for the SHS (which asks for repairs and maintenance expenses last). It is possible, therefore, that respondents report their expenses for activities such as painting in the first section in which they think it could be applicable.

TABLE 3: HRRS 1997 versus HRRS 1998, Canada, 10 provinces					
	HRRS				SHS*
	1997	1998	Abso- lute diff. 1998- 1997 **	% diff. 1998- 1997 **	% diff. 1998- 1997 **
Homeowner households (mil.)	7.4	7.5	0.2	2	2
Aggregate expenses (\$ bil.)					
Total repairs & renovations	12.7	12.6	-0.1	-1	2
Repairs & maintenance	2.1	3.2	1.1	49	-13
Alterations & improvements	10.6	9.4	-1.2	-11	5
Additions, renovations	8.2	7.1	-1.1	-14	-1
Replacements	1.6	1.5	-0.1	-4	48
New installations	0.8	0.8	0.0	0	0
% of households reporting					
Total repairs & renovations	66	67	0	1	-1
Repairs & maintenance	52	57	5	9	0
Alterations & improvements	43	41	-2	-6	-2
Additions, renovations	30	28	-2	-7	-13
Replacements	19	17	-2	-12	36
New installations	8	8	0	-1	2
Average per rep. hhld. (\$)					
Total repairs & renovations	2,600	2,500	-100	-4	2
Repairs & maintenance	600	700	200	34	-14
Alterations & improvements	3,300	3,100	-200	-7	5
Additions, renovations	3,700	3,300	-300	-9	12
Replacements	1,100	1,200	100	6	9
New installations	1,300	1,300	0	-1	-4

NOTES: * Estimated for households reporting homeownership Dec. 31.

** Differences were calculated using unrounded data.

Change in collection methods

The move to computer-assisted telephone interviewing from the regional offices for the HRRS in 2001 also appears to have had an impact on the estimates. Table 4 summaries the changes in the Canada level estimates.

TABLE 4: HRRS 1999 versus HRRS 2001, Canada, 10 provinces					
	HRRS				SHS*
	1999	2001	Abso- lute diff. 2001- 1999 **	% diff. 2001- 1999 **	% diff. 2001- 1999 **
Homeowner households (mil.)	7.5	7.9	0.4	5	4
Aggregate expenses (\$ bil.)					
Total repairs & renovations	13.6	20.4	6.8	50	37
Repairs & maintenance	3.3	5.9	2.7	82	15
Alterations & improvements	10.4	14.5	4.2	40	41
Additions, renovations	7.8	10.7	2.9	37	37
Replacements	1.6	2.4	0.8	47	69
New installations	0.9	1.5	0.5	55	17
% of households reporting					
Total repairs & renovations	65	76	11	17	0
Repairs & maintenance	55	66	11	20	-2
Alterations & improvements	40	49	10	25	5
Additions, renovations	27	32	5	17	2
Replacements	17	23	6	34	19
New installations	8	13	5	68	-11
Average per rep. hhd. (\$)					
Total repairs & renovations	2,800	3,400	600	22	31
Repairs & maintenance	800	1,100	300	44	15
Alterations & improvements	3,500	3,700	200	7	28
Additions, renovations	3,800	4,300	400	11	29
Replacements	1,300	1,300	0	4	11
New installations	1,700	1,500	-200	-12	26

NOTES: * Estimated for households reporting homeownership Dec. 31.
 ** Differences were calculated using unrounded data.

Repairs and maintenance expenses for the HRRS increased by 82%, compared with 15% for the SHS. There was a large increase in the percentage of HRRS households reporting repairs and maintenance expenses (20%) and a very substantial increase in the average per household reporting (44%). The repairs and maintenance questions are asked first and they are relatively simple to answer. With centralized computer-assisted telephone interviewing from the regional offices, the interviews from the regional offices are closely monitored, so the interviewers may be getting improved answers to these questions.

Response rate

As shown in Table 5, prior to 1999 the response rate for the HRRS was over 80% and considerably higher than that of the SHS. There are several possible reasons for this. Although the HRRS was a voluntary survey, it was a supplement to a mandatory survey (the Labour Force Survey). Because the SHS covers many expenditure items, average interview length is about 2 hours, much longer than the interview for the HRRS (6 minutes in 2002).

TABLE 5: Response rates, by survey and year (%)		
Year	SHS	HRRS
1992	74	85
1996	77	86
1997	76	85
1998	76	82
1999	73	79
2000	70	N/A
2001	76	68* (76 for CATI cases)
2002	70	72

* Rate including households requesting a personal interview (by CAPI), although, due to budgetary restraints, no attempt was made to reach them. Only phone interviewing was done (by CATI); the response rate for this group was 76%.

However, the response rate for the HRRS began to drop in 1998 and in 2002 the rates for the two surveys were almost identical. The HRRS therefore lost one of its advantages over the SHS. Response rates for the HRRS, an LFS supplement, have tended to decline because interviewers might have been concerned about burdening households with the LFS supplements. Given the importance of the LFS, interviewers may have been more concerned about obtaining a high response rate for that survey.

Coefficients of variation

Expenses for repairs and renovations can vary considerably. They include both small expenses for simple repairs, and large expenses for major projects. Many people report expenses for smaller projects but few have major expenses. This makes verifying and weighting the data somewhat difficult. Some estimates need to be suppressed because of the low number of reporting households, or the high coefficients of variation (CVs). However, as Table 6 shows, the CVs for the two surveys for 2002 were fairly close, at the Canada level.

TABLE 6: Coefficients of variation (CVs) by expenditure, Canada, 2002		
	SHS	HRRS
Total repairs and renovations	3.36	2.41
Repairs and maintenance (excluding re-roofing)	3.94	2.31
Repairs, maintenance and replacement (excluding re-roofing)	3.83	..
Repairs and maintenance (including re-roofing)	..	2.26
Alterations and improvements (including re-roofing)	3.71	3.11
Additions, renovations and alterations (including re-roofing)	4.46	3.89
Additions	..	6.16
Renovations and alterations (excluding re-roofing)	..	5.85
Replacements	5.36	3.48
New installations	9.05	4.81

.. not available

6. The System of National Accounts: major user of the data

As noted earlier, the System of National Accounts (SNA) uses repairs and renovations data to produce estimates of repairs and maintenance, and estimates of alterations and improvements. They are components of the expenditure-based gross domestic product (GDP) of the Income and Expenditure Accounts. A detailed explanation of the requirements of the SNA can be found in Appendix C.

The SNA requires estimates of the total cost of repairs and maintenance and the total cost of alterations and improvements. They also require percentage splits between the cost of contract work and the cost of materials purchased separately for these two totals. Input-Output Division needs the detailed questions to assist them in commodity analysis.

The SHS and HRRS have been a key source of this information. In addition, other sources are also used by the SNA as indicators of repair and renovation expenses, and to adjust the data, if necessary. These other sources are indicated in Appendix C.

Prior to the 1997 reference year, the HRRS was the primary source used to estimate homeowners' expenditures on alterations and improvements. As of 1997, the SHS became the main source.

Despite the change to the use of the SHS data, concerns about the difference in the estimates between the two surveys and the difference in the annual growth rates in the two sources have persisted. These

concerns, and the repair and renovation detail required by the SNA, have been taken into account both in assessing these two data sources and in making decisions about the best way to generate these estimates in the future.

7. Options for generating repair and renovation estimates

In 2003, those responsible for the SHS and HRRS were faced with the need to decide on the best approach to producing repair and renovation estimates, given the gap between the estimates produced by the two surveys and the concerns of some of the major users of the data.

The first step in making this decision was to evaluate the strengths and weaknesses of each of the surveys as a means of generating estimates of repair and renovation expenditures. These strengths and weaknesses are summarized in the table below:

Survey	Strengths	Weaknesses
SHS	Possible to incorporate a balance edit, an important quality control measure.	As of 1997, detail collected has been very limited, and has not been sufficient to meet the needs of some data users.
	Response burden minimized as these questions are asked with a comprehensive list of questions on household expenditures.	The SHS questionnaire covers many topics so there is less time for interviewer training on repairs and renovations.
HRRS	Questions are more detailed, which appears to produce higher quality estimates. Detail better meets the needs of the SNA (collects cost of both labour and materials).	Although the HRRS can be completed in a relatively short time (6 minutes on average) it constitutes a second measure of expenditures on repairs and renovations, given that some information on these costs must be included in the SHS, which covers all household expenditures.
	The HRRS is a cost-efficient survey because it is a supplement to the LFS.	Significant changes in the estimates as of 1998, following the reordering the questions on HRRS, have called the quality of the data into question.

In the most recent years in which both surveys were conducted, they had similar response rates and produced comparable CVs; in that sense one survey did not have an advantage over the other.

In light of the information presented above, several options were considered:

- 1. *Keep the two surveys as they are.*** The status quo is confusing to users because the two surveys produce very different estimates. As well, maintaining two surveys creates an added response burden. **This option was not recommended.**
- 2. *Drop the HRRS and keep the SHS as it is.*** This option would save about \$0.2 million, reduce respondent burden and ease the workload in the regional offices. There would be a loss of detailed data because the SHS has only three broad questions on homeowners' repairs and renovations. With no detailed questions, some respondents might forget certain expenses for repairs and maintenance. Others might overestimate, as the broad questions include a mixture of expenses. The split between the cost of contract work and materials purchased would not be available for the SNA. **This option was not recommended.**
- 3. *Drop the HRRS and change the SHS content.*** If the HRRS were dropped, the \$0.2 million in savings could be used to *add questions to the SHS*. These additional questions are intended to improve the quality of the estimates and to better meet the needs of major users such as the SNA. Although response burden would increase slightly for the SHS, in total it is expected that dropping the HRRS would reduce this burden. **This option was recommended.**

8. Action taken

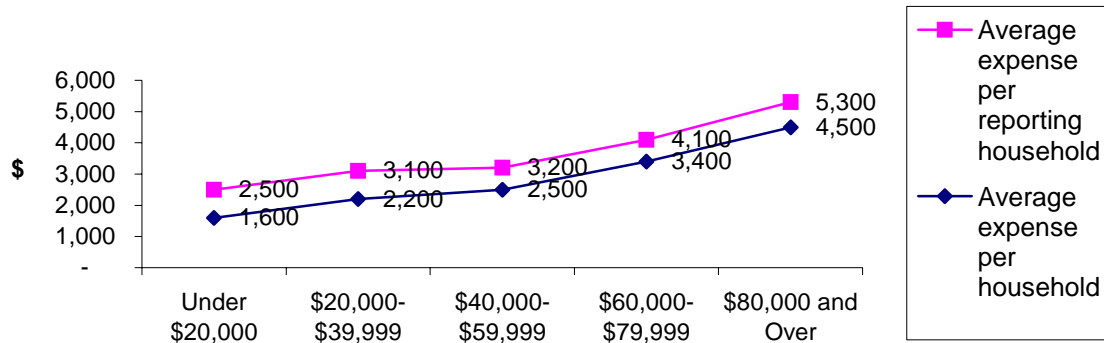
In August 2003, senior management made the decision to accept option 3 above and to cancel the HRRS program, making the SHS the sole source of estimates of homeowners' expenses on repairs and renovations. Consequently, the HRRS was not conducted for reference year 2003.

In early 2004, interviewing took place for the 2003 SHS. The repairs and renovations section of the 2003 questionnaire was unchanged from 2002; there was not enough time to revise it.

The LFS sampling frame has also been updated so the SHS will include more high-income households for reference year 2004 and especially for 2005. This is important because high-income households spend

more money on repairs and renovations than other households. (See Chart 4.)

CHART 4
HRRS average homeowner's expense for total repairs and renovations, by household income group, Canada, 10 provinces, 2002



For the 2004 SHS, the repairs and renovations section of the questionnaire dealing with owned principal residences was completely redesigned and given a new title, "Repairs and Improvements". This was done, as mentioned previously, to improve the quality of the estimates, and better meet the needs of the SNA. There are now fourteen questions with two columns for the expenses, one column for repairs and maintenance, and one for improvements and alterations. The added detail should improve the estimates, particularly for smaller expenditures which may otherwise be forgotten and which might not be detected with the balance edit (e.g., those for repairs and maintenance). Increases in the HRRS estimates for repairs and maintenance in 1998 and 2001 when the order of the questions and the collection methods changed suggest that prompting respondents by asking more questions should result in better recall of these expenses.

The split between replacements and new installations of built-in equipment, appliances and fixtures was dropped. A review of the treatment of these items by Statistics Canada and other countries led to the conclusion that replacements and new installations should both be considered as capital expenses. This decision will affect the estimates published by Income Statistics Division and Prices Division. It will not affect the SNA, which includes both of these items with alterations and improvements.

The following table provides an outline of the questions which will be asked for SHS 2004:

SHS 2004, Repairs and improvements of owned principal residences		
	Repairs and maintenance	Improvements and alterations
1. Structural additions or extensions (e.g., rooms, garages, porches, decks)		
2. Remodelling of rooms		
3. Fences, driveways, patios, swimming pools, major landscaping		
4. Roofs and eavestroughing		
5. Exterior walls (e.g., siding, chimneys)		
6. Windows and doors		
7. Painting and wallpapering		
8. Interior walls and ceilings		
9. Hard surface flooring and wall-to-wall carpeting		
10. Plumbing fixtures and equipment		
11. Heating and air conditioning equipment		
12. Electrical fixtures and equipment		
13. Built-in appliances		
14. Other		

The question flow was designed to help interviewers and respondents to systematically cover the various components of the homeowner's house and property. Test interviews were conducted on Statistics Canada volunteers.

Interviewers will continue to ask for the total cost for each question on the 2004 SHS. The SHS questionnaire will be modified again for 2005, to obtain amounts for both contract work and materials purchased separately, for each of the questions. This will be done to meet the needs of the SNA.

By dropping the HRRS and revising the content of the SHS there will no longer be two often different estimates for repairs and renovations. Although some detail will be lost, the needs of the major data users will be met with the revised SHS.

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APPENDIX A: Detailed tables from the SHS and HRRS, 1992-2002

TABLE A1: Total repairs and renovations, Canada, 10 provinces						
	Estimates		SHS- HRRS diff. **	% diff. SHS- HRRS **	Annual growth rate	
	SHS*	HRRS			SHS	HRRS ***
Aggregate expenses (\$ bil.)						
1992	13.1	12.5	0.6	5	-	5
1996	14.2	11.8	2.3	19	-	0
1997	16.2	12.7	3.5	28	14	7
1998	16.5	12.6	4.0	32	2	-1
1999	16.2	13.6	2.6	19	-2	8
2000	17.9	N/A	N/A	N/A	10	23
2001	22.3	20.4	1.8	9	24	23
2002	22.8	23.4	-0.6	-3	2	15
% of households reporting						
1992	N/A	70	N/A	N/A	-	1
1996	79	65	14	22	-	-2
1997	74	66	8	13	-6	2
1998	74	67	7	10	-1	1
1999	72	65	7	11	-2	-2
2000	72	N/A	N/A	N/A	0	8
2001	72	76	-4	-5	0	8
2002	73	76	-2	-3	2	-1
Average per rep. hhd. (\$)						
1992	N/A	2,700	N/A	N/A	-	2
1996	2,600	2,500	100	3	-	1
1997	3,000	2,600	400	15	16	3
1998	3,000	2,500	500	22	2	-4
1999	3,100	2,800	300	10	1	11
2000	3,300	N/A	N/A	N/A	8	10
2001	4,000	3,400	600	19	22	10
2002	4,000	3,800	100	3	-1	13

NOTES: * Estimated for households reporting homeownership Dec. 31.
 ** Differences were calculated using unrounded data.
 *** The 2000 and 2001 rates were annualized from the 2001/1999 change.

**APPENDIX A: Detailed tables from the SHS and HRRS, 1992-2002
(cont.)**

TABLE A2: Repairs and maintenance (excluding re-roofing), Canada, 10 provinces								
	Estimates		SHS- HRRS diff. **	% diff. SHS- HRRS **	Annual growth rate		Repairs and maintenance as % of total	
	SHS *	HRRS			SHS	HRRS ***	SHS	HRRS
Aggregate expenses (\$ bil.)								
1992	2.3	1.9	0.4	19	-	N/A	17	15
1996	2.7	1.9	0.8	39	-	N/A	19	16
1997	2.4	2.1	0.2	11	-12	11	15	17
1998	2.1	3.2	-1.1	-35	-13	49	12	25
1999	2.3	3.3	-1.0	-29	11	2	14	24
2000	2.5	N/A	N/A	N/A	9	35	14	N/A
2001	2.6	5.9	-3.3	-55	6	35	12	29
2002	2.4	7.0	-4.7	-66	-9	19	10	30
% of households reporting								
1992	N/A	N/A	N/A	N/A	-	N/A	-	-
1996	63	50	13	26	-	N/A	-	-
1997	47	52	-5	-10	-26	3	-	-
1998	46	57	-10	-18	0	9	-	-
1999	49	55	-6	-11	5	-3	-	-
2000	48	N/A	N/A	N/A	-1	10	-	-
2001	48	66	-18	-28	-1	10	-	-
2002	45	66	-21	-32	-6	0	-	-
Average per rep. hhld. (\$)								
1992	N/A	N/A	N/A	N/A	-	N/A	-	-
1996	600	500	100	16	-	N/A	-	-
1997	700	600	100	26	15	6	-	-
1998	600	700	-100	-20	-14	34	-	-
1999	600	800	-100	-19	7	5	-	-
2000	700	N/A	N/A	N/A	7	20	-	-
2001	700	1,100	-400	-37	4	20	-	-
2002	700	1,300	-600	-49	-5	17	-	-

NOTES: * Estimated for households reporting homeownership Dec. 31.
 ** Differences were calculated using unrounded data.
 *** The 2000 and 2001 rates were annualized from the 2001/1999 change.

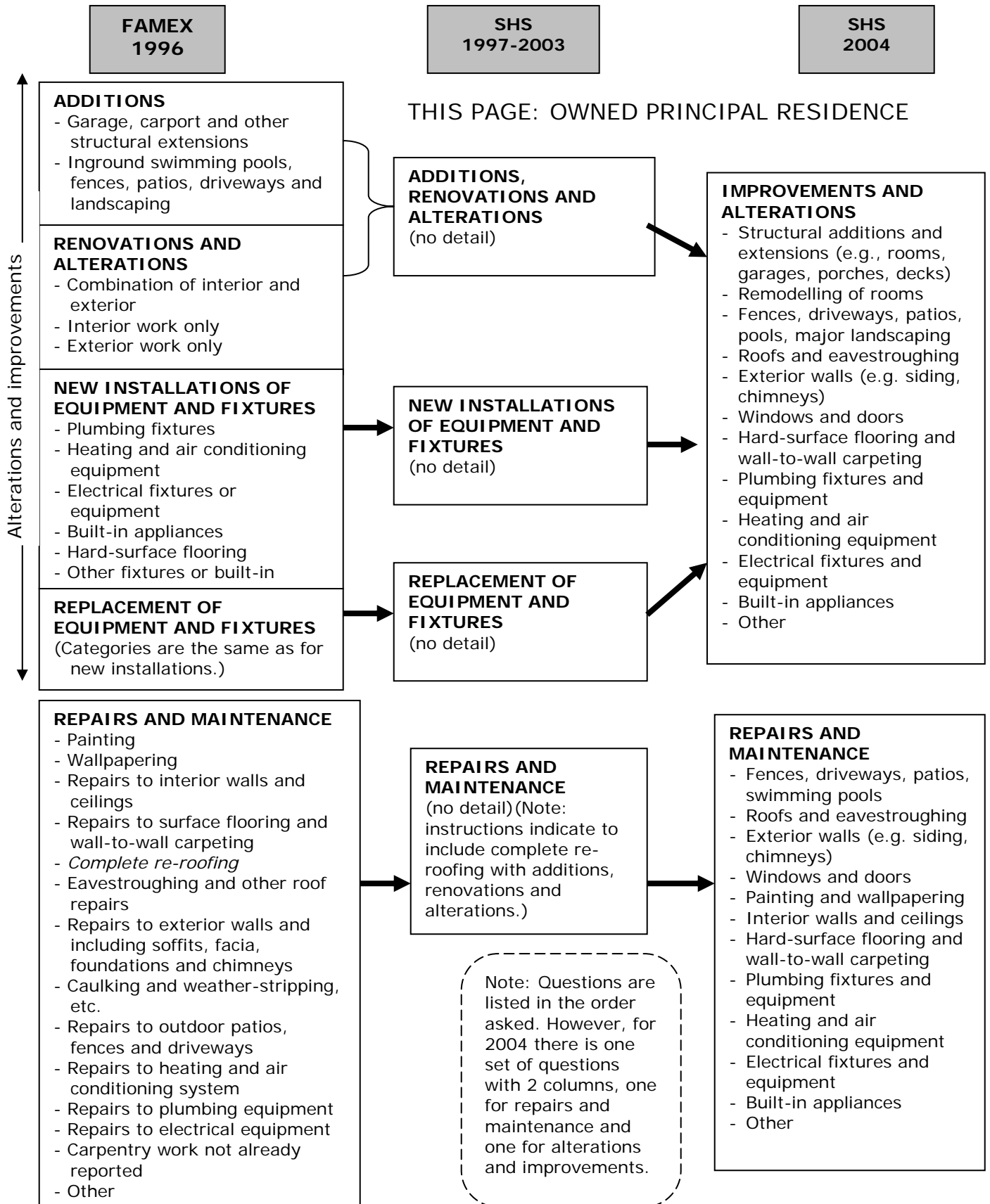
**APPENDIX A: Detailed tables from the SHS and HRRS, 1992-2002
(concluded)**

TABLE A3: Alterations and improvements (including re-roofing), Canada, 10 provinces								
	Estimates		SHS- HRRS diff. **	% diff. SHS- HRRS **	Annual growth rate		Alterations and improvements as % of total	
	SHS*	HRRS			SHS	HRRS ***	SHS	HRRS
Aggregate expenses (\$ bil.)								
1992	10.8	10.6	0.2	2	-	N/A	83	85
1996	11.5	9.9	1.6	16	-	N/A	81	84
1997	13.8	10.6	3.3	31	20	6	85	83
1998	14.5	9.4	5.1	54	5	-11	88	75
1999	13.9	10.4	3.6	34	-4	10	86	76
2000	15.4	N/A	N/A	N/A	11	18	86	N/A
2001	19.6	14.5	5.1	35	28	18	88	71
2002	20.4	16.4	4.0	25	4	13	90	70
% of households reporting								
1992	N/A	N/A	N/A	N/A	-	N/A	-	-
1996	53	42	11	25	-	N/A	-	-
1997	52	43	9	21	-2	2	-	-
1998	51	41	10	25	-2	-6	-	-
1999	49	40	9	23	-5	-3	-	-
2000	50	N/A	N/A	N/A	3	12	-	-
2001	51	49	2	4	2	12	-	-
2002	55	51	4	8	7	3	-	-
Average per rep. hhld. (\$)								
1992	N/A	N/A	N/A	N/A	-	N/A	-	-
1996	3,100	3,200	-100	-4	-	N/A	-	-
1997	3,700	3,300	400	11	17	2	-	-
1998	3,800	3,100	800	26	5	-7	-	-
1999	3,900	3,500	400	12	1	14	-	-
2000	4,100	N/A	N/A	N/A	5	4	-	-
2001	5,000	3,700	1,300	34	23	4	-	-
2002	4,700	4,000	700	19	-5	7	-	-

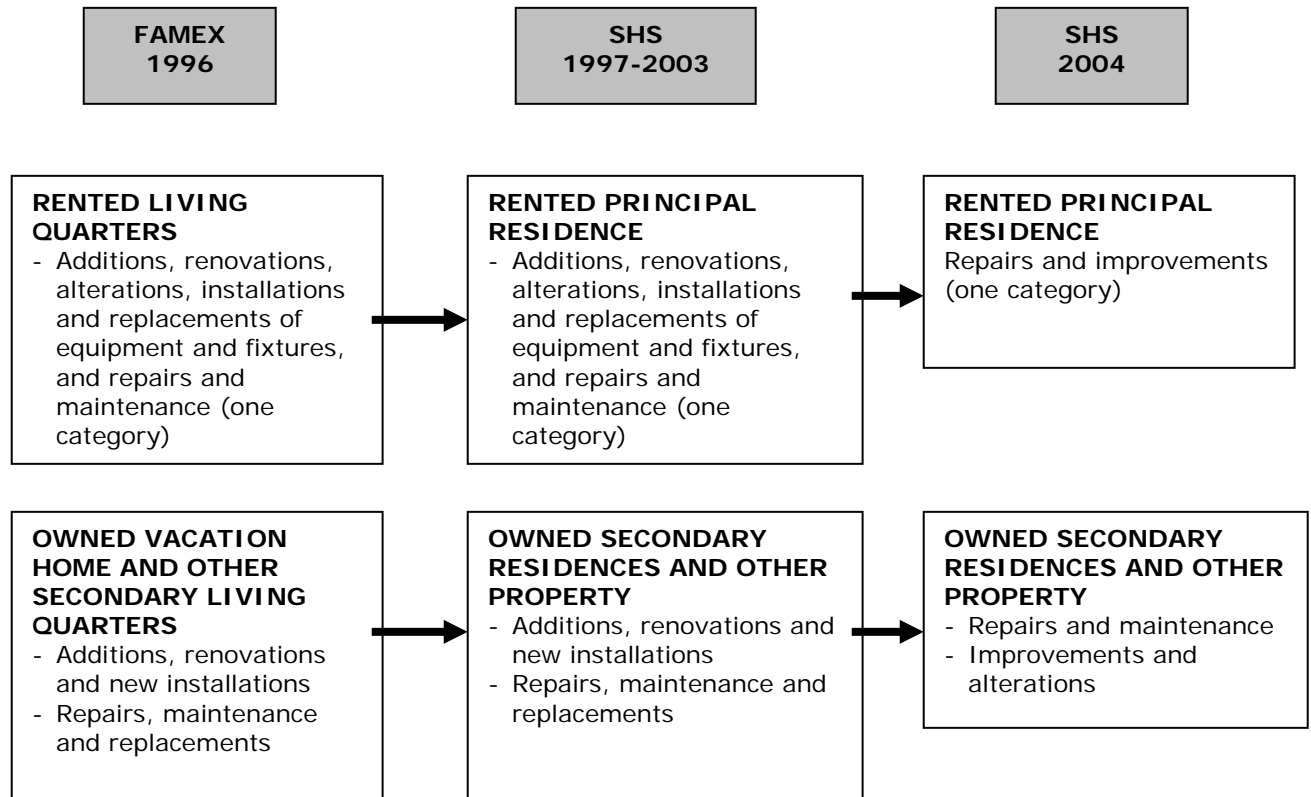
NOTES: * Estimated for households reporting homeownership Dec. 31.
 ** Differences were calculated using unrounded data.
 *** The 2000 and 2001 rates were annualized from the 2001/1999 change.

APPENDIX B: Content for the SHS/FAMEX and the HRRS

(Note: each bullet represents a separate response category.)



APPENDIX B: Content for the SHS/FAMEX and the HRRS (cont.)



APPENDIX B: Content for the SHS/FAMEX and the HRRS (concluded)

**HRRS
1997**

**HRRS
1998-2002**

1) ADDITIONS

- Garage or carport
- Other structural extensions
- Inground swimming pools
- Fences, patios, driveways
- Landscaping

Like HRRS 1997 except that repairs and maintenance questions were asked first

2) RENOVATIONS AND ALTERATIONS

- Combination of interior and exterior
- Interior work only
- Exterior work only

3a) NEW INSTALLATIONS OF EQUIPMENT AND FIXTURES

- Plumbing fixtures
- Heating and air conditioning equipment
- Electrical fixtures or equipment
- Built-in appliances
- Hard-surface flooring
- Other fixtures or built-in equipment

3b) REPLACEMENT OF EQUIPMENT AND FIXTURES

(Categories are the same as for new installations.)

4) REPAIRS AND MAINTENANCE

- Painting
- Wall papering
- Repairs to interior walls and ceilings
- Repairs to hard surface flooring and wall-to-wall carpeting
- *Complete re-roofing*
- Eavestroughing and other roof repairs
- Repairs to exterior walls including soffits, fascia, foundations and chimneys
- Caulking and weather-stripping, etc.
- Repairs to outdoor patios, fences and driveways
- Repairs to heating and air conditioning system
- Repairs to plumbing equipment
- Repairs to electrical equipment
- Carpentry work not already reported
- Other

General notes about the HRRS:

- For each category, costs were collected for work contracted out (labour only or labour and materials if billed together) and for materials purchased separately
- HRRS collected information for owned principal residences only and not for:
 - secondary residences and other property;
 - rented principal residences.
- Categories are very similar to FAMEX 1996.

APPENDIX C: Use of repair and renovation data from the SHS and HRRS by the System of National Accounts

The System of National Accounts (SNA) produces estimates of repairs and maintenance, and estimates of alterations and improvements. They are both components of the expenditure-based GDP of the Income and Expenditure Accounts.

The SNA needs the split between repairs and maintenance, and alterations and improvements. They also need to have a split between the cost of contracts and materials purchased separately for these two categories. Input-Output Division needs the detailed questions to assist them in commodity analysis.

Income and Expenditure Accounts Division and Input-Output Division produce estimates of repairs and maintenance expenses for homeowners which are components of Personal Expenditures on Consumer Goods and Services. Expenses for materials, such as paint, are covered under goods, while expenses for labour, such as plumbing repairs, are covered under services. They also estimate expenses for repairs and maintenance for the net imputed rent series. The SHS and HRRS are used as indicators for the repairs and maintenance estimates.

The Income and Expenditure Accounts Division produces estimates of alterations and improvements (A&I). They are published under "Investment in Residential Structures" which was valued at \$66 billion in 2002. There are three components of Investment in Residential Structures: new housing construction which accounts for about one-half, alterations and improvements which accounts for about one-third, and ownership transfer costs which accounts for about one-sixth.

There are four components of alterations and improvements in the System of National Accounts:

- Alterations and improvements by homeowners (about nine-tenths of the total),
- Alterations and improvements by renters,
- Alterations and improvements on vacation homes, and
- Alterations and improvements by landlords.

National and provincial level estimates are calculated for each of the four components on an annual basis. In addition to repair and renovation data from the SHS and/or HRRS, other sources are also used by the SNA, some as quality indicators. They include building permit and rental stock data (from Investment and Capital Stock Division), the Survey of the Real Estate Rental and Leasing and

Property Management Industries (from Service Industries Division),
and lumber sales data (from Distributive Trades Division).

APPENDIX D: Acronyms used in the report

A&I	alterations and improvements
CAPI	computer-assisted personal interviewing
CATI	computer-assisted telephone interviewing
CMHC	Canada Mortgage and Housing Corporation
CPI	Consumer Price Index
CV	coefficient of variation
FAMEX	Survey of Family Expenditures
GDP	gross domestic product
GST	Goods and Services Tax
HRRS	Homeowner Repair and Renovation Survey
HST	Harmonized Sales Tax
LFS	Labour Force Survey
PIPES	Project to Improve Provincial Economic Statistics
SHS	Survey of Household Spending
SNA	System of National Accounts