Labour Force Quality Report

Canadian Labour Force Survey

November, 1973

Confidential Restricted Circulation

Household Surveys Development Staff
Labour Force Survey Division
Field Division

Statistics Canada Statistique Canada

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HIGHLIGHTS

A. SLIPPAGE

Slippage, unlike non-response, cannot be measured from sample results alone, but must be estimated against a check obtained outside the survey procedure, such as a Census population projection value. All the factors that influence the population estimate from the Labour Force Survey or the Census population projection will also influence slippage. In view of this, slippage is not purely a field problem, although field plays an important part. The following is a list of causes that affect slippage.

1. Errors in Population Projection
   (a) Inaccurate projection of census population

      (i) due to inaccuracy in the Census figures themselves

      (ii) due to assumptions used for interprovincial migration figures

      (iii) due to assumptions used for immigration and emigration figures

      (iv) due to inability to predict accurately the net growth in the population.
2. Errors in Collection of Labour Force Data

   (a) Listing

      (i) original listing may be incorrect

      (ii) difficulties in keeping the listing up to date.

   (b) Enumeration

      (i) households not enumerated

      (ii) persons missed in households or included wrongly

      (iii) wrong sampling ratio due to

         - incorrect segment or cluster boundaries

         - households missed (multiple households, trailers, etc.) in counting

         - households wrongly classified and the effect on counting.
3. Errors in Processing

   (a) Errors in Labour Force Schedules

      (i) incorrect coding of age group, segment or cluster number

      (ii) schedules missed.

(b) Clerical Errors in Calculations

(c) Computer Processing

(i) data incorrectly transferred

(ii) data omitted from magnetic tape

(iii) general errors in processing

(iv) incorrect balancing subweight.

Finally, sampling variability affects month-to-month fluctuations in slippage rates. For instance, the sample for a given month may consist of a greater (or lesser) proportion of persons in a certain age-sex group than does the population and thus the slippage rates tend to exhibit net overcoverage (or undercoverage) of the particular age-sex group.

In November, all provincial estimated slippage rates are positive so the more substantial problem seems to be "missed households" and "missed persons". Greater month-to-month positive changes in slippage occurred in P.E.I., Ontario, Alberta and British Columbia.

All age groups exhibited positive slippage rates. The 20-24 age group always experiences the poorest coverage by the sample - in November the slippage rate was 6.8. The most noticeable month-to-month improvement (– 0.9%) comes from the 14-19 age group with a November rate of 3.9%.

See table and charts on pages 6, 10 and 11.

B. NON-RESPONSE

The overall non-response rate declined from 5.7% in October to 5.2% in November. From October to November, no increases were noted in any of the non-response components.

The overall non-response rate for November 1973 was the same as the corresponding rate for November 1972. Only small changes were noted in the non-response component between November 1972 and November 1973: T.A. and N1 components exhibited decreases and N2 showed an increase. There was no change in the "other" component.

See tables on pages 5 and 20, charts on pages 7,8,12 to 19, and for further details, Appendix III.

C. VARIANCE

The coefficient of variation of the estimate of Employed at the Canada level increased to 0.38% in November from 0.34% in October whereas the coefficient of variation of Unemployed at the Canada level decreased from 2.61% in October to 2.59% in November. Since the estimate of Employed decreased and the estimate of Unemployed increased over last month and seeing that coefficients of variation generally increase with decreases in the estimates, and vice versa, these changes are to be expected. The coefficient of variation of "in Labour Force" was 0.35% in November, up from 0.32% in October.

Decreases in the coefficients of variation of Employed occurred in the provinces of Nova Scotia and Saskatchewan while other provinces exhibited increases. Increases in the coefficients of variation of Unemployed occurred in the provinces of Prince Edward Island, Quebec, Ontario and British Columbia. Most of these changes can be explained simply in terms of changes in the levels of the estimates.

See charts on page 9 and Appendix II for more details.

D. REJECTED DOCUMENTS

The November reject rate at the Canada level for Labour Force items was 7.1%, a drop of 0.7 from the October rate of 7.8%. This was the third consecutive Labour Force Survey since August, when the rate was 9.9%, to register some improvement in the reject rate.

At the regional level all of the regions except Halifax registered decreases ranging from 0.1% to 1.9% between the October and November results. While there has been some reduction in the past two surveys in the reject rate for the Vancouver region, its November rate at 9.9% was well above the national average of 7.1%.

Computer edits for Labour Force items combined with Supplementary items, rejected 10.1% of the total documents, down 1.0% from the October rate of 11.1%.

The number of blanks in the identification coding was reduced by 50% averaging .018 per document versus a rate of .036 per document for October.

See tables on pages 5 and 21 and charts on pages 7, and 12 to 19

E. ENUMERATION COSTS

At the Canada level the November Labour Force Enumeration costs were calculated at $ 2.41 per sample household, down 11 cents from the October average of $ 2.52. However, October rates were considered to be high due to the inability of interviewers to accurately cost the October Labour Force Survey because it also involved the leaving of self enumeration documents for the Child Care Survey and/or the Survey of Retirement and Pre-retirement Characteristics with many sample households. If we compare enumeration costs for November with September, the reduction amounts to 5 cents per household from $ 2.46 for September to $ 2.41 for November. The SRU household cost registered an 8 cent decline while there was only a 1 cent decline in the NSRU households.

It is difficult to precisely account for this change in SRU Enumeration cost. However, it is apparent that the use of the telephone to obtain Labour Force information in the 8 regional centres has helped to offset recent increases in the fees paid to interviewers. It is evident that interviewers with telephone assignments in these eight cities are becoming more efficient at telephone interviewing and in obtaining the permission of respondents to be telephoned for LF information in subsequent surveys following the initial face-to-face interview. Reduction in the SRU interviewing cost should continue for December and January when the use of the telephone for LF interviewing will be further expanded to all assignments in regional cities and to assignments in 4 other Canadian cities.

See tables on pages 5 and 22, and charts on pages 7, and 12 to 19.

Non-Response Rates, Rejected Document Rates and Enumeration Cost per Household by Regional Office
June to November 1973 and 1972

	1973						1972					
	Nov.	Oct.	Sept.	Aug.	July	June	Nov.	Oct.	Sept.	Aug.	July	June
Non-response												
Canada ..... %	5.2	5.7	6.5	10.9	15.1	8.4	5.2	5.1	6.1	10.1	12.4	9.4
St. John's ..... %	2.7	3.3	2.4	9.7	14.0	5.4	3.9	3.4	4.3	8.0	9.5	8.6
Halifax ..... %	5.5	5.5	6.1	9.8	13.4	8.1	5.7	5.5	6.1	9.3	9.4	11.9
Montreal ..... %	6.3	6.4	6.6	12.1	19.2	10.3	5.6	5.3	5.9	10.3	15.7	8.6
Ottawa ..... %	5.8	6.2	6.6	9.2	13.9	8.6	3.8	3.3	4.5	7.9	9.8	7.1
Toronto ..... %	4.5	4.9	6.7	11.4	16.2	6.7	4.3	4.4	5.5	11.2	13.8	9.7
Winnipeg ..... %	1.8	1.6	2.2	5.2	6.7	3.9	2.1	2.7	3.3	4.9	7.2	6.3
Edmonton ..... %	5.4	6.1	6.3	11.4	15.8	11.2	6.5	6.6	8.4	11.7	14.8	8.9
Vancouver ..... %	7.9	10.2	11.7	14.9	16.0	11.0	7.5	7.6	9.0	13.8	13.5	11.1
Rejected Documents (Regular Labour Force Items)												
Canada ..... %	7.1	7.8	8.5	9.9	9.1	9.0	8.1	9.9	8.4	11.6	9.6	9.5
St. John's ..... %	6.0	7.3	6.2	6.8	5.1	6.3	7.5	7.0	6.1	7.7	7.5	8.6
Halifax ..... %	7.4	7.1	7.9	10.0	10.0	9.8	7.9	6.7	7.6	10.7	9.9	9.6
Montreal ..... %	5.7	6.4	7.2	8.7	8.8	7.8	7.3	9.1	6.6	10.1	7.6	8.4
Ottawa ..... %	6.1	8.0	9.2	12.0	9.3	7.6	6.9	10.4	12.9	13.3	9.6	9.7
Toronto ..... %	7.4	8.8	9.9	10.6	10.7	11.0	10.9	13.9	10.1	16.1	12.5	11.3
Winnipeg ..... %	6.2	6.9	7.0	8.8	6.3	5.8	5.7	8.3	9.1	10.7	8.5	7.2
Edmonton ..... %	7.7	8.3	9.1	11.0	8.1	9.9	7.5	10.3	7.6	9.0	9.1	8.5
Vancouver ..... %	9.9	10.0	11.0	11.0	10.6	10.4	8.2	11.2	8.9	12.2	9.7	11.5
Enumeration Cost per Household(1)												
Canada ..... %	2.41	2.52	2.46	2.24	1.98	2.20	2.15	2.10	2.08	2.11	2.13	2.10
St. John's ..... %	2.75	2.89	2.71	2.50	2.10	2.50	2.42	2.35	2.27	2.40	2.38	2.27
Halifax ..... %	2.29	2.29	2.29	2.10	1.89	2.02	1.80	1.75	1.77	1.77	1.83	1.67
Montreal ..... %	2.58	2.70	2.66	2.41	2.07	2.30	2.28	2.27	2.29	2.36	2.25	2.31
Ottawa ..... %	2.53	2.66	2.68	2.44	2.07	2.49	2.38	2.26	2.29	2.25	2.31	2.28
Toronto ..... %	2.47	2.67	2.60	2.37	2.09	2.37	2.40	2.29	2.26	2.26	2.22	2.30
Winnipeg ..... %	2.39	2.48	2.40	2.22	2.16	2.25	2.24	2.16	2.16	2.19	2.43	2.16
Edmonton ..... %	2.22	2.29	2.24	2.06	1.72	1.91	1.85	1.88	1.83	1.86	1.89	1.89
Vancouver ..... %	2.19	2.37	2.20	1.92	1.84	2.01	1.99	1.97	1.89	1.88	1.94	1.95

	Month-to-month change								Year-to-year change			
	1973				1972							
	Oct. to Nov.	Sept. to Oct.	Aug. to Sept.	July to Aug.	Oct. to Nov.	Sept. to Oct.	Aug. to Sept.	July to Aug.	Nov. 1972 to Nov. 1973	Oct. 1972 to Oct. 1973	Sept. 1972 to Sept. 1973	Aug. 1972 to Aug. 1973
Non-response												
Canada ..... %	− 0.5	− 0.8	− 4.4	− 4.2	+ 0.1	− 1.0	− 4.0	− 2.3	−	+ 0.6	+ 0.4	+ 0.8
St. John's ..... %	− 0.6	+ 0.9	− 7.3	− 4.3	+ 0.5	− 0.9	− 3.7	− 1.5	− 1.2	− 0.1	− 1.9	+ 1.7
Halifax ..... %	−	− 0.6	− 3.7	− 3.6	+ 0.2	− 0.6	− 3.2	− 0.1	− 0.2	−	-	+ 0.5
Montreal ..... %	− 0.1	− 0.2	− 5.5	− 7.1	+ 0.3	− 0.6	− 4.4	− 5.4	+ 0.7	+ 1.1	+ 0.7	+ 1.8
Ottawa ..... %	− 0.4	− 0.4	− 2.6	− 4.7	+ 0.5	− 1.2	− 3.4	− 1.9	+ 2.0	+ 2.9	+ 2.1	+ 1.3
Toronto ..... %	− 0.4	− 1.8	− 4.7	− 4.8	− 0.1	− 1.1	− 5.7	− 2.6	+ 0.2	+ 0.5	+ 1.2	+ 0.2
Winnipeg ..... %	+ 0.2	− 0.6	− 3.0	− 1.5	− 0.6	− 0.6	− 1.6	− 2.3	− 0.3	− 1.1	− 1.1	+ 0.3
Edmonton ..... %	− 0.7	− 0.2	− 5.1	− 4.4	− 0.1	− 1.8	− 3.3	− 3.1	− 1.1	− 0.5	− 2.1	− 0.3
Vancouver ..... %	− 2.3	− 1.5	− 3.2	− 1.1	− 0.1	− 1.4	− 4.8	+ 0.3	+ 0.4	+ 2.6	+ 2.7	+ 1.1
Rejected Documents (Regular Labour Force Items)												
Canada ..... %	− 0.7	− 0.7	− 1.4	+ 0.8	− 1.8	+ 1.5	− 3.2	+ 2.0	− 1.0	− 2.1	+ 0.1	− 1.7
St. John's ..... %	− 1.3	+ 1.1	− 0.6	+ 1.7	+ 0.5	+ 0.9	− 1.6	+ 0.2	− 1.5	+ 0.3	+ 0.1	− 0.9
Halifax ..... %	+ 0.3	− 0.8	− 2.1	−	+ 1.2	− 0.9	− 3.1	+ 0.8	− 0.5	+ 0.4	+ 0.3	− 0.7
Montreal ..... %	− 0.7	− 0.8	− 1.5	− 0.1	− 1.8	+ 2.5	− 3.5	+ 2.5	− 1.6	− 2.7	+ 0.6	− 1.4
Ottawa ..... %	− 1.9	− 1.2	− 2.8	+ 2.7	− 3.5	− 2.5	− 0.4	+ 3.7	− 0.8	− 2.4	− 3.7	− 1.3
Toronto ..... %	− 1.4	− 1.1	− 0.7	− 0.1	− 3.0	+ 3.8	− 6.0	+ 3.6	− 3.5	− 5.1	− 0.2	− 5.5
Winnipeg ..... %	− 0.7	− 0.1	− 1.8	+ 2.5	− 2.6	− 0.8	− 1.6	+ 2.2	+ 0.5	− 1.4	− 2.1	− 1.9
Edmonton ..... %	− 0.6	− 0.8	− 1.9	+ 2.9	− 2.8	+ 2.7	− 1.4	− 0.1	+ 0.2	− 2.0	+ 1.5	+ 2.0
Vancouver ..... %	− 0.1	− 1.0	−	+ 0.4	− 3.0	+ 2.3	− 3.3	+ 2.5	+ 1.7	− 1.2	+ 2.1	− 1.2
Enumeration Cost per Household(1)												
Canada ..... $	− 0.11	+ 0.06	+ 0.22	+ 0.26	+ 0.05	+ 0.02	− 0.03	− 0.02	+ 0.26	+ 0.42	+ 0.38	+ 0.13
St. John's ..... $	− 0.14	+ 0.18	+ 0.21	+ 0.40	+ 0.07	+ 0.08	− 0.13	+ 0.02	+ 0.33	+ 0.54	+ 0.44	+ 0.10
Halifax ..... $	−	−	+ 0.19	+ 0.21	+ 0.05	− 0.02	−	− 0.06	+ 0.49	+ 0.54	+ 0.52	+ 0.33
Montreal ..... $	− 0.12	+ 0.04	+ 0.25	+ 0.34	+ 0.01	− 0.02	− 0.07	+ 0.11	+ 0.30	+ 0.43	+ 0.37	+ 0.05
Ottawa ..... $	− 0.13	− 0.02	+ 0.24	+ 0.37	+ 0.12	− 0.03	+ 0.04	− 0.06	+ 0.15	+ 0.40	+ 0.39	+ 0.19
Toronto ..... $	− 0.20	+ 0.07	+ 0.23	+ 0.28	+ 0.11	+ 0.03	−	+ 0.04	+ 0.07	+ 0.38	+ 0.34	+ 0.11
Winnipeg ..... $	− 0.09	+ 0.08	+ 0.18	+ 0.06	+ 0.08	−	− 0.03	− 0.24	+ 0.15	+ 0.32	+ 0.24	+ 0.03
Edmonton ..... $	− 0.07	+ 0.05	+ 0.18	+ 0.34	− 0.03	+ 0.05	− 0.03	− 0.03	+ 0.37	+ 0.41	+ 0.41	+ 0.20
Vancouver ..... $	− 0.18	+ 0.17	+ 0.28	+ 0.08	+ 0.02	+ 0.08	+ 0.01	− 0.06	+ 0.20	+ 0.40	+ 0.31	+ 0.04

(1) The variation in the enumeration cost for July 1973 is due to a major supplementary survey being conducted in conjunction with the regular Labour Force Survey.

NOTE: Slippage rates have been deleted temporarily from this table as historical rates are not yet available on the revised basis. However, a table is given on next page giving slippage rates for September and October 1973 calculated on population projections based on 1971 Census.

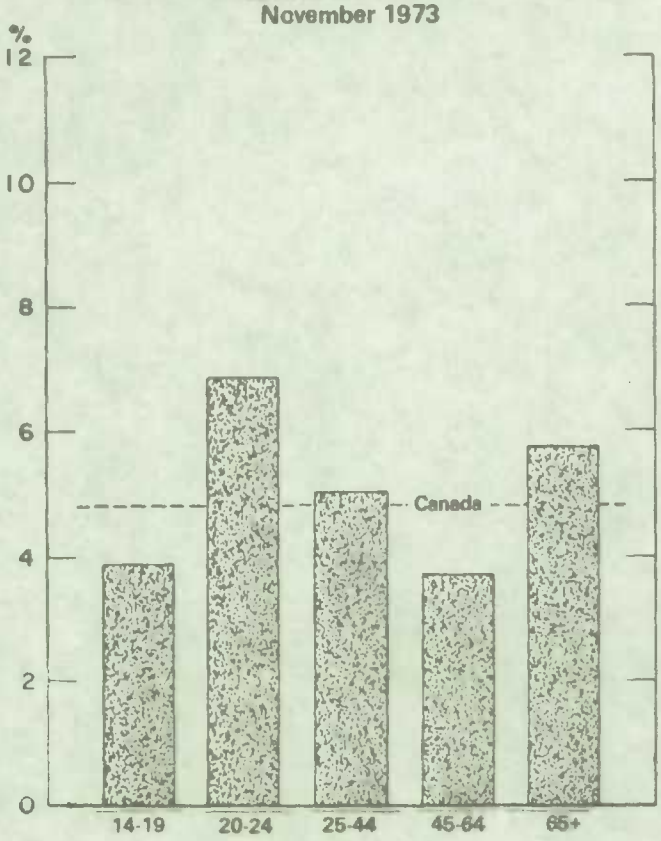
Slippage Rates(1), Canada by Age and Provincial Totals

October and November 1973

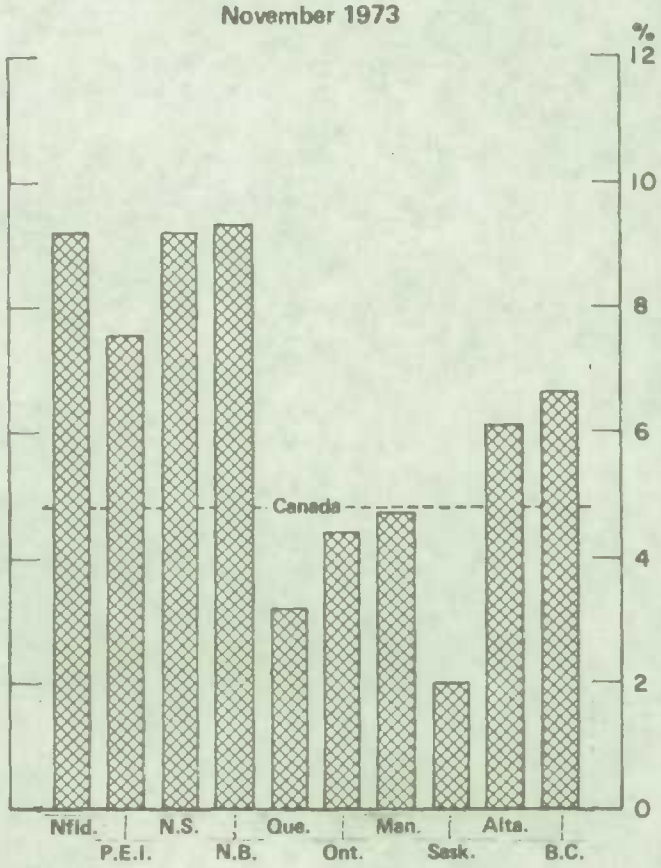
	Nov. 1973	Oct. 1973	Oct.-to-Nov. Change
Canada	4.8	4.7	+ 0.1
14-19 years	3.9	4.8	− 0.9
20-24 years	6.8	6.9	− 0.1
25-44 years	5.0	4.7	+ 0.3
45-64 years	3.7	3.7	−
65 and over	5.7	4.6	+ 1.1

	Nov. 1973	Oct. 1973	Oct.-to-Nov. Change
Nfld.	9.2	9.2	−
P.E.I.	7.5	6.0	+ 1.5
N.S.	9.2	10.1	− 0.9
N.B.	9.3	10.1	− 0.8
Que.	3.2	4.0	− 0.8
Ont.	4.4	3.8	+ 0.6
Man.	4.7	5.1	− 0.4
Sask.	2.0	2.4	− 0.4
Alta.	6.1	4.8	+ 1.3
B.C.	6.6	6.0	+ 0.6

Slippage Rates by Age Groups at Canada Level
November 1973

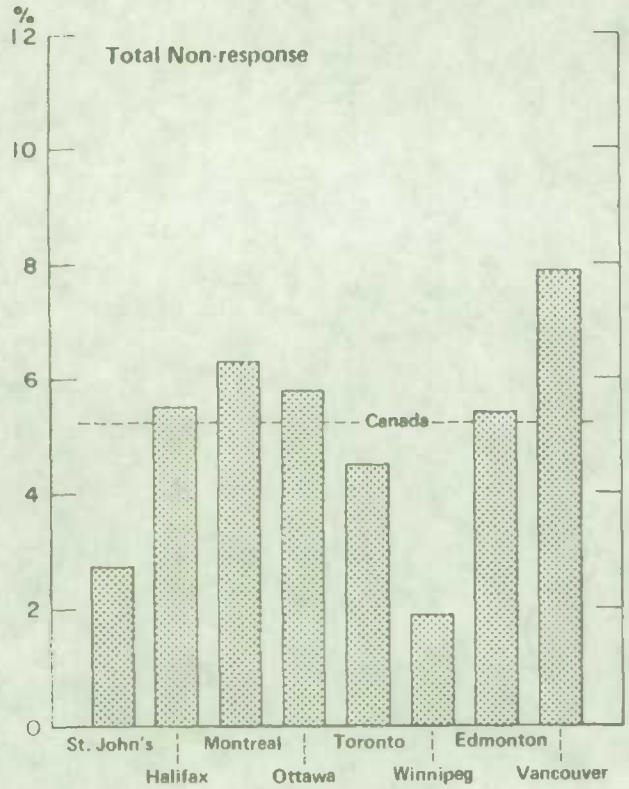


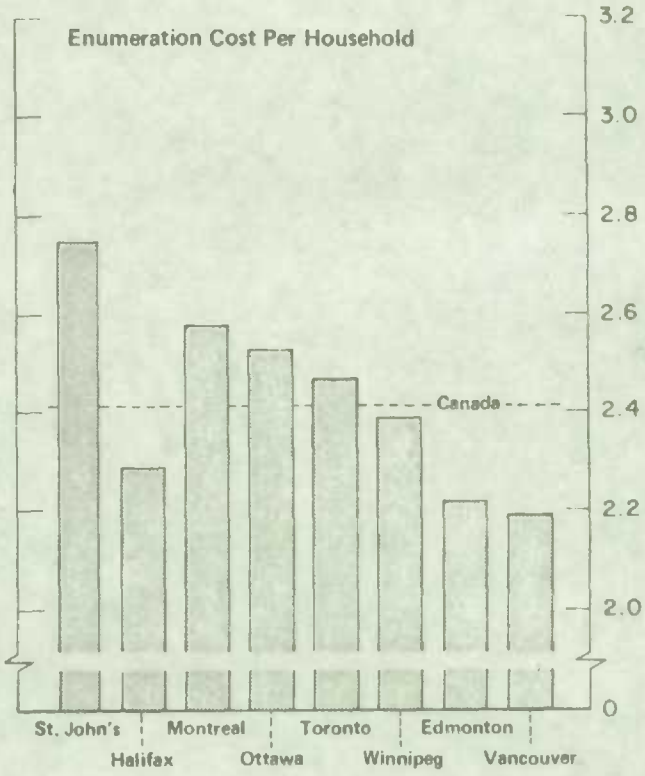
Slippage Rates by Province
November 1973

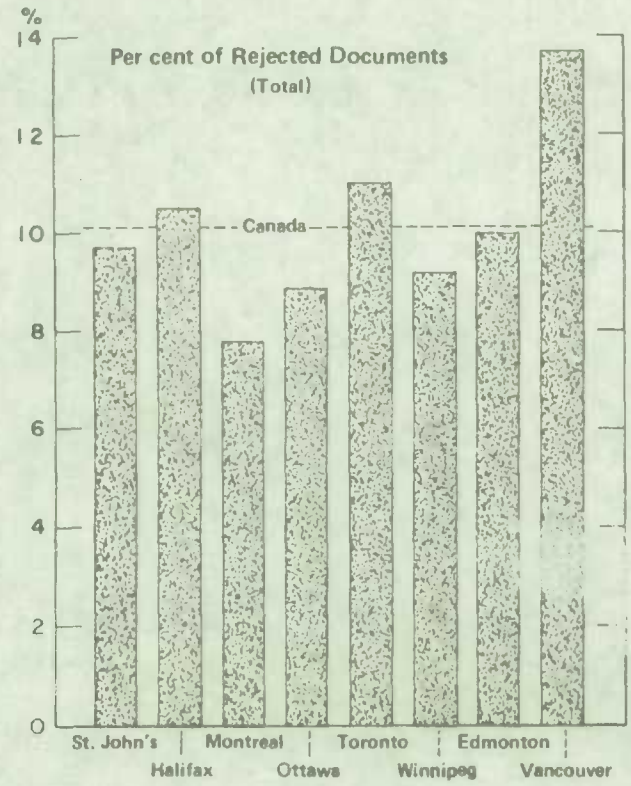


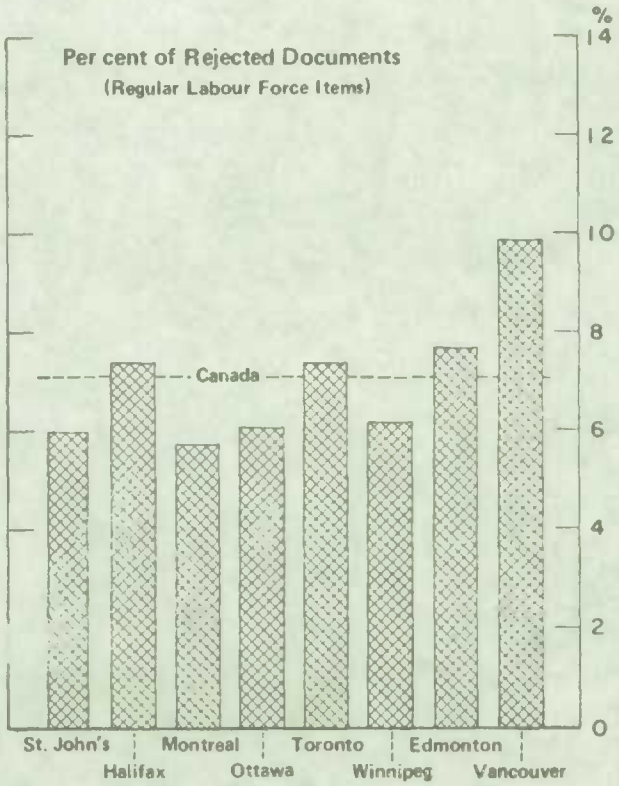
(1) The Above Rates are Calculated on Population Projections Based on 1971 Census.

Non-response Rates, Enumeration Cost and Rejected Documents by Regional Office
November 1973



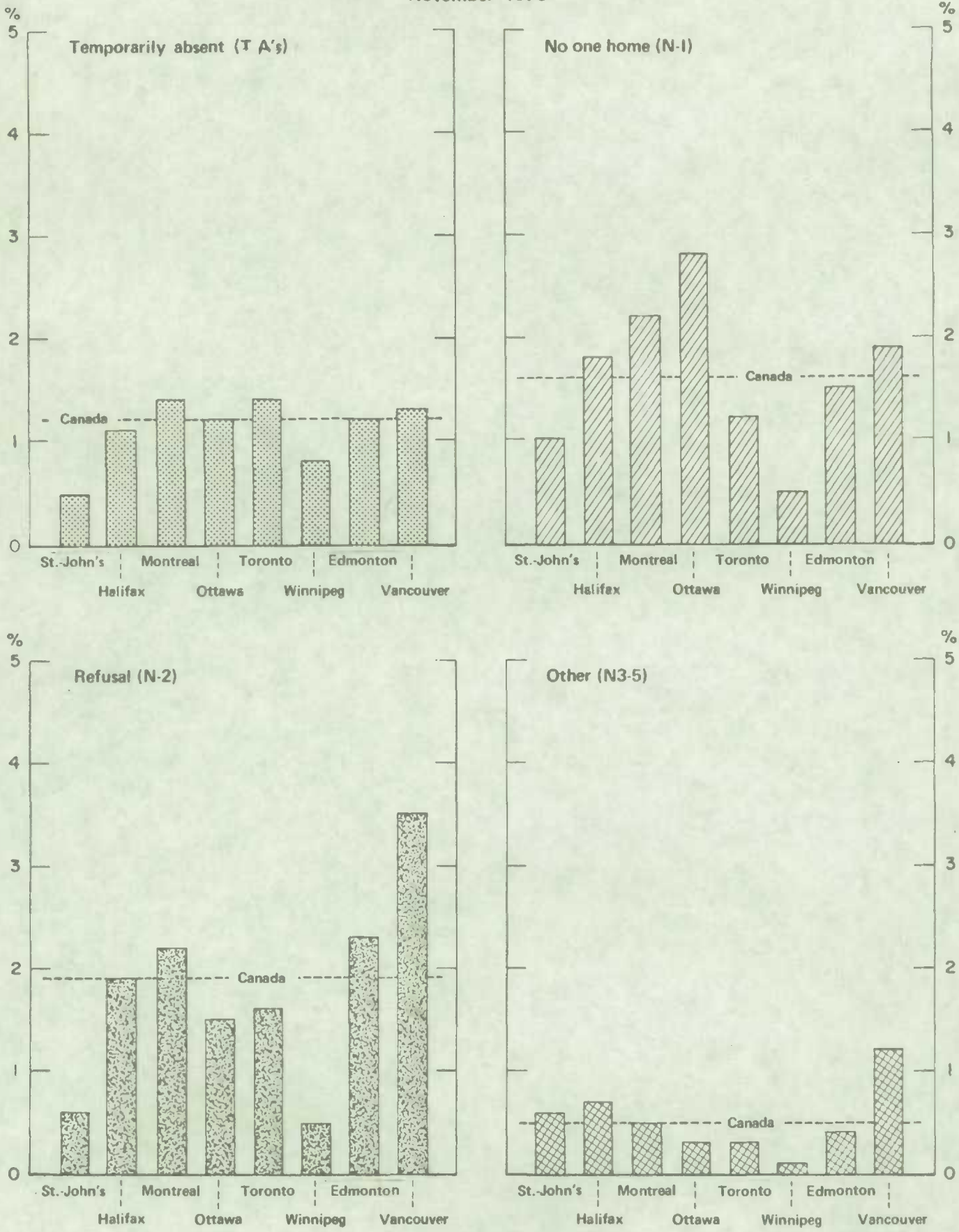






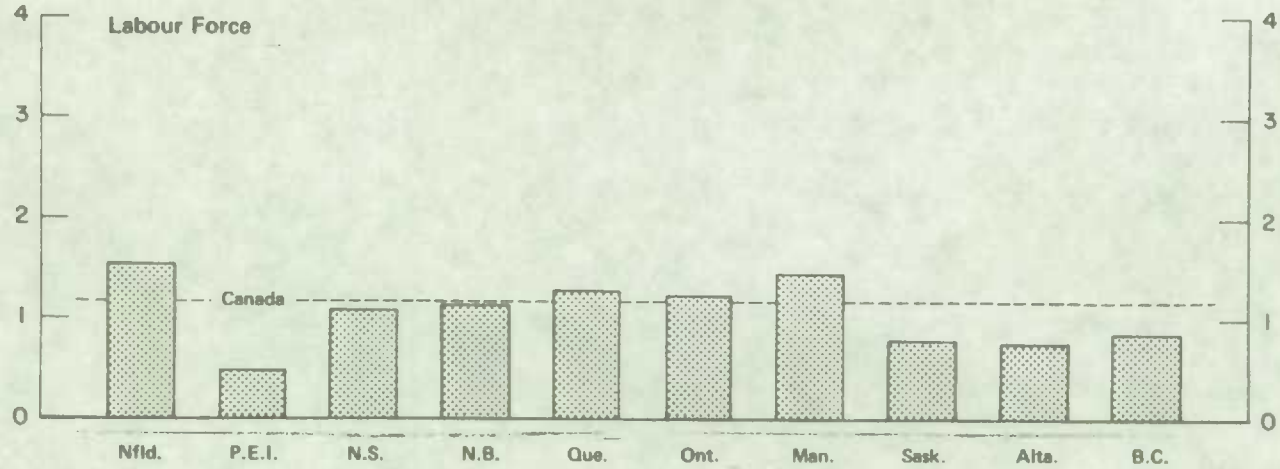
Non-response Rates, by Component

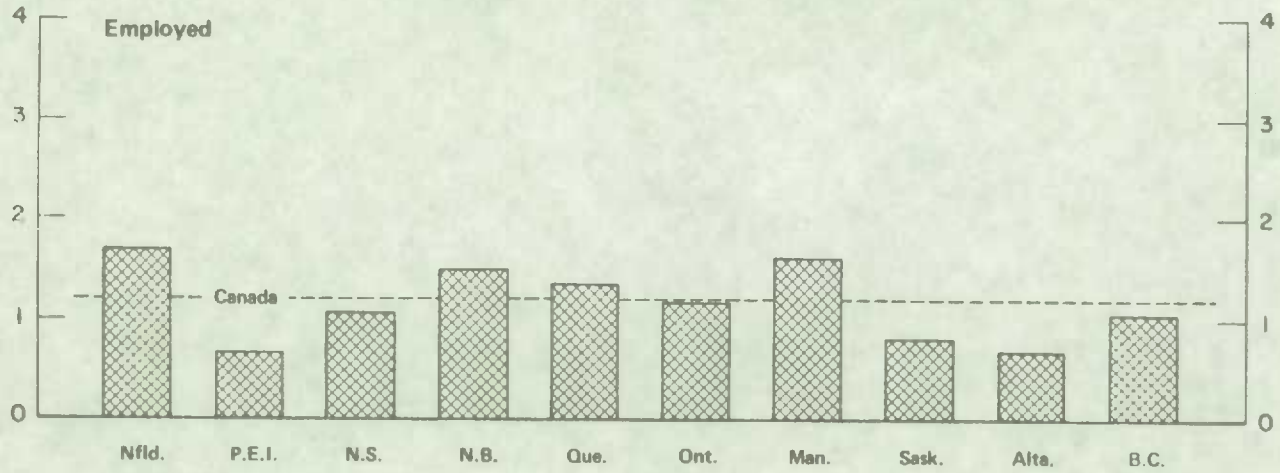
November 1973

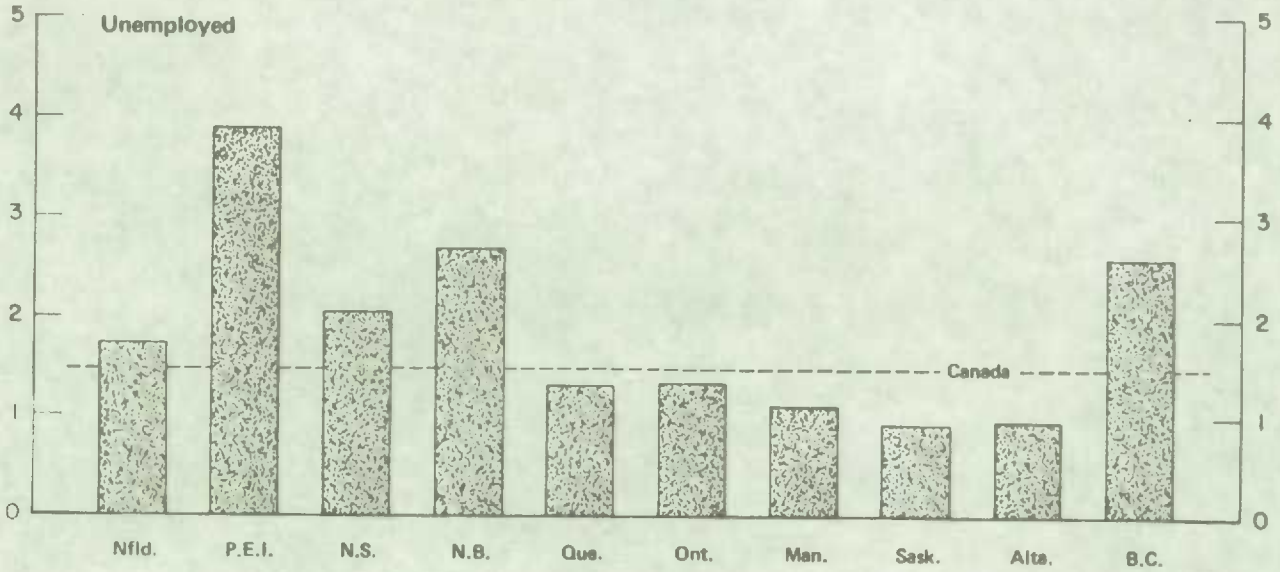


Binomial Factors for the Labour Force, Employed and Unemployed, Canada and the Provinces

November 1973

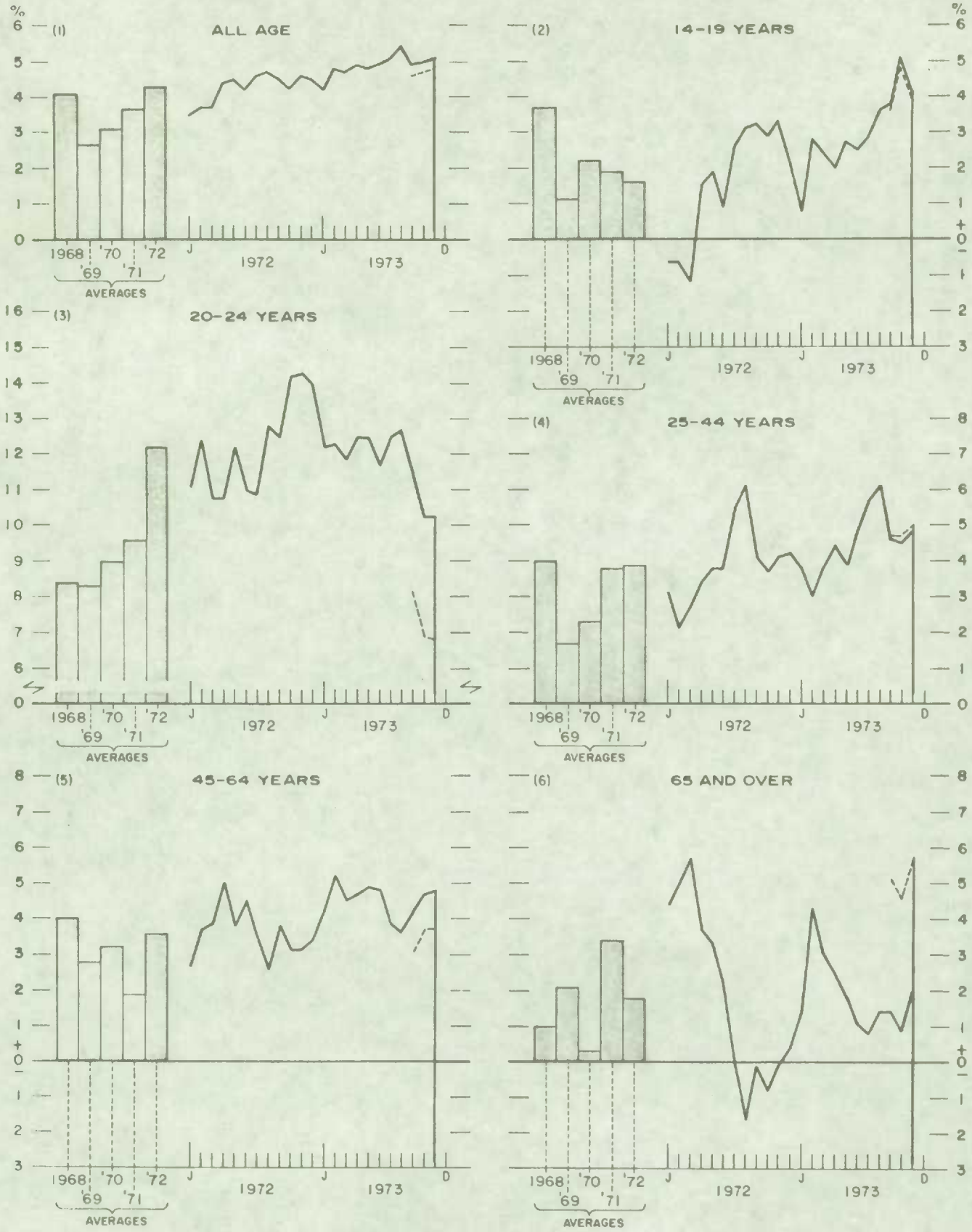






G-2

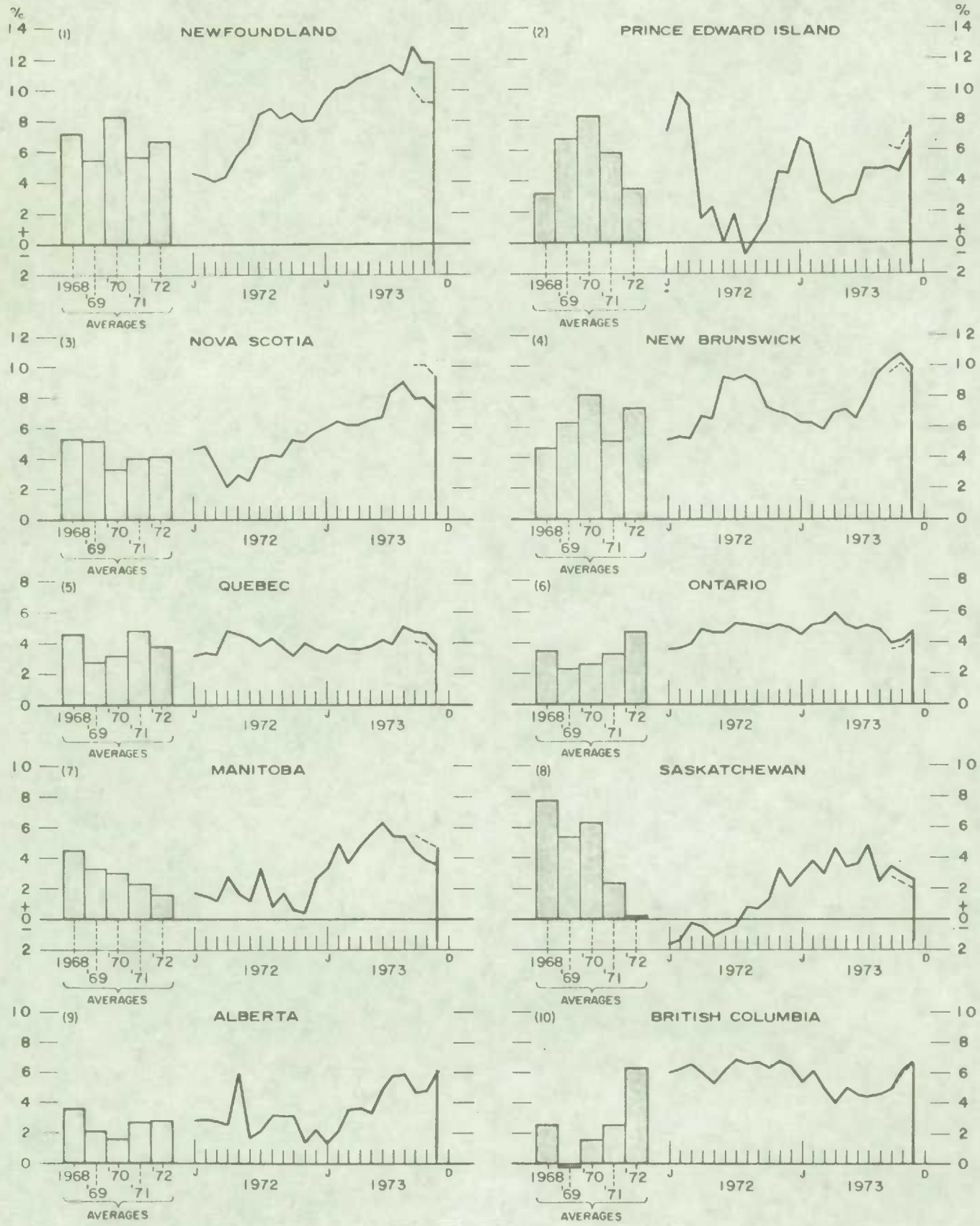
Slippage by Age Group at the Canada Level



—— Slippage Rates were Calculated on Population Projections Based on 1961 Census.

----- Slippage Rates were Calculated on Preliminary Population Projections Based on 1971 Census.

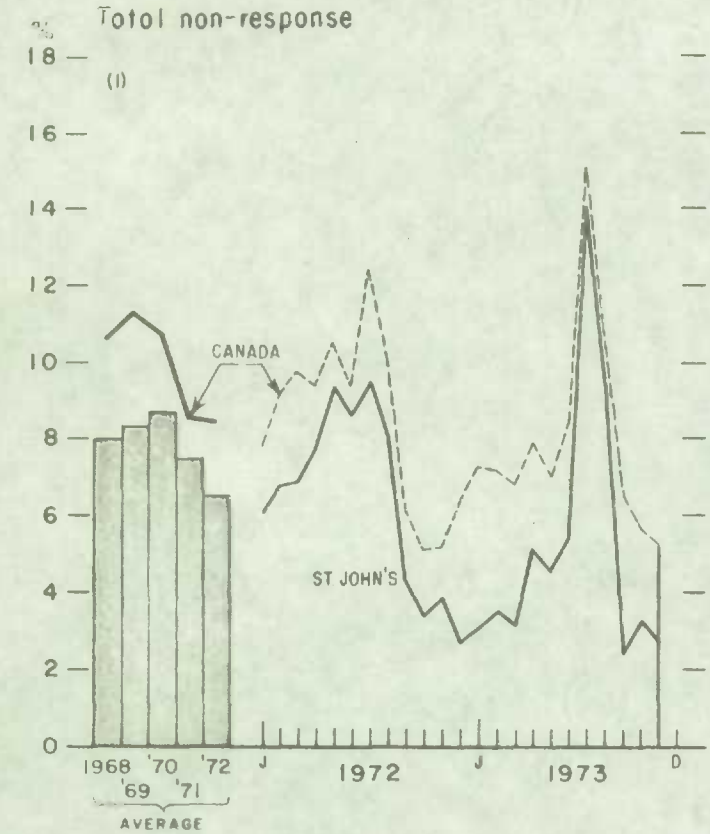
Slippage by Province

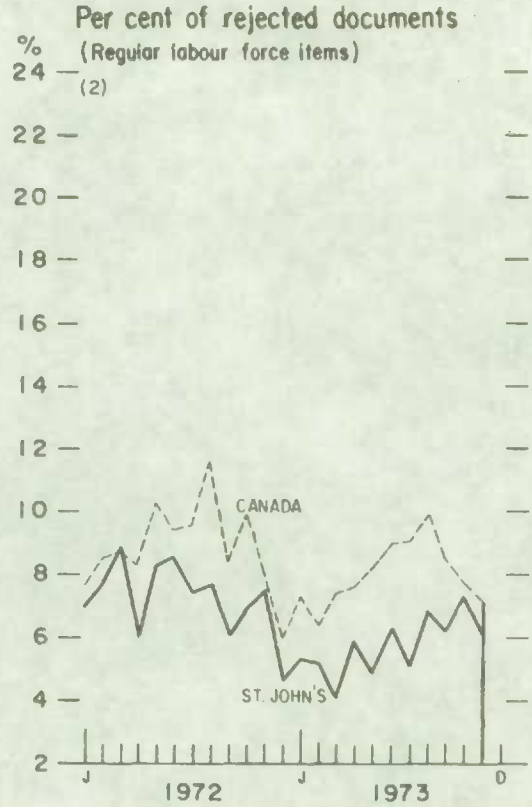


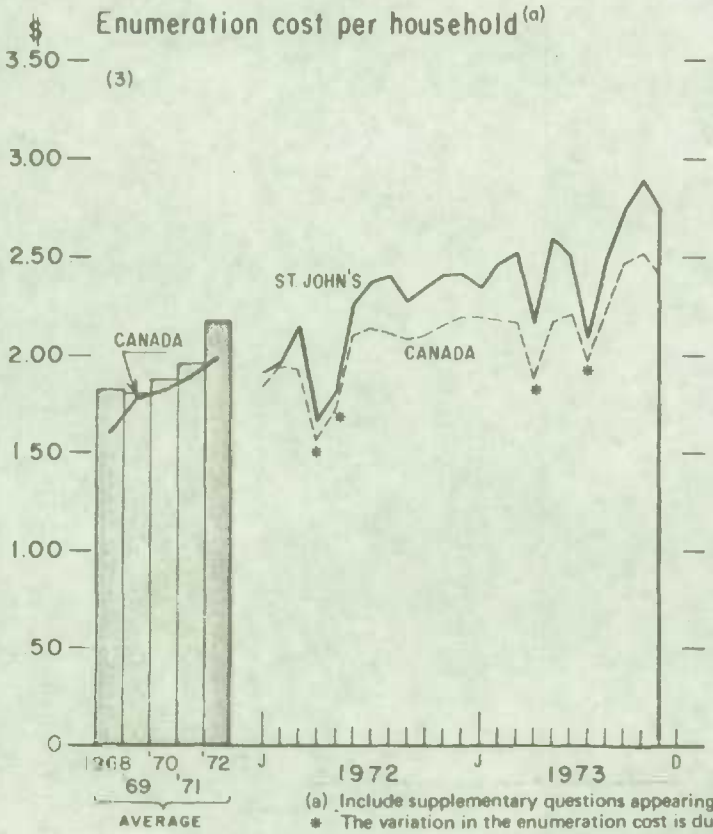
——— Slippage Rates were Calculated on Population Projections Based on 1961 Census.

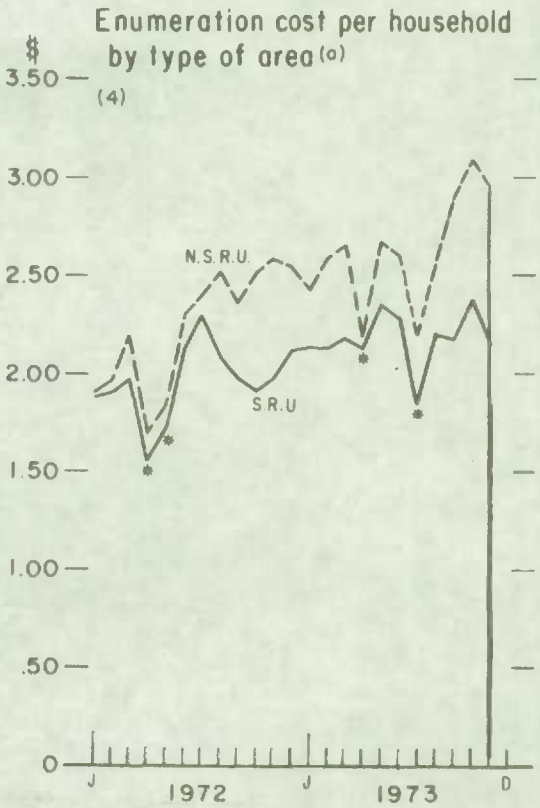
----- Slippage Rates were Calculated on Preliminary Population Projections Based on 1971 Census.

St. John's Regional Office









(a) Include supplementary questions appearing on the LFS regular schedule

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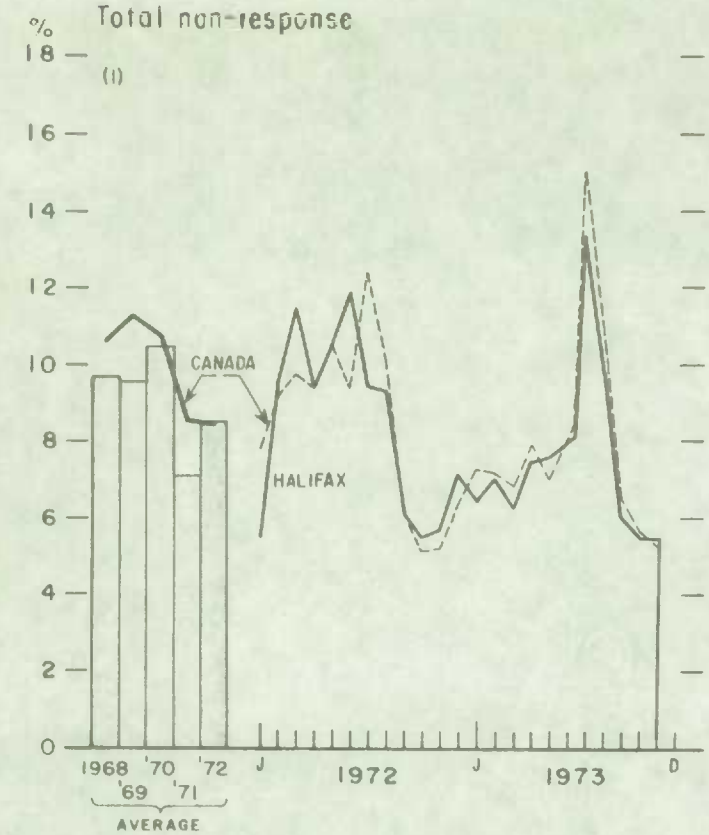
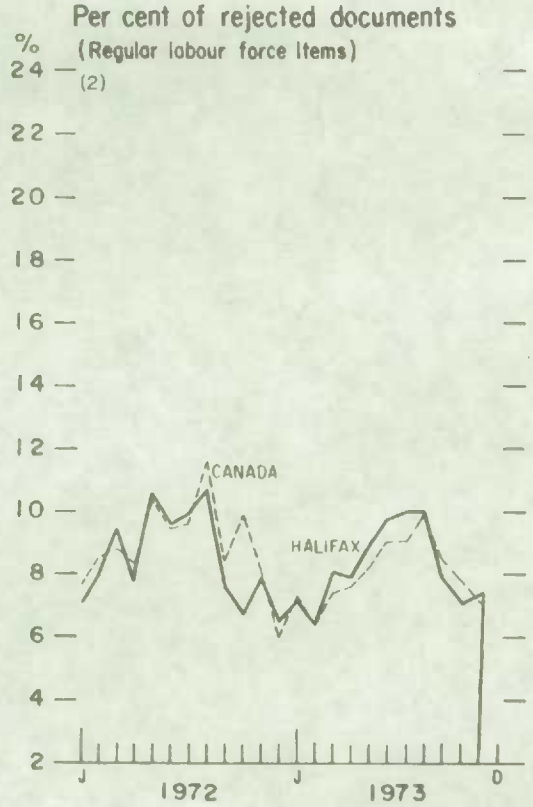
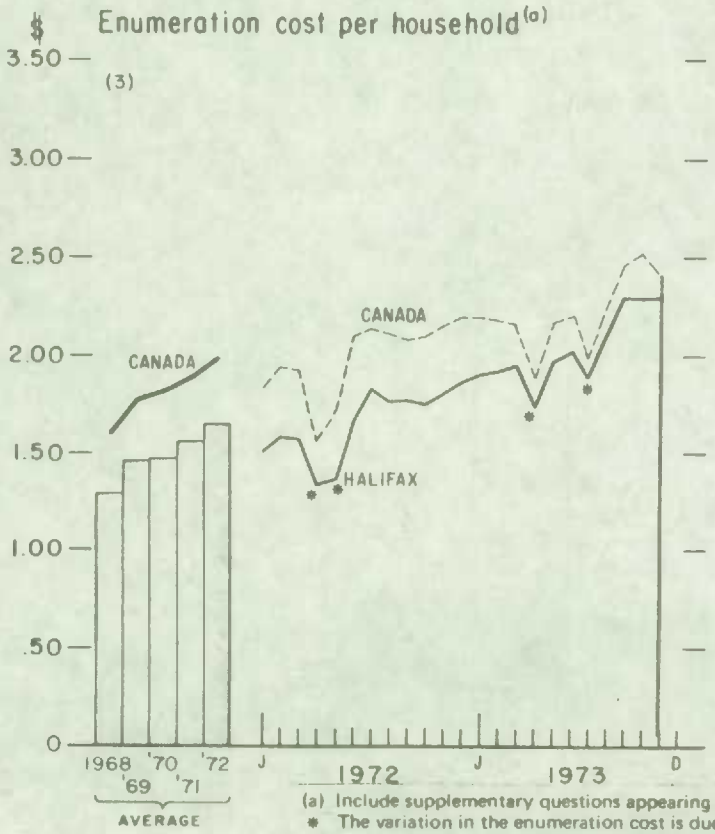
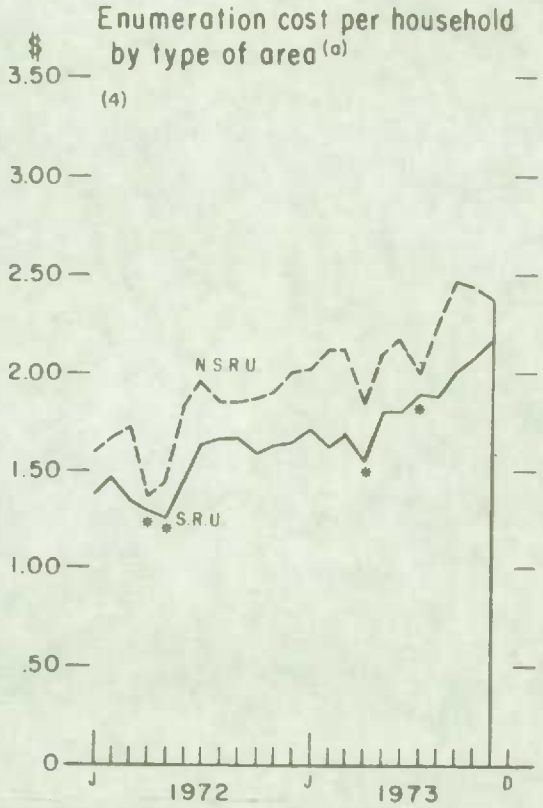
Halifax Regional Office









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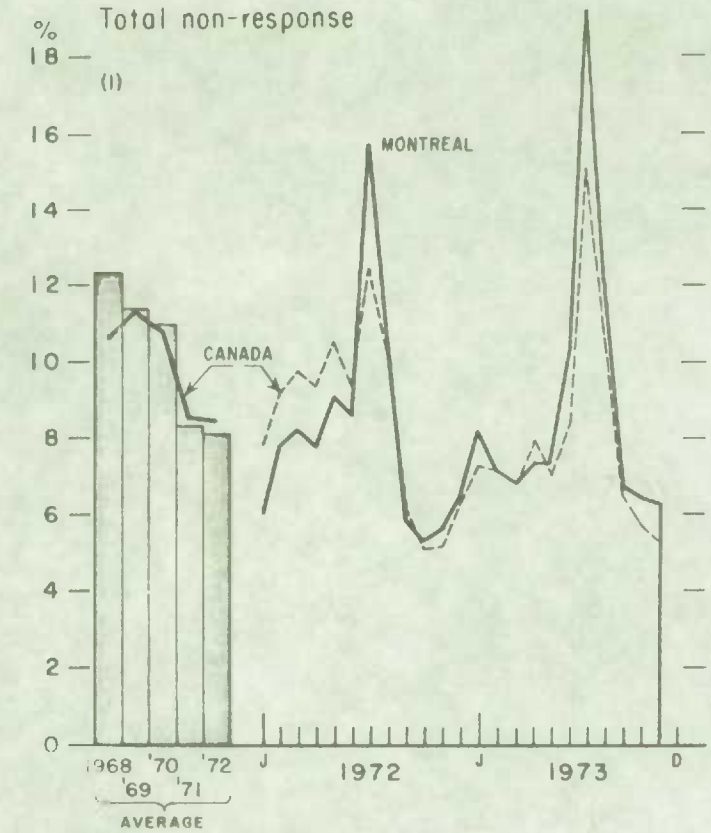
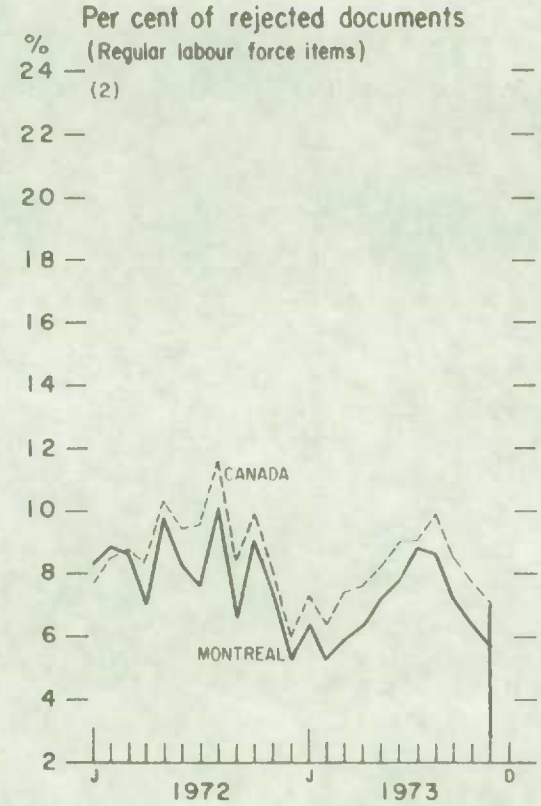
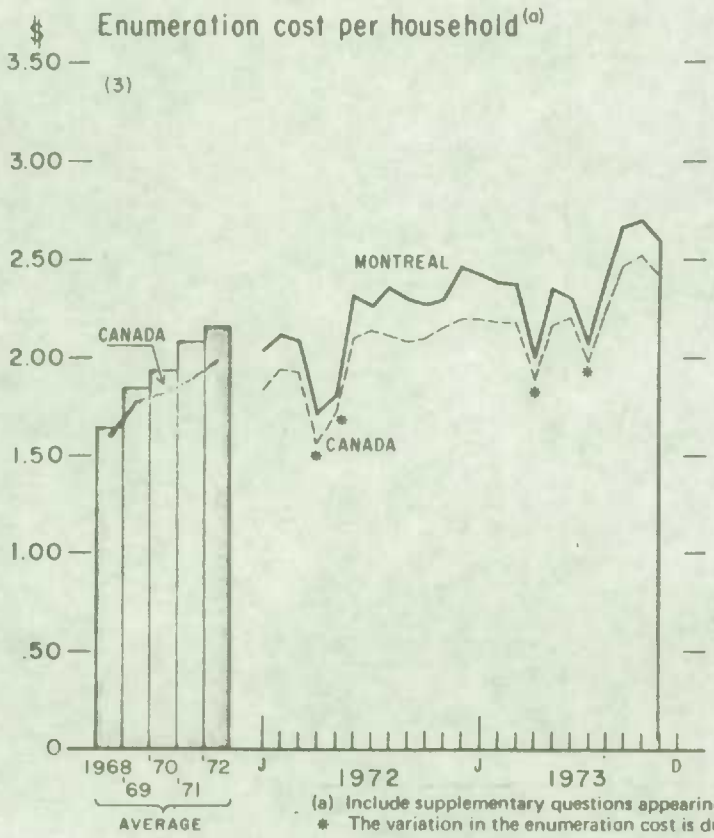
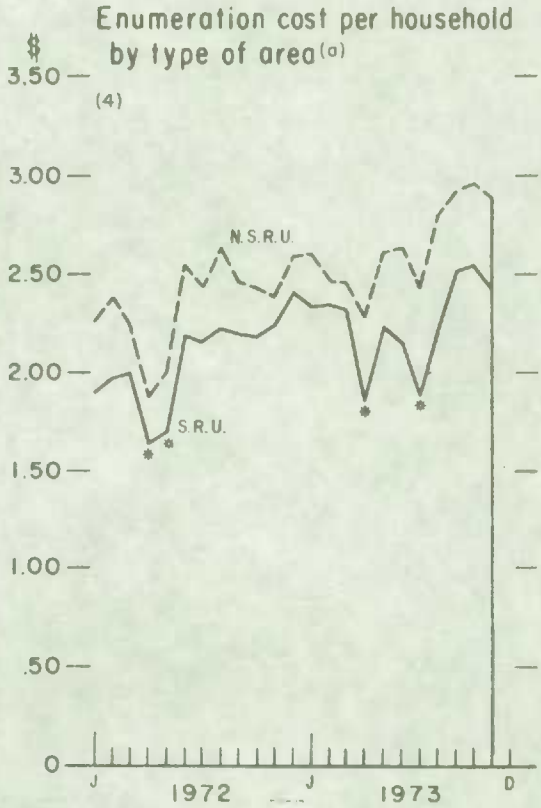
Montreal Regional Office









(a) Include supplementary questions appearing on the LFS regular schedule
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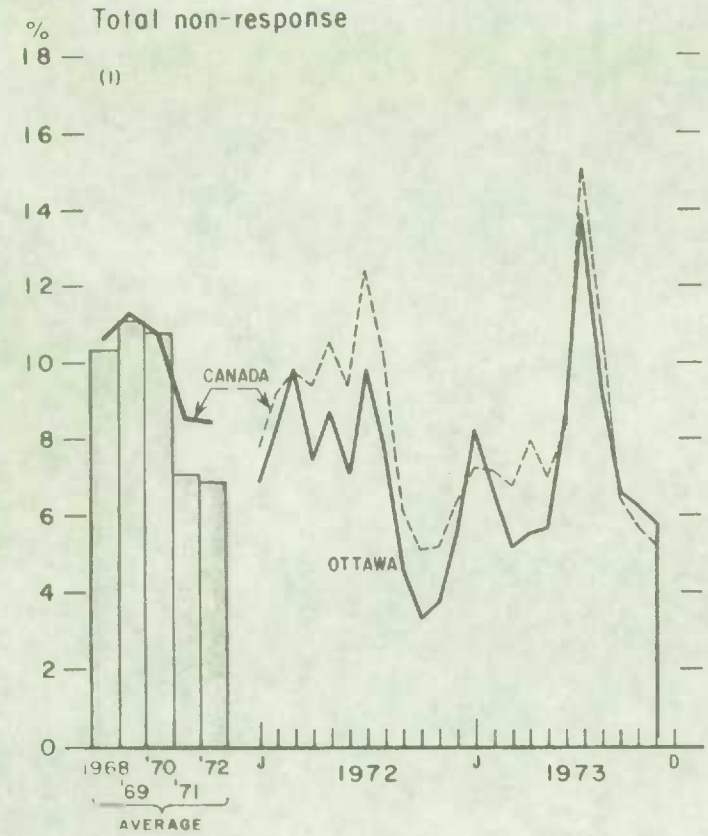
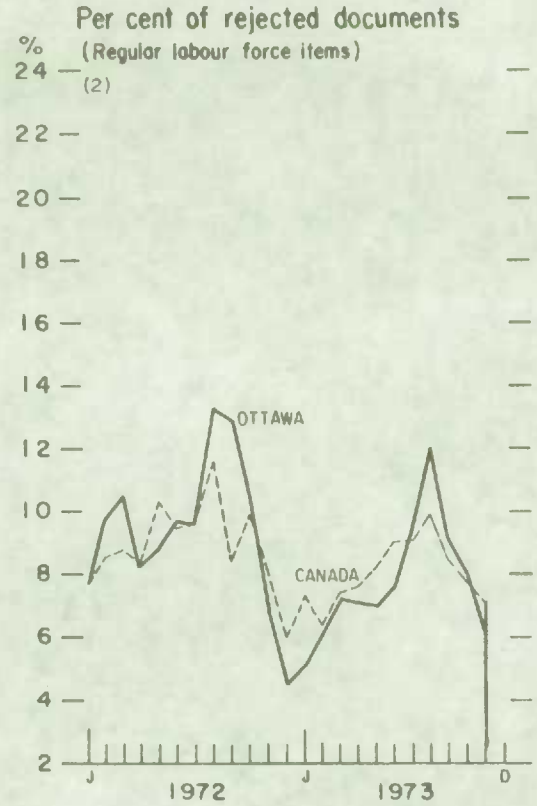
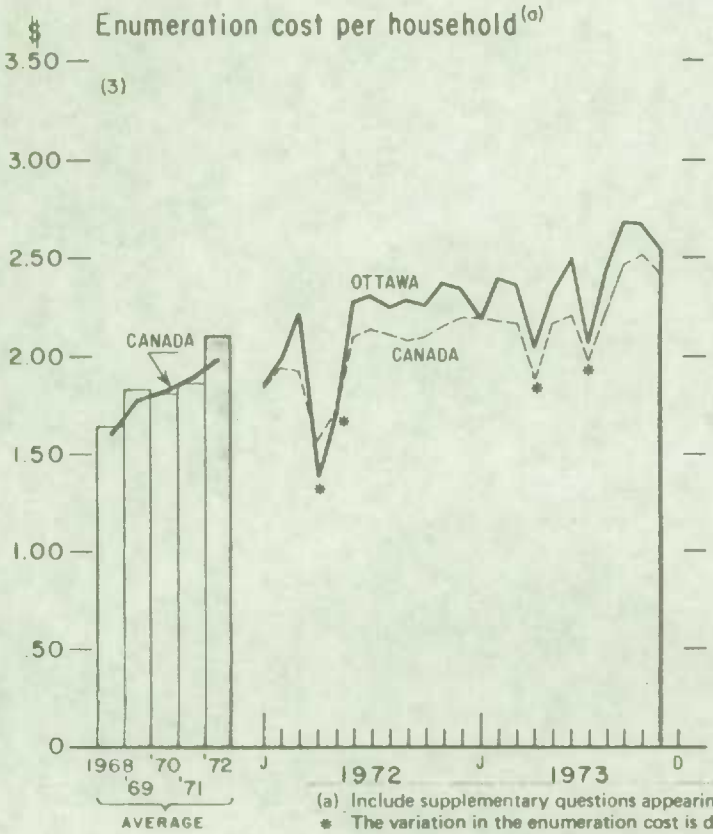
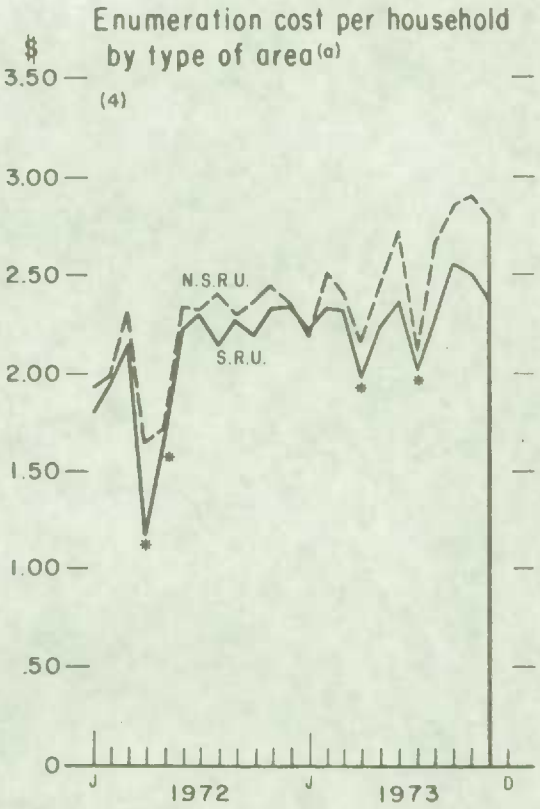
Ottawa Regional Office









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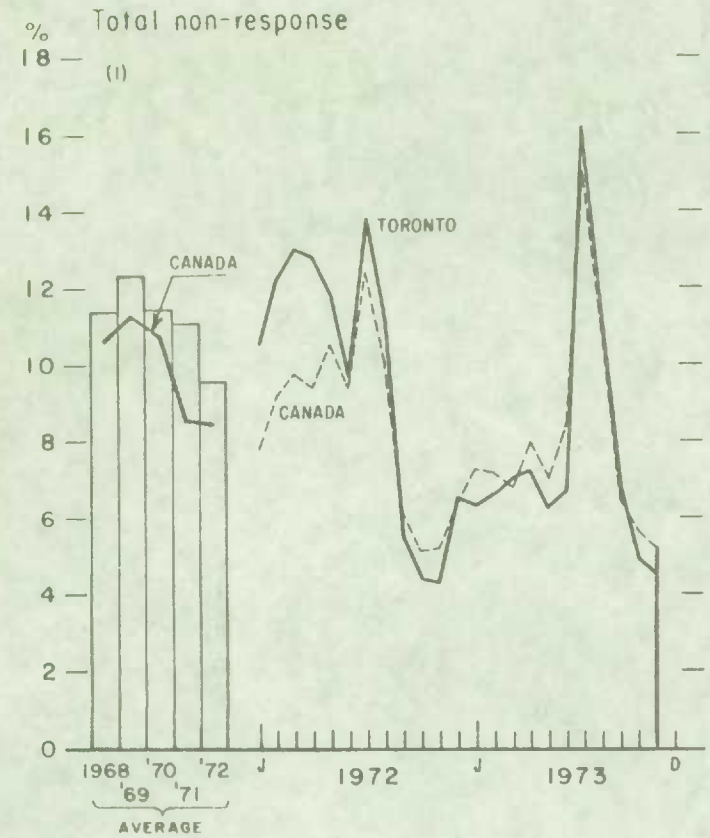
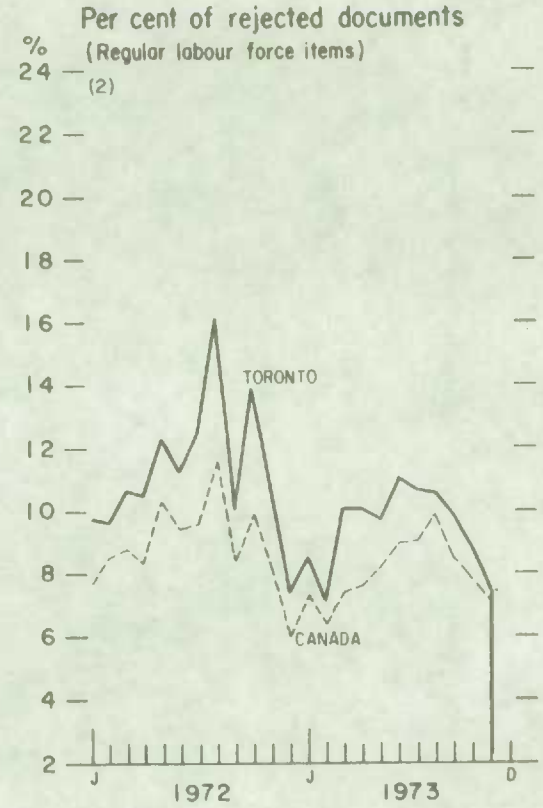
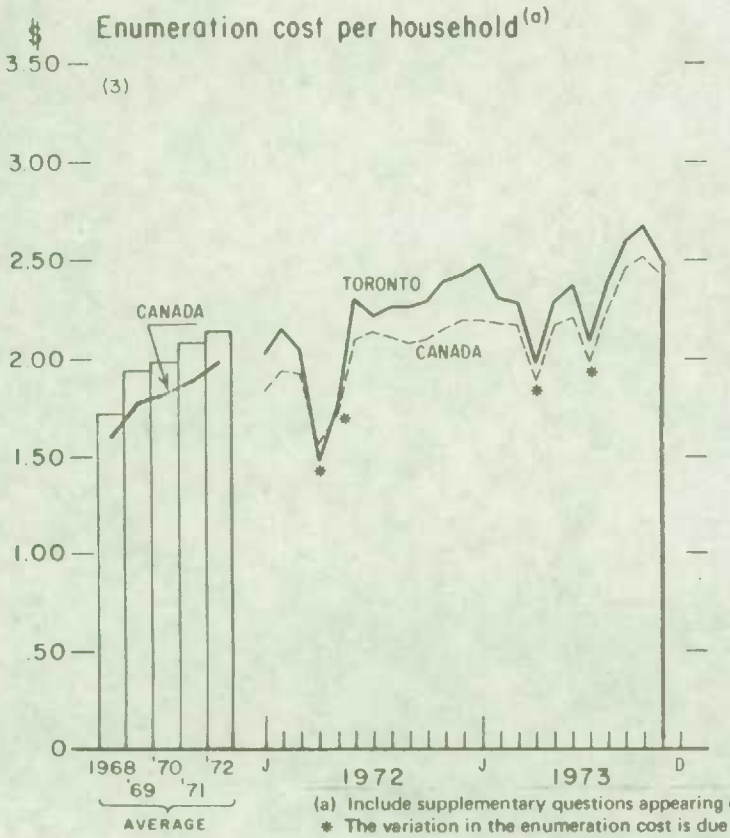
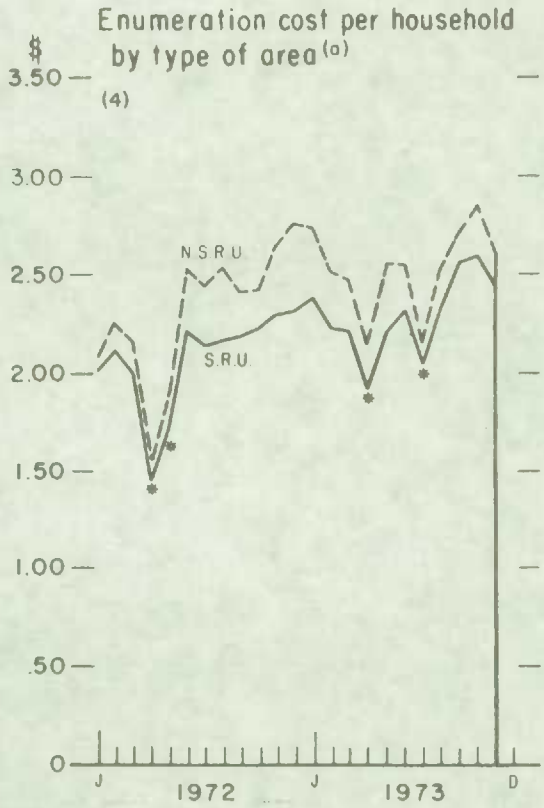
Toronto Regional Office









(a) Include supplementary questions appearing on the LFS regular schedule

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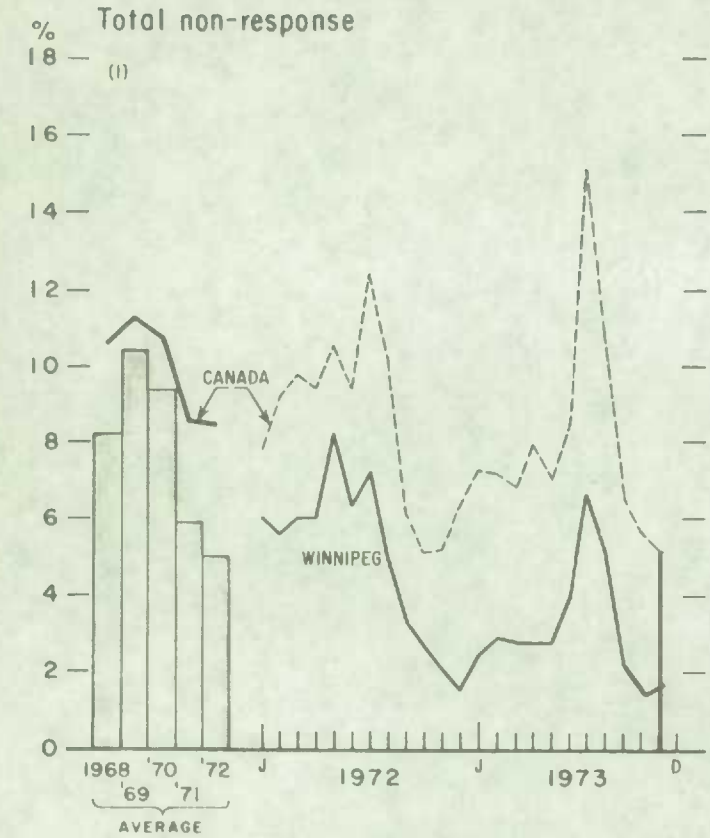
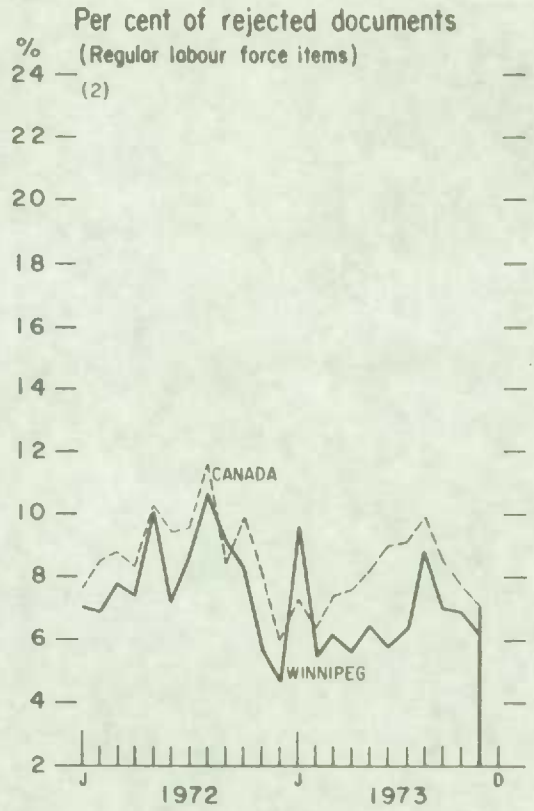
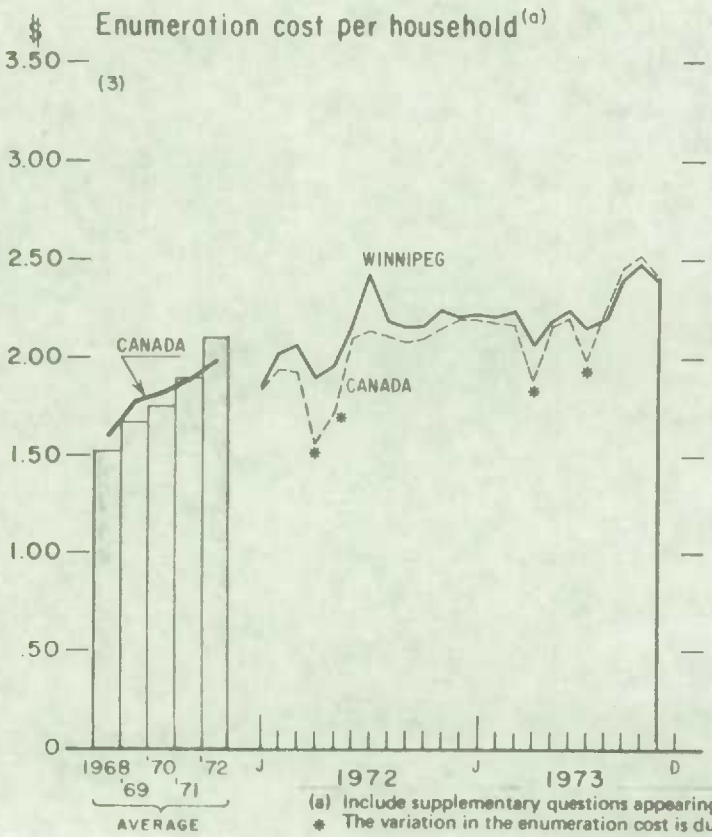
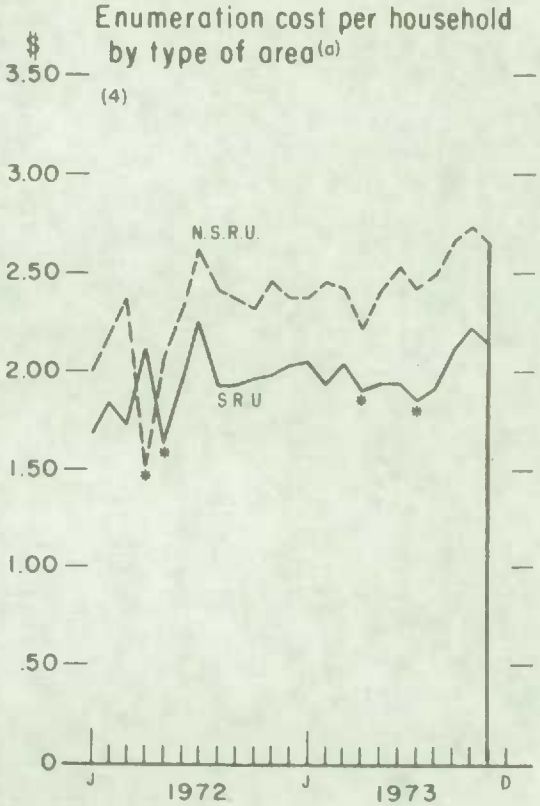
Winnipeg Regional Office









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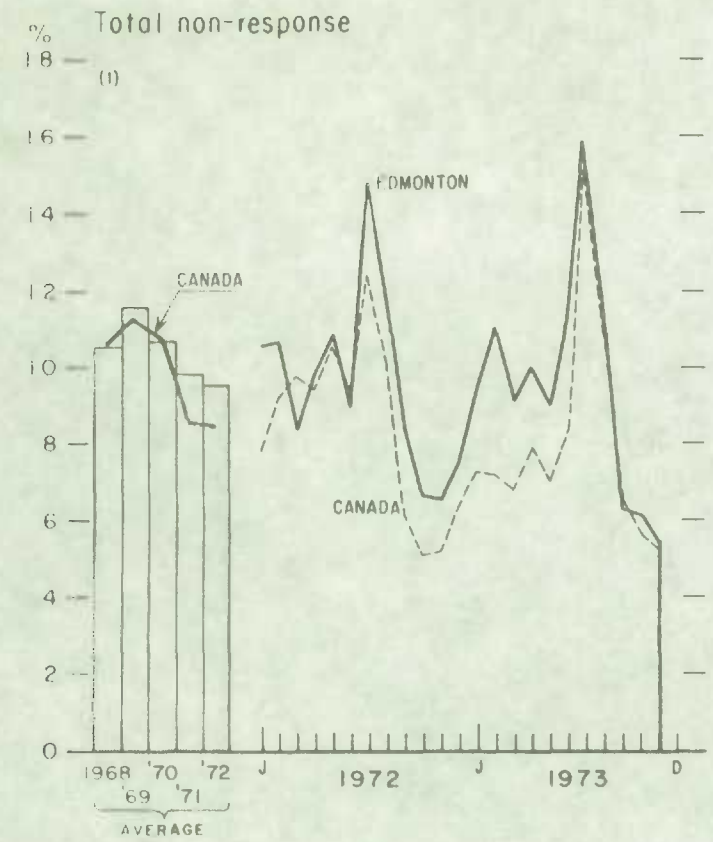
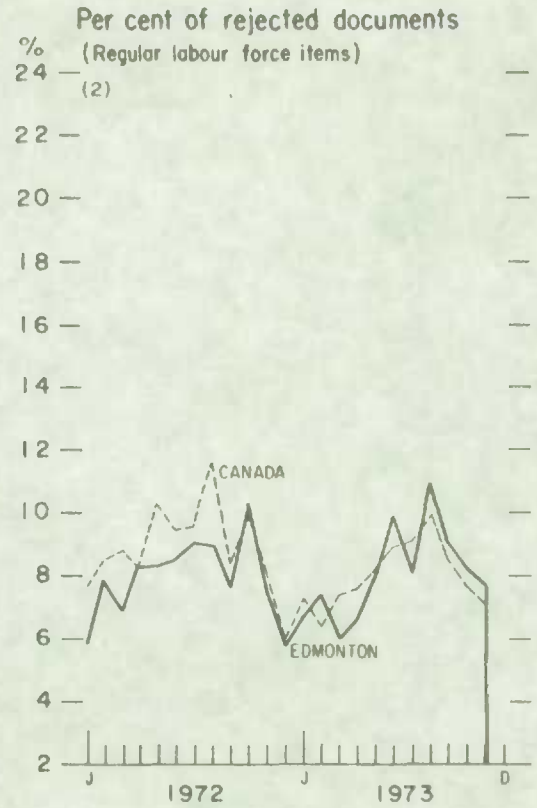
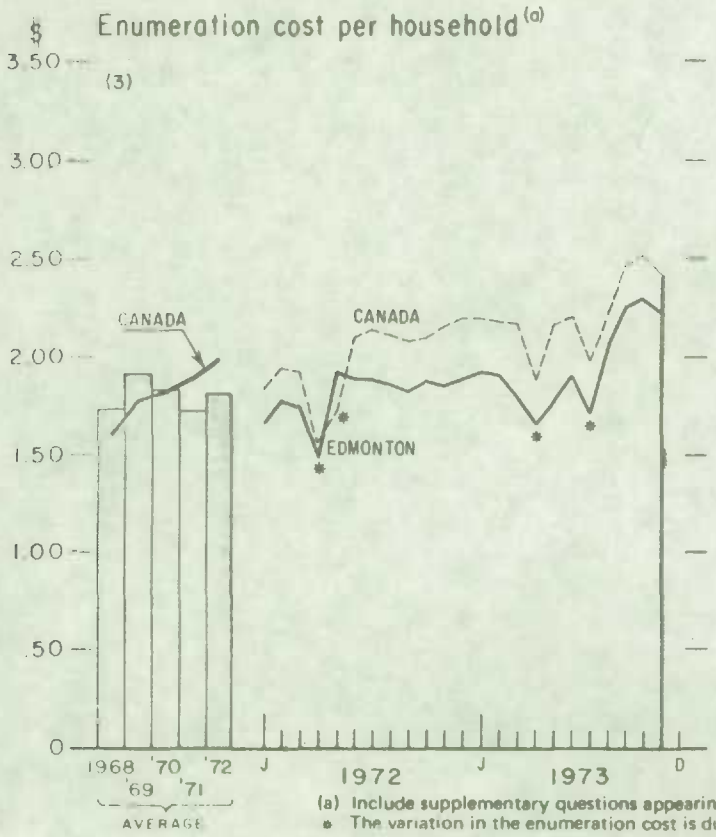
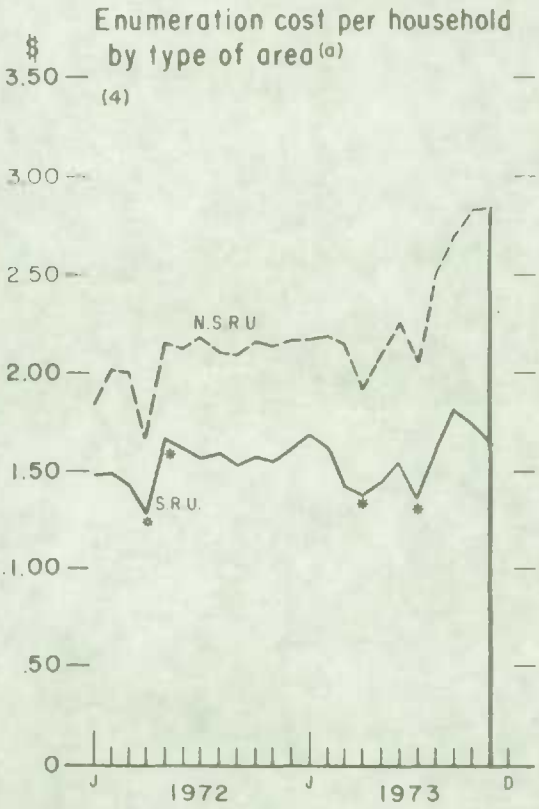
Edmonton Regional Office









(a) Include supplementary questions appearing on the LFS regular schedule

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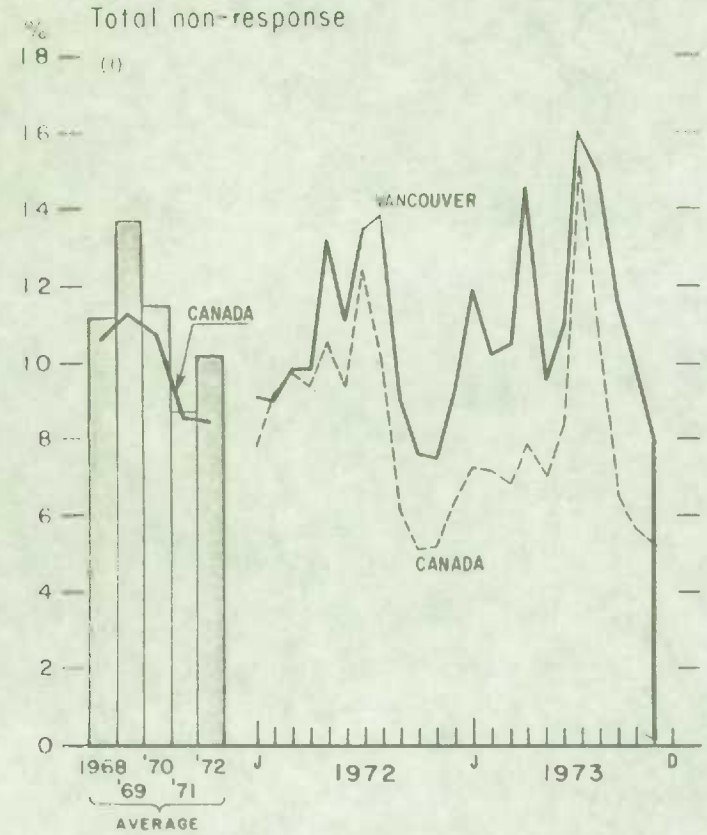
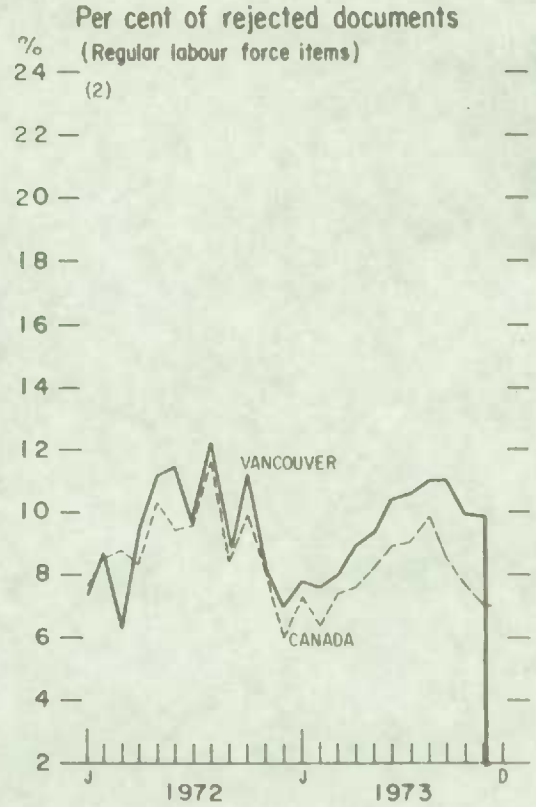
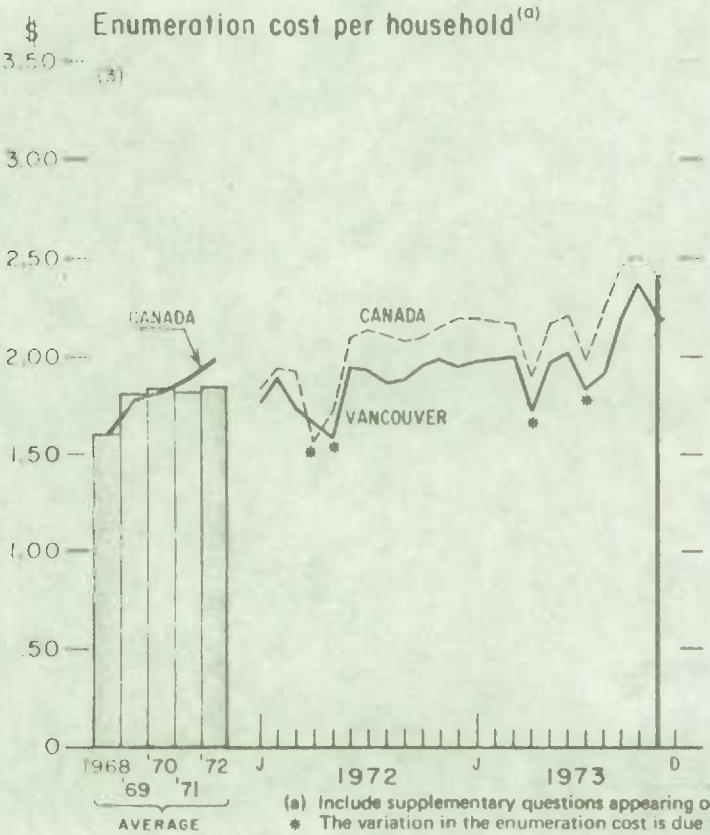
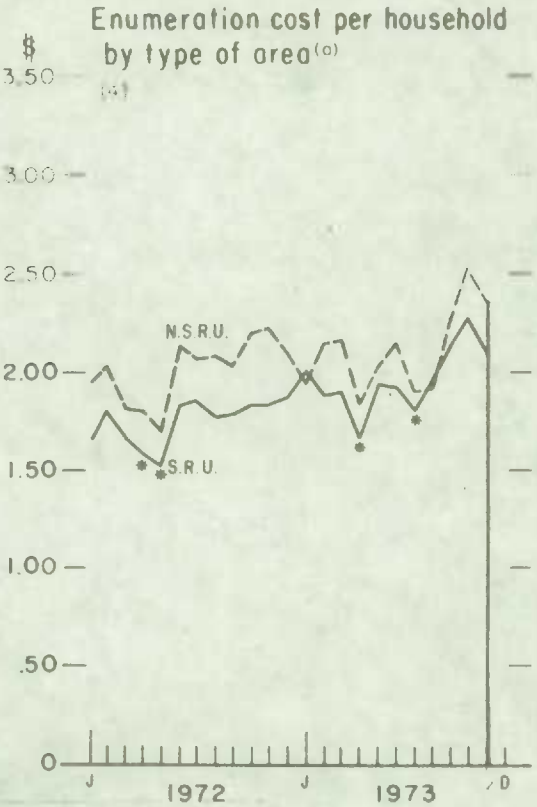
Vancouver Regional Office









(a) Include supplementary questions appearing on the LFS regular schedule

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Non-Response Rates by Component, Canada and the Regional Offices
October and November 1971, 1972 and 1973

	1973		1972		1971	
	Nov.	Oct.	Nov.	Oct.	Nov.	Oct.
Total						
Canada	5.2	5.7	5.2	5.1	6.1	7.1
St. John's	2.7	3.3	3.9	3.4	6.6	6.1
Halifax	5.5	5.5	5.7	5.5	4.6	6.9
Montreal	6.3	6.4	5.6	5.3	5.4	6.8
Ottawa	5.8	6.2	3.8	3.3	5.9	5.2
Toronto	4.5	4.9	4.3	4.4	7.8	9.0
Winnipeg	1.8	1.6	2.1	2.7	4.0	4.4
Edmonton	5.4	6.1	6.5	6.6	7.8	8.0
Vancouver	7.9	10.2	7.5	7.6	6.6	7.1
Temporarily Absent						
Canada	1.2	1.3	1.3	1.3	1.4	1.7
St. John's	0.5	0.9	1.3	1.4	2.2	2.2
Halifax	1.1	1.5	1.2	1.4	1.1	1.6
Montreal	1.4	1.1	0.9	0.7	0.7	1.2
Ottawa	1.2	1.0	1.4	1.0	2.0	1.8
Toronto	1.4	1.2	1.2	1.2	1.4	1.5
Winnipeg	0.8	0.8	1.1	1.3	1.0	1.4
Edmonton	1.2	1.2	2.1	1.9	2.4	2.3
Vancouver	1.3	2.4	1.5	2.1	1.4	2.3
No one home						
Canada	1.6	1.9	2.0	1.8	2.3	2.6
St. John's	1.0	1.5	1.6	0.6	2.5	1.8
Halifax	1.8	1.6	2.0	1.6	1.9	2.6
Montreal	2.2	2.6	2.4	2.4	2.8	2.6
Ottawa	2.8	3.2	1.1	1.0	2.0	2.0
Toronto	1.2	1.6	1.8	1.3	3.1	3.5
Winnipeg	0.4	0.3	0.4	0.5	0.7	1.4
Edmonton	1.5	1.7	2.4	2.9	2.5	3.0
Vancouver	1.9	3.1	3.0	3.0	2.4	2.2
Refusals						
Canada	1.9	2.0	1.4	1.4	1.4	1.5
St. John's	0.6	0.5	0.3	0.5	0.7	0.6
Halifax	1.9	2.1	1.9	1.7	1.2	1.6
Montreal	2.2	2.0	1.7	1.7	1.2	1.4
Ottawa	1.5	1.6	1.1	1.1	1.2	1.2
Toronto	1.6	1.7	0.9	1.1	1.6	1.9
Winnipeg	0.5	0.4	0.4	0.7	1.7	1.3
Edmonton	2.3	2.3	1.6	1.5	1.2	1.3
Vancouver	3.5	4.0	2.1	1.8	2.1	1.8
Other						
Canada	0.5	0.5	0.5	0.6	1.0	1.3
St. John's	0.6	0.4	0.7	0.9	1.2	1.5
Halifax	0.7	0.3	0.6	0.8	0.4	1.1
Montreal	0.5	0.7	0.6	0.5	0.7	1.6
Ottawa	0.3	0.4	0.2	0.2	0.7	0.2
Toronto	0.3	0.4	0.4	0.8	1.7	2.1
Winnipeg	0.1	0.1	0.2	0.2	0.6	0.3
Edmonton	0.4	0.9	0.4	0.3	1.7	1.4
Vancouver	1.2	0.7	0.9	0.7	0.7	0.3

FIELD DIVISION — DIVISION DES OPÉRATIONS RÉGIONALES

LFS 7

SURVEY No. 281
ENQUÊTE

LABOUR FORCE SURVEY
ENQUÊTE SUR LA MAIN-D'OEUVRE

ANALYSIS OF REJECTED DOCUMENTS
ANALYSE DES DOCUMENTS REJETÉS

November 1973 novembre

	CANADA	ST.JOHN'S	HALIFAX	MONTRÉAL	OTTAWA	TORONTO	WINNIPEG	EDMONTON	VANCOUVER
TOTAL DOCUMENTS RECEIVED TOTAL DES DOCUMENTS REÇUS	76,786	4,516	13,187	14,745	4,822	15,830	7,142	8,521	8,023
REJECTED DOCUMENTS DOCUMENTS REJETÉS	7,749	437	1,389	1,144	431	1,746	655	852	1,095
% REJECTED DOCUMENTS POURCENTAGE DES DOCUMENTS REJETÉS	10.1	9.7	10.5	7.8	8.9	11.0	9.2	10.0	13.7
SUPPLEMENTARY ITEMS ARTICLES SUPPLÉMENTAIRES									
REJECTED DOCUMENTS DOCUMENTS REJETÉS	2,291	166	404	313	137	564	211	193	303
% OF TOTAL DOCUMENTS POURCENTAGE DU TOTAL DES DOCUMENTS	3.0	3.7	3.1	2.1	2.8	3.6	3.0	2.3	3.8
% OF REJECTED DOCUMENTS POURCENTAGE DES DOCUMENTS REJETÉS	29.6	38.0	29.1	27.4	31.8	32.3	32.2	22.7	27.7
LABOUR FORCE ITEMS ARTICLES DE LA MAIN-D'OEUVRE									
REJECTED DOCUMENTS DOCUMENTS REJETÉS	5,458	271	985	831	294	1182	444	659	792
% OF TOTAL DOCUMENTS POURCENTAGE DE TOUS LES DOCUMENTS	7.1	6.0	7.4	5.7	6.1	7.4	6.2	7.7	9.9
% OF REJECTED DOCUMENTS POURCENTAGE DES DOCUMENTS REJETÉS	70.4	62.0	70.9	72.6	68.2	67.7	67.8	77.3	72.3
No. OF CARELESS ERRORS NOMBRE DE FAUTES D'INATTENTION	3,156	180	459	464	81	764	273	328	607
AVE. PER DOCUMENT MOYENNE PAR DOCUMENT	.041	.040	.035	.031	.017	.048	.038	.038	.076
AVE. PER REJECTED DOCUMENT MOYENNE PAR DOCUMENT REJETÉ	.407	.412	.330	.406	.188	.438	.417	.385	.554
No. OF BLANKS IN ID. NOMBRE DE BLANCS À L'IDENTIFICATION	1,381	77	136	205	28	246	145	166	378
AVERAGE PER DOCUMENT MOYENNE PAR DOCUMENT	.018	.017	.010	.014	.006	.016	.020	.019	.047
AVE. PER REJECTED DOCUMENT MOYENNE PAR DOCUMENT REJETÉ	.178	.176	.098	.179	.065	.141	.221	.195	.345

CARELESS ERROR: sum of errors for items 1 to 10 and 24, 25, and 26 on the LFS document.
FAUTE D'INATTENTION: total des erreurs aux articles 1-10 et 24, 25 et 26 sur le document LFS.

Enumeration Cost per Household by Regional Office, S.R.U. and N.S.R.U.
June to November 1973 and 1972

	1973						1972					
	Nov.	Oct.	Sept.	Aug.	July	June	Nov.	Oct.	Sept.	Aug.	July	June
All areas												
Canada ..... %	2.41	2.52	2.46	2.24	1.98	2.20	2.15	2.10	2.08	2.11	2.13	2.10
St. John's ..... %	2.75	2.89	2.71	2.50	2.10	2.50	2.42	2.35	2.27	2.40	2.38	2.27
Halifax ..... %	2.29	2.29	2.29	2.10	1.89	2.02	1.80	1.75	1.77	1.77	1.83	1.67
Montreal ..... %	2.58	2.70	2.66	2.41	2.07	2.30	2.28	2.27	2.29	2.36	2.25	2.31
Ottawa ..... %	2.53	2.66	2.68	2.44	2.07	2.49	2.38	2.26	2.29	2.25	2.31	2.28
Toronto ..... %	2.47	2.67	2.60	2.37	2.09	2.37	2.40	2.29	2.26	2.26	2.22	2.30
Winnipeg ..... %	2.39	2.48	2.40	2.22	2.16	2.25	2.24	2.16	2.16	2.19	2.43	2.16
Edmonton ..... %	2.22	2.29	2.24	2.06	1.72	1.91	1.85	1.88	1.83	1.86	1.89	1.89
Vancouver ..... %	2.19	2.37	2.20	1.92	1.84	2.01	1.99	1.97	1.89	1.88	1.94	1.95
S.R.U.												
Canada ..... %	2.24	2.35	2.32	2.09	1.85	2.06	2.04	1.99	1.99	1.98	2.01	1.98
St. John's ..... %	2.15	2.37	2.17	2.20	1.85	2.27	1.98	1.92	1.98	2.08	2.30	2.13
Halifax ..... %	2.16	2.07	2.01	1.88	1.89	1.80	1.63	1.58	1.66	1.66	1.63	1.45
Montreal ..... %	2.42	2.55	2.52	2.21	1.88	2.13	2.23	2.18	2.20	2.22	2.15	2.19
Ottawa ..... %	2.35	2.50	2.56	2.28	2.03	2.36	2.33	2.19	2.27	2.14	2.30	2.23
Toronto ..... %	2.43	2.59	2.57	2.32	2.06	2.31	2.30	2.23	2.19	2.17	2.14	2.22
Winnipeg ..... %	2.13	2.21	2.12	1.92	1.86	1.94	1.98	1.97	1.93	1.93	2.25	1.96
Edmonton ..... %	1.63	1.74	1.81	1.60	1.37	1.55	1.55	1.57	1.53	1.59	1.57	1.61
Vancouver ..... %	2.08	2.27	2.14	1.94	1.80	1.92	1.84	1.84	1.79	1.77	1.86	1.84
N.S.R.U.												
Canada ..... %	2.64	2.74	2.65	2.44	2.15	2.40	2.29	2.23	2.19	2.26	2.27	2.22
St. John's ..... %	2.96	3.08	2.91	2.59	2.20	2.60	2.58	2.52	2.36	2.52	2.40	2.31
Halifax ..... %	2.37	2.44	2.47	2.24	2.00	2.16	1.90	1.86	1.85	1.85	1.96	1.83
Montreal ..... %	2.88	2.96	2.92	2.80	2.43	2.64	2.39	2.43	2.46	2.63	2.44	2.55
Ottawa ..... %	2.79	2.90	2.85	2.67	2.13	2.72	2.45	2.37	2.30	2.41	2.33	2.34
Toronto ..... %	2.59	2.86	2.72	2.51	2.16	2.54	2.64	2.43	2.42	2.53	2.44	2.53
Winnipeg ..... %	2.64	2.73	2.66	2.48	2.41	2.52	2.46	2.32	2.37	2.42	2.61	2.32
Edmonton ..... %	2.84	2.83	2.68	2.51	2.05	2.26	2.14	2.16	2.09	2.10	2.18	2.12
Vancouver ..... %	2.35	2.53	2.27	1.91	1.90	2.15	2.23	2.20	2.03	2.08	2.07	2.14

	Month-to-month change								Year-to-year change			
	1973				1972							
	Oct. to Nov.	Sept. to Oct.	Aug. to Sept.	July to Aug.	Oct. to Nov.	Sept. to Oct.	Aug. to Sept.	July to Aug.	Nov. 1972 to Nov. 1973	Oct. 1972 to Oct. 1973	Sept. 1972 to Sept. 1973	Aug. 1972 to Aug. 1973
All areas												
Canada ..... %	− 0.11	+ 0.06	+ 0.22	+ 0.26	+ 0.05	+ 0.02	− 0.03	− 0.02	+ 0.26	+ 0.42	+ 0.38	+ 0.13
St. John's ..... %	− 0.14	+ 0.18	+ 0.21	+ 0.40	+ 0.07	+ 0.08	− 0.13	+ 0.02	+ 0.33	+ 0.54	+ 0.44	+ 0.10
Halifax ..... %	−	−	+ 0.19	+ 0.21	+ 0.05	− 0.02	−	− 0.06	+ 0.49	+ 0.54	+ 0.52	+ 0.33
Montreal ..... %	− 0.12	+ 0.04	+ 0.25	+ 0.34	+ 0.01	− 0.02	− 0.07	+ 0.11	+ 0.30	+ 0.43	+ 0.37	+ 0.05
Ottawa ..... %	− 0.13	− 0.02	+ 0.24	+ 0.37	+ 0.12	− 0.03	+ 0.04	− 0.06	+ 0.15	+ 0.40	+ 0.39	+ 0.19
Toronto ..... %	− 0.20	+ 0.07	+ 0.23	+ 0.28	+ 0.11	+ 0.03	−	+ 0.04	+ 0.07	+ 0.38	+ 0.34	+ 0.11
Winnipeg ..... %	− 0.09	+ 0.08	+ 0.18	+ 0.06	+ 0.08	−	− 0.03	− 0.24	+ 0.15	+ 0.32	+ 0.24	+ 0.03
Edmonton ..... %	− 0.07	+ 0.05	+ 0.18	+ 0.34	− 0.03	+ 0.05	− 0.03	− 0.03	+ 0.37	+ 0.41	+ 0.41	+ 0.20
Vancouver ..... %	− 0.18	+ 0.17	+ 0.28	+ 0.08	+ 0.02	+ 0.08	+ 0.01	− 0.06	+ 0.20	+ 0.40	+ 0.31	+ 0.04
S.R.U.												
Canada ..... %	− 0.11	+ 0.03	+ 0.23	+ 0.24	+ 0.05	−	+ 0.01	− 0.03	+ 0.20	+ 0.36	+ 0.33	+ 0.11
St. John's ..... %	− 0.22	+ 0.20	− 0.03	+ 0.35	+ 0.06	− 0.06	− 0.10	− 0.22	+ 0.17	+ 0.45	+ 0.19	+ 0.12
Halifax ..... %	+ 0.09	+ 0.06	+ 0.13	− 0.01	+ 0.05	− 0.08	−	+ 0.03	+ 0.53	+ 0.49	+ 0.35	+ 0.22
Montreal ..... %	− 0.13	+ 0.03	+ 0.31	+ 0.33	+ 0.05	− 0.02	− 0.02	+ 0.07	+ 0.19	+ 0.37	+ 0.32	− 0.01
Ottawa ..... %	− 0.15	− 0.06	+ 0.28	+ 0.25	+ 0.14	− 0.08	+ 0.13	− 0.16	+ 0.02	+ 0.31	+ 0.29	+ 0.14
Toronto ..... %	− 0.16	+ 0.02	+ 0.25	+ 0.26	+ 0.07	+ 0.04	+ 0.02	+ 0.03	+ 0.13	+ 0.36	+ 0.38	+ 0.15
Winnipeg ..... %	− 0.08	+ 0.09	+ 0.20	+ 0.06	+ 0.01	+ 0.04	−	− 0.32	+ 0.15	+ 0.24	+ 0.19	− 0.01
Edmonton ..... %	− 0.11	− 0.07	+ 0.21	+ 0.23	− 0.02	+ 0.04	− 0.06	+ 0.02	+ 0.08	+ 0.17	+ 0.28	+ 0.01
Vancouver ..... %	− 0.19	+ 0.13	+ 0.20	+ 0.14	−	+ 0.05	+ 0.02	− 0.09	+ 0.24	+ 0.43	+ 0.35	+ 0.17
N.S.R.U.												
Canada ..... $	− 0.10	+ 0.09	+ 0.21	+ 0.29	+ 0.06	+ 0.04	− 0.07	− 0.01	+ 0.35	+ 0.51	+ 0.46	+ 0.18
St. John's ..... $	− 0.12	+ 0.17	+ 0.32	+ 0.39	+ 0.06	+ 0.16	− 0.16	+ 0.12	+ 0.38	+ 0.56	+ 0.55	+ 0.07
Halifax ..... $	− 0.07	− 0.03	+ 0.23	+ 0.24	+ 0.04	+ 0.01	−	− 0.11	+ 0.47	+ 0.58	+ 0.62	+ 0.39
Montreal ..... $	− 0.08	+ 0.04	+ 0.12	+ 0.37	− 0.04	− 0.03	− 0.17	+ 0.19	+ 0.49	+ 0.53	+ 0.46	+ 0.17
Ottawa ..... $	− 0.11	+ 0.05	+ 0.18	+ 0.54	+ 0.08	+ 0.07	− 0.11	+ 0.08	+ 0.34	+ 0.53	+ 0.55	+ 0.26
Toronto ..... $	− 0.27	+ 0.14	+ 0.21	+ 0.35	+ 0.21	+ 0.01	− 0.11	+ 0.09	− 0.05	+ 0.43	+ 0.30	− 0.02
Winnipeg ..... $	− 0.09	+ 0.07	+ 0.18	+ 0.07	+ 0.14	− 0.05	− 0.05	− 0.19	+ 0.18	+ 0.41	+ 0.29	+ 0.06
Edmonton ..... $	+ 0.01	+ 0.15	+ 0.17	+ 0.46	− 0.02	+ 0.07	− 0.01	− 0.08	+ 0.70	+ 0.67	+ 0.59	+ 0.41
Vancouver ..... $	− 0.18	+ 0.26	+ 0.36	+ 0.01	+ 0.03	+ 0.17	− 0.05	+ 0.01	+ 0.12	+ 0.33	+ 0.24	− 0.17

(1) The variation in the enumeration cost for July 1973 is due to a major supplementary survey being conducted in conjunction with the regular Labour Force Survey.

Note: Slippage rates have been deleted temporarily from this table as historical rates are not yet available on the revised basis. However, a table is given on next page giving slippage rates for September and October 1973 calculated on population projections based on 1971 Census.

DEFINITIONS

RELATED TO SECTION 1A

Slippage - population slippage is defined as the percentage difference between the Census population projection, Pp (preliminary projections based on the 1971 Census) for a given month and the population estimate $\hat{P}p$ derived from the Labour Force Survey sample for the same month. It is given by

$$\frac{Pp - \hat{P}p}{Pp} \cdot 100$$

RELATED TO SECTION 1B

Total non-response - proportion of households which were not interviewed due to lack of co-operation or their unavailability to the survey interviewer.

RELATED TO SECTION 1C

Variance - There is a certain amount of error present in any estimate obtained from a sample, (due to the lack of complete information about the population). The average of the estimates, obtained from the various possible samples, is called the expected value of the estimate. If the difference between an estimate and its expected value is squared and this squared difference is averaged over all possible samples which could be selected from the sample frame, we obtain the sampling variance. The square root of the sampling variance is called the standard deviation. The coefficient of variation of an estimate is defined to be the standard deviation of the estimate divided by the estimate times 100 to convert to a percentage. If the expected value of an estimate is not equal to the true population value then the estimate is said to be biased. Among the causes of this bias are non-response, slippage and processing errors. The square of the difference between an estimate and the true population value averaged over all possible samples from the sample frame is called the mean square error. The variance estimate for a characteristic is influenced by changes in the population size, the sample size, and the frequency of the characteristic being considered. For these reasons the variance estimates should be standardized; the binomial factor is one such standardization. The binomial factor is defined to be the ratio of the variance estimate to an estimate of what the variance would be if a similar sample has been obtained through a simple random sampling procedure. The binomial factor measures the behaviour of the sample design relative to a simple random sample as far as the characteristic is concerned.

RELATED TO SECTION 1D

Percentage of Rejected Documents - The Summary Table and Charts give the percentage of labour force documents requiring clerical edits due to missing or inconsistent entries in the regular labour force items.

A complete analysis of rejects for the current month, including rejects for the additional questions (supplementary), is given in a separate table. It should be noted that the total reject rate is affected considerably by the supplementary questions which vary in complexity from one month to the next.

Careless Errors - The term "careless errors" refers to omissions, poor marks and inconsistent entries on the Labour Force schedule for identification, sex, marital status, relationship to head and age as taken from the entries on the Household Record Card, plus the failure to answer item 26, "Was this person interviewed?"

RELATED TO SECTION 1E

Enumeration Cost per Household - The per household costs are calculated using the total number of households sampled for the survey in relation to the cost incurred to do the interviewing, in terms of fees paid to the interviewer (hourly rated employee) and the interviewer expenses to cover the assignment (mileage, etc).

Interviewing refers to obtaining the information by personal visit to the household, or by telephoning the household to obtain the information, for the LF survey and for supplementary questions added to the LF document for the current month.

Variances in the Labour Force Survey

Introduction

Another important quality measure pertaining to the statistics is that of sampling variance, defined by the mean square deviation of statistics over all possible samples from the expected value over all possible samples which may be selected from the sample frame. Due to the well designed sampling procedure and to careful processing of the data, the bias of this statistic should be small. The estimated variances, the standard deviations, and the coefficients of variation are calculated each month for a set of characteristics. From the estimated standard deviations and the coefficients of variation confidence intervals for published statistics, ignoring the effect of non-sampling errors, may be obtained under the assumption that estimated totals are normally distributed about the true population value. Thus if it is found that an unemployed estimate possesses a coefficient of variation of 3% then an unemployed estimate may vary 6% (2 standard deviations) about the true population value in either direction in 95% of the samples that could be drawn from the LFS frame.

Rough confidence intervals may be obtained from the lettered symbols given in the monthly publications (The Labour Force: Catalogue 71-001). Due to time deadlines for the release of these publications the lettered symbols are based on the average of the monthly coefficients of variation for the previous year. The lettered symbol, which indicates a range in which the coefficient of variation is expected to fall, gives the user an indication of the reliability of the estimate.

From any particular survey the obtained coefficient of variation will not necessarily fall within the range indicated by the lettered symbol found in the publication because of 1) the sampling variance of the estimated coefficient of variation and 2) the seasonal effects which are not reflected in the published lettered symbols.

Example: For an estimate of 175,000 with a coefficient of variation of 2.47% then in 95% of all different samples that could be selected from the sample frame, the estimate would deviate from the true population value not more than 8,645.

The complexity of the formulas for the theoretical variance based on the multi-stage sampling procedure for the Labour Force Survey make it difficult to determine from the calculations alone if the variances are high considering the sample design or the frequency of the characteristic even if they are high for purposes of analysis. Because coefficients of variation decrease with increases in the

population, the sample size and the frequency of the characteristic, the calculated variances should be compared with some standard values.

Assuming a similar number of persons were drawn at random in each province one such standard value is the corresponding random sample variance, which is a function of the population size, the sample size, and the frequency of the characteristic. The ratio of the estimated variance from the computer programs to this random sample variance or the binomial factor is calculated monthly for each characteristic.

The higher the factor the worse the sample design relative to a simple random sample as far as the characteristic is concerned. A high factor may be the result of limitations imposed by cost restrictions and not the result of a bad sample design.

High factors do indicate where further analysis should be undertaken and where there is potential for improvement in the present sample design. High variances at provincial levels are frequently attributable to one or two PSUs so that for quality studies, the analysis will often centre around studies of sub-provincial contributions to the total variance. In table 1 are included the binomial factors and the coefficients of variation for several estimates.

Definitions

Sampling variance: The average of squared deviations of statistics over all possible samples from the average value of the statistics over all possible samples (neglecting the effect of non-sampling errors).

Non-sampling errors: Deviations from the true (but usually unknown) value of a statistic caused by factors other than sampling (such as non-response, slippage, coding errors).

Standard deviation: The square root of the sampling variance.

Coefficient of variation: The standard deviation expressed as a percent of the estimate of a quantity, sometimes termed percent standard deviation.

Confidence intervals: The intervals in which the unknown value of the population to be estimated from a sample may be expected to lie a given percent of the time (commonly 95% of the time).

Binomial Factor (design effect): The ratio of the variance of a statistic as estimated from the sample considering the sample design compared with the variance of a statistic obtained in a simple random sample of the same size.

Reliability: Not really a statistical term but referring in general to the standard deviation, variance of a statistic, and confidence interval. In Table 1, the coefficient of variation is used as a measure of the reliability of estimates.

The following table presents some results of the monthly Labour Force Survey. Included are estimates, coefficients of variation and binomial factors for the characteristics Employed, Unemployed and "In Labour Force".

Table 1: Estimates, Their Coefficients of Variation and Their Binomial Factors for Canada and by Province for November, 1973

	Population Estimate	Employed				Unemployed				In Labour Force			
		Estimate	C.V.	Symbol	B.F.	Estimate	C.V.	Symbol	B.F.	Estimate	C.V.	Symbol	B.F.
Canada	16,281	8,829	.38	A	1.21	468	2.59	D	1.48	9,297	0.35	A	1.19
Nfld.	374	156	2.20	C	1.70	21	7.64	E	1.73	177	1.88	C	1.56
P.E.I.	80	36	2.63	D	0.67	3	27.53	H	3.90	40	2.10	C	0.49
N.S.	561	270	1.25	C	1.07	17	9.26	E	2.06	288	1.19	C	1.10
N.B.	468	219	1.64	C	1.49	19	9.74	E	2.70	238	1.31	C	1.13
Que.	4,558	2,381	.85	B	1.35	171	4.41	D	1.31	2,552	0.77	B	1.29
Ont.	5,938	3,408	.63	B	1.18	117	5.54	E	1.35	3,525	0.62	B	1.24
Man.	713	391	1.75	C	1.61	16	10.74	F	1.13	406	1.60	C	1.48
Sask.	653	344	1.29	C	0.81	12	11.12	F	0.96	356	1.23	C	0.80
Alta.	1,195	688	.84	B	0.70	29	7.53	E	0.99	717	0.84	B	0.77
B.C.	1,741	936	.99	B	1.05	62	8.79	E	2.59	998	0.83	B	0.86

C.V. - Coefficient of Variation
B.F. - Binomial Factor
Estimates in Thousands

Alphabetic Symbol	Percent of Estimates at One Standard Deviation
A	0.0 - 0.5%
B	0.6 - 1.0%
C	1.1 - 2.5%
D	2.6 - 5.0%
E	5.1 - 10.0%
F	10.1 - 16.5%
G	16.6 - 25.0%
H	25.1 - 33.3%
J	33.4 - 50.0%
K	50.1 +

Analysis of Sub-Provincial Contributions to the Variance

On the basis of the binomial factor corresponding to the estimated total of a characteristic, the decision is made whether to study sub-provincial contributions to the variance of this characteristic or not. A high binomial factor or a substantial increase in the factor over the corresponding factors for the previous months indicate that a study should be carried out to determine the origins of the high variance or increase in the factor.

A portion of the provincial variance is contributed by each subunit or pair of PSUs and these contributions tallied over all subunits and pairs of PSUs yield the variance estimate of the characteristic total at the provincial level. The purpose of the analysis of subprovincial contributions to the variance is to determine those subunits or PSUs where the portion of the variance contributed is excessively large relative to a desired portion based on the population and sampling ratio in the sub-provincial area. Such "problem areas" are determined by a statistical test of hypothesis.

The results of the analysis for those characteristics and provinces, as determined by their binomial factors, are presented in Tables 2a, 2b, etc. The percentage of the variance contributed is simply the contribution by the pair of PSUs or subunit expressed as a percentage of the provincial variance. The desired percentage contribution is the ratio of a weighted population estimate of the subunit or stratum to a weighted total population estimate of the province expressed as a percentage. The weights (a weight of 1 for NSRU PSUs and a weight of 1.5 for SRU subunits) adjust the population estimates to take into account the difference in sampling ratios between NSRU and SRU parts of the province.

Analysis of Subprovincial Contributions to the Variance for November, 1973

The binomial variance for the characteristic Unemployed in Nova Scotia decreased from 2.55 in October to 2.06 in November but this value is still high in comparison with other provinces. The pair of PSUs, 21062 and 21064, and subunit 22201 also contributed a disproportionately large portion of the variance last month.

Table 2a) Actual vs. Desired Contribution to the N.S. Variance of Unemployed by PSUs and Subunits

PSUs or Subunits	Percentage of the Variance Contributed	Desired Percentage Contribution
22022 & 22024	5.9	2.1
21002 & 21007	12.6	2.3
21062 & 21064	21.2	2.7
20102	11.1	1.5
22201	7.2	2.2
All other PSUs and Subunits	42.0	89.2

In New Brunswick the binomial factor of 2.70 for the estimated total of Unemployed indicates that a study of the subprovincial contributions to the variance should be made. PSUs 30002 and 30004 have contributed an excessively large portion of the variance in relation to its desired contribution.

Table 2b) Actual vs. Desired Contribution to the N.B. Variance of Unemployed by PSUs and Subunits

PSUs or Subunits	Percentage of the Variance Contributed	Desired Percentage Contribution
30002 & 30004	45.5	4.3
All other PSUs and Subunits	54.5	95.7

In the province of Quebec the binomial factor for Employed at 1.35 is considerably higher than last month's binomial factor of 0.96. An analysis of the subprovincial contributions to the variance resulted in the following subprovincial areas where an excessive contribution of the variance occurred.

Table 2c) Actual vs. Desired Contribution to the Quebec Variance of Employed by PSUs and Subunits

PSUs or Subunits	Percentage of the Variance Contributed	Desired Percentage Contribution
41004 & 41013	2.0	0.5
41063 & 41076	4.2	1.0
44002 & 44006	10.2	1.2
45070 & 45073	4.1	1.4
46025 & 46034	5.7	1.0
All other PSUs and Subunits	73.8	94.9

Also in the province of Quebec the binomial factor for the Unemployed estimate is 1.31 for the November data which is up considerably from the value of 1.09 for the October survey. The following pairs of PSUs or subunits contribute to the high variance (relative to the binomial variance) of the estimate of the Unemployed total.

Table 2d) Actual vs. Desired Contribution to the Quebec Variance of Unemployed by PSUs and Subunits

PSUs or Subunits	Percentage of the Variance Contributed	Desired Percentage Contribution
41004 & 41013	3.1	0.5
41044 & 41055	2.1	0.7
43002 & 43009	2.9	0.6
44044 & 44051	5.8	1.0
49026 & 49028	3.2	0.6
40101 - 40103	10.6	2.0
46401 - 46402	3.4	0.6
All other PSUs and Subunits	68.9	94.0

At 2.59 the binomial factor for the estimate of Unemployed in B.C. indicates that an analysis of the subprovincial contributions to the variance should be carried out. The results appear in the following table.

Table 2e) Actual vs. Desired Contribution to the B.C. Variance of Unemployed by PSUs and Subunits

PSUs or Subunits	Percentage of the Variance Contributed	Desired Percentage Contribution
90008 & 90011	6.2	1.8
92003 & 92013	9.8	2.8
94022 & 94026	12.8	2.7
95021 & 95028	12.5	3.0
95201	3.8	1.2

In the November quality report which covered October's data, a subunit 95201-Nanaimo in B.C. - contributed 22.9% of the variance in comparison to a desired contribution of 1.2%. Examination of the individual records revealed the following facts.

	1st Component	2nd Component
Population Estimate (14 and over)	15,203	3,099
Estimate of Unemployed Total	2,416	238
Proportion Unemployed	.159	.077

The contribution to the variance of Unemployed at the provincial level for this subunit is due to the fact that

1) the components of this paired area are poorly defined seeing that the population estimates in the two halves are so different. This defect in the calculation method is being corrected.

2) the proportion of persons unemployed likewise varies drastically between the two components.

In PSUs 21062 & 21064 in Nova Scotia, 30002 & 30004 in New Brunswick, and 44002 & 44006 in Quebec there were large discrepancies between the desired percentage contribution and the actual percentage of the variance contributed. Detailed analysis into these discrepancies will be undertaken and the results included in the next quality report.

Appendix III

NON-RESPONSE

The contents of this appendix are taken from publication NR73-11 (November 1973), Non-Response Rates in the Canadian Labour Force Survey, prepared by T. Newton, Household Surveys Development Staff, and E.T. McLeod of Field Division.

Non-Response Rates

I. Introduction

There are a number of ways of measuring the quality of the Labour Force Survey. One such method is the calculation of non-response rates. The sampling variability of weighted up statistics is inversely proportional to the response rate so that published figures based on a sample with only 80% response rate (20% non-response rate) will have 90/80 or 1.125 times the sampling variability of corresponding figures based on the same sample with 90% response rate (or 10% non-response rate). Together with the increase in sampling variability caused by higher non-response rates there is also a possible increase in the mean square error as a result of the non-response bias. If the characteristics of non-respondents are significantly different from those of respondents, then the higher the non-response rate, the greater the contribution to the mean square error by the non-response bias. The extent of this bias is unknown at present but must be obtained from outside sources of similar data or from special experiments on non-response characteristics.

The non-response rates are presented in the form of graphs for Canada and for regional offices. The rate of non-response is given for each of the four components[1] and for total non-response by month and year.

Non-response follows a marked pattern seasonally, generally peaking in the summer months and declining in the spring and autumn (Graph G1). The seasonality effect is caused by the "temporarily absent[1]" component which increases sharply during the summer months when people are generally away on vacation (Graph G1).

II. Format of Non-Response Graphs and Monthly Meeting

The non-response rate for each regional office is presented by component on a separate page. This format facilitates the examination of the contributions of each component of non-response to the total non-response. In this form, comparison of regional offices can also be made.

The monthly meeting on non-response with F.T. Newton, Labour Force Methodology Section and E.T. McLeod, Field Division, deals with the more pronounced movements in the current non-response data.

Commencing with the report on January, 1973, non-response bar charts have been included to show the non-response for each Economic Region (E.R.) in each regional office. The R.O. levels, in total, are shown in a chart under the section headed Canada. Table 1, contains, for Canada and each regional office, the total non-response and each of its components.

[1] See definitions on Page 2

Definitions

Total households includes all sampled households but excluding vacant dwellings, households not to be interviewed, etc.

Non-response is defined as the proportion of total households which were not interviewed for the reasons shown and is the sum of the four components given below.

1 Temporarily absent. When all household members are away for the entire interview week. (T.A.)

2 No one home. When after a reasonable number of callbacks, there is no responsible member to interview. (N_1)

3 Refusal. When a responsible member of the household definitely refuses to provide the survey information requested. (N_2)

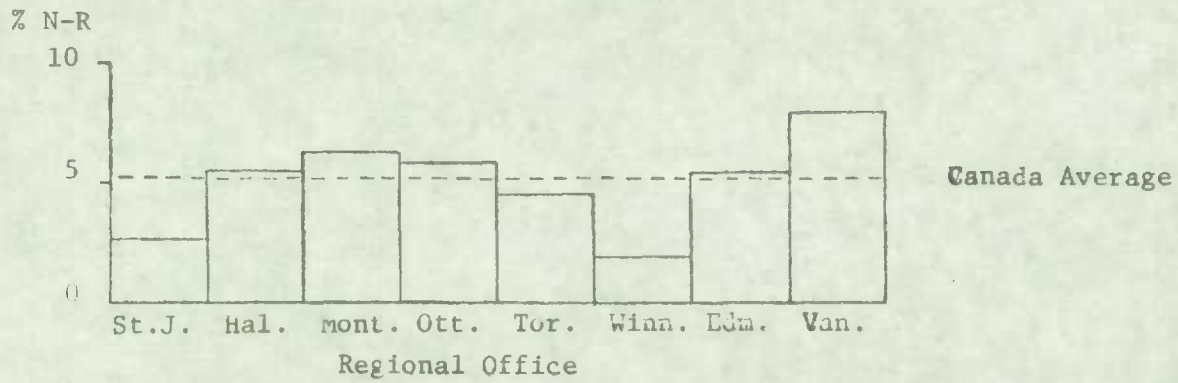
4 Other. When none of the foregoing reasons are applicable, e.g., roads impassable, enumerator not available, death, illness, language problems, etc. (N_{3-5})

Canada

The overall non-response rate declined from 5.7% in October to 5.2% in November. From October to November, no increases were noted in any of the non-response components.

The overall non-response rate for November 1973 was the same as the corresponding rate for November 1972. Only small changes were noted in the non-response component between November 1972 and November 1973: T.A. and N1 components exhibited decreases and N2 showed an increase. There was no change in the "other" component.

Canada



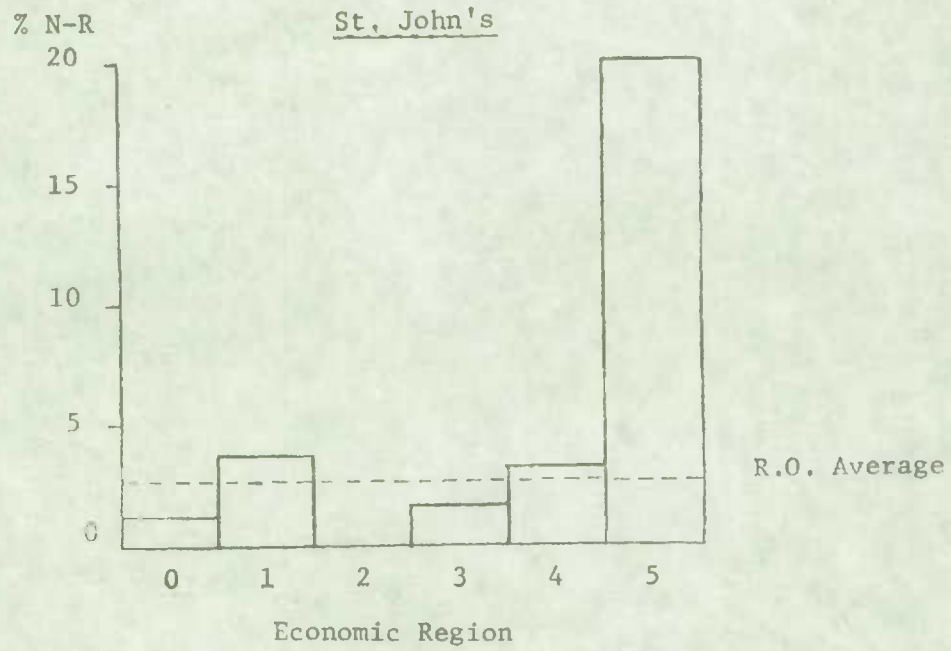
St. John's

The overall non-response rate declined from 3.3% in October to 2.7% in November. The October-November changes are given below:

	October	November	Change (Nov-Oct)
T.A.	0.9	0.5	-0.4
N1	1.5	1.0	-0.5
N2	0.5	0.6	0.1
Other	0.4	0.6	0.2
Overall	3.3	2.7	-0.6

The overall non-response rate of 2.7% compares quite favourably with the corresponding rate (3.9) in November, 1972. The November, 1972 - November, 1973 changes are outlined below:

	November 1972	November 1973	Change (1973-1972)
T.A.	1.3	0.5	-0.8
N1	1.6	1.0	-0.6
N2	0.3	0.6	0.3
Other	0.7	0.6	-0.1
Overall	3.9	2.7	-1.2



Halifax

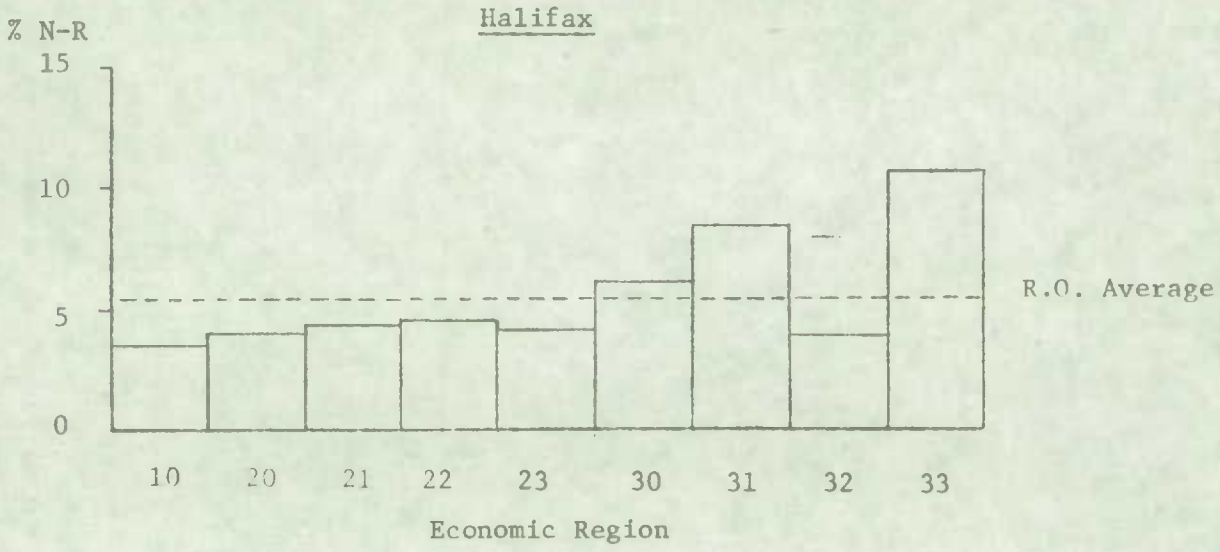
There was no change in the overall non-response rate from October to November. The rates for the N1 and "other" components increased by 0.2% and 0.4% respectively. However, these increases were offset by decreases in the T.A. and N2 components.

Compared with the rate in November, 1972, the overall non-response rate for November, 1973 (5.5%) compared favourably with the 5.7% recorded in November, 1972.

The economic region showing the highest non-response rate was E.R. 33. The major contribution to the 10.7% non-response rate in this economic region is the "other" component which exhibited a rate of 4.9%. This rate is high compared to the corresponding rate of 0.4% in October 1973 and to the rate of 0.8% in November 1972.

In economic region 30 (Moncton), the N2 non-response rate decreased from 5.0% in October to 4.0% in November. The 4.0% non-response rate, however, does not compare favourably to the corresponding 2.5% rate in November, 1972.

In economic region 31 (St. John), there was a marked increase in the N1 non-response rate. This rate increased from 2.0% in October to 4.5% in November. Moreover, the 4.5% rate is much higher than the N1 rate of 2.9% in November, 1972. However, the N2 non-response rate continues to decline and is now much lower than the corresponding 4.9% recorded in November, 1972.



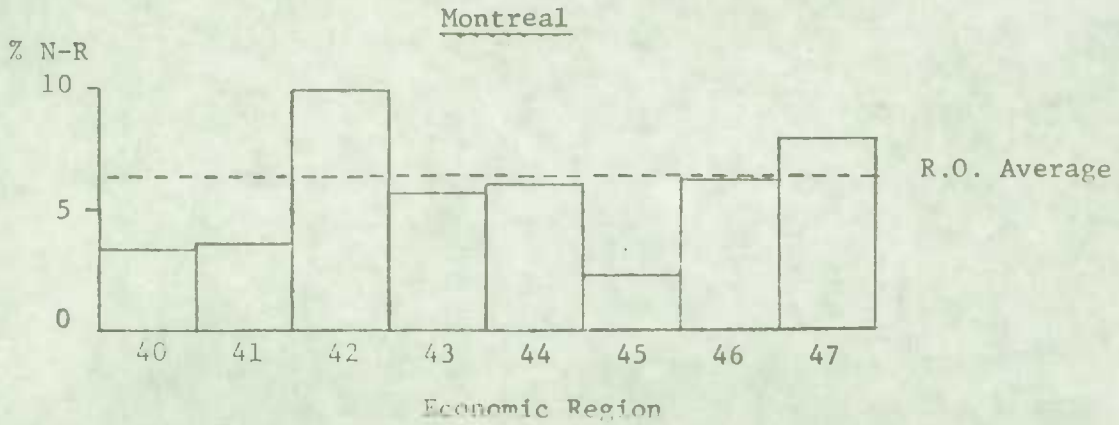
Montreal

The overall rate decreased slightly from 6.4% in October to 6.3% in November. Small changes occurred in the components: T.A. and N2 increased and N1 and "other" decreased.

Compared with the overall rate of November, 1972, the 6.3% rate in November, 1973, is higher than the 5.6% rate in November, 1972. As shown below, the rates for the T.A. and N2 components were higher in 1973. However, the rates for the N1 and "other" components were slightly lower this year.

	November 1972	November 1973	Change (1973-1972)
T.A.	0.9	1.4	0.5
N1	2.4	2.2	-0.2
N2	1.7	2.2	0.5
Other	0.6	0.5	-0.1
Overall	5.6	6.3	0.7

The economic region exhibiting the highest non-response rate (9.9%) was E.R. 42. The largest contribution to this non-response rate was made by the N1 component (5.4%). In fact, the N1 rate of 5.4% is high compared to the corresponding rate of 3.4% in October 1973 and to the N1 rate of 2.6% in November 1972.



Ottawa

The overall non-response rate declined from 6.2% in October to 5.8% in November. Decreases in non-response rates occurred in all the components except the "T.A." component which exhibited a slight increase in the non-response rate.

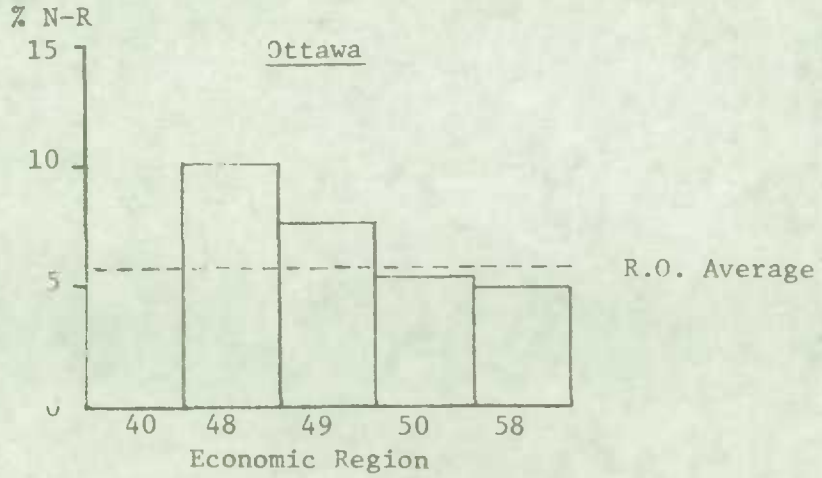
Compared with the overall rate of November, 1972, this year's November rate is higher. Changes occurred as follows:

	November 1972	November 1973	Change (1973-1972)
T.A.	1.4	1.2	-0.2
N1	1.1	2.8	1.7
N2	1.1	1.5	0.4
Other	0.2	0.3	0.1
Overall	3.8	5.8	2.0

It is evident that the N1 component is largely responsible for the higher November, 1973 rate. In fact, from November, 1972 to November, 1973, increases in the N1 rates were noted in the following economic regions:

Economic Region	November 1972	November 1973	Change (1973-1972)
48	1.0	8.8	7.8
49	3.1	4.5	1.4
50	0.7	1.8	1.1
58	1.5	1.8	0.3

From the above table, it is quite clear that E.R. 48 made the largest contribution to the increase in the N1 component at the regional office level.

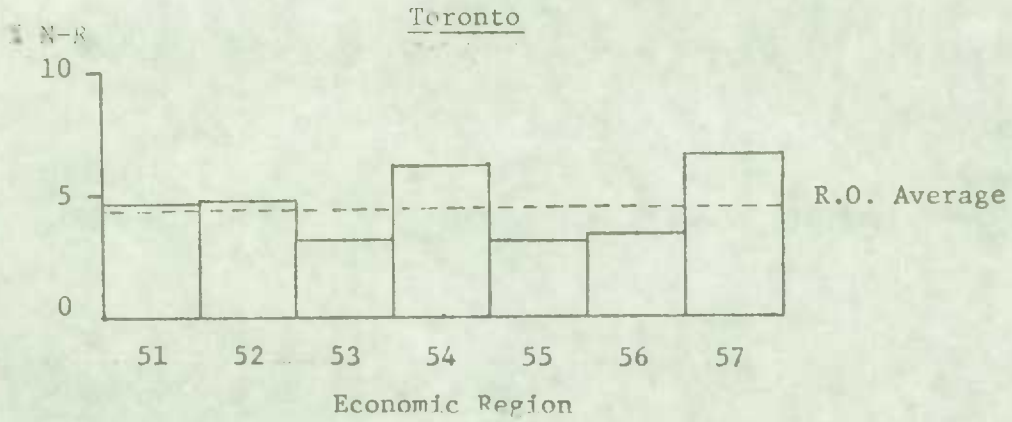


Toronto

The overall non-response rate declined from 4.9% in October to 4.5% in November. Decreases occurred in all components except the T.A. component whose rate increased slightly from 1.2% in October to 1.4% in November.

Compared with the November, 1972 overall rate of 4.3%, there has been a slight increase in this year's November rate. The changes in the components are given below:

	November 1972	November 1973	Changes (1973-1972)
T.A.	1.2	1.4	0.2
N1	1.8	1.2	-0.6
N2	0.9	1.6	0.7
Other	0.4	0.3	-0.1
Overall	4.3	4.5	0.2

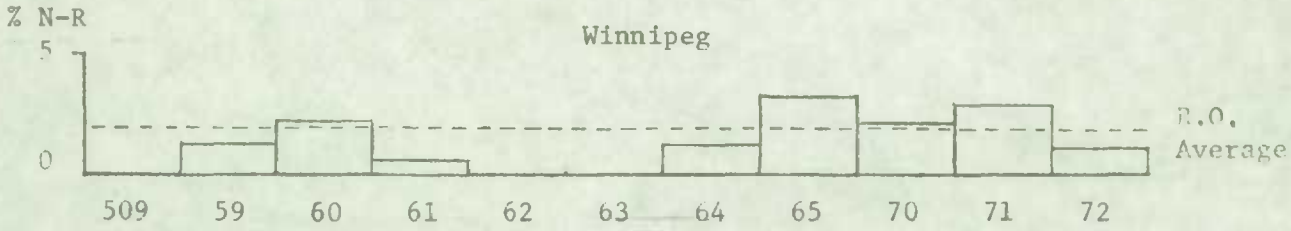


Winnipeg

The overall non-response rate for the Winnipeg Regional Office increased slightly from 1.6% in October to 1.8% in November. This increase is attributable to increases in the N1 and N2 components. There were no changes in the other two components.

However, this year's November overall rate is lower than the rate in November, 1972. Changes in the rates from November, 1972 to November, 1973 are stated below:

	November 1972	November 1973	Changes (1973-1972)
T.A.	1.1	0.8	-0.3
N1	0.4	0.4	—
N2	0.4	0.5	0.1
Other	0.2	0.1	-0.1
Overall	2.1	1.8	-0.2



Edmonton

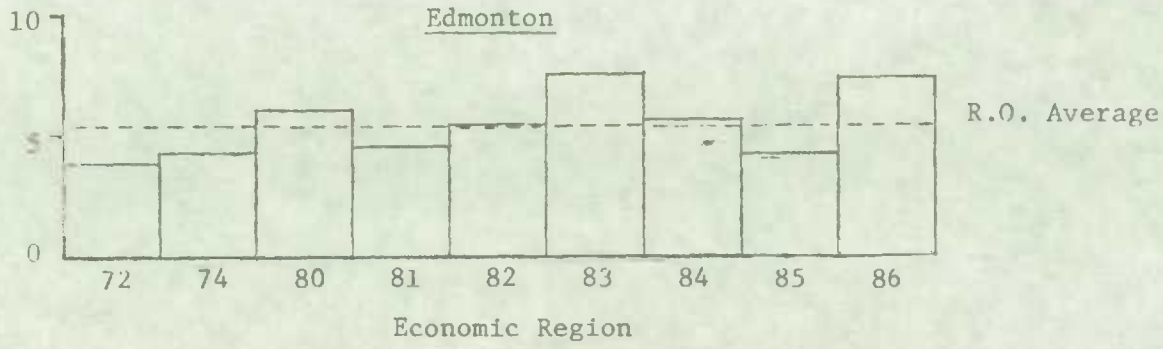
In November, the Edmonton Office continued to show a lower overall non-response rate. The rate declined from 6.1% in October to 5.4% in November. Decreases occurred in the N1 and "other" components. The rates for the T.A. and N2 components remained constant from October to November of this year.

This year's November overall rate is lower than the overall rate (6.5%) in November, 1972. The 1972-73 changes are given below:

	November 1972	November 1973	Changes (1973-1972)
T.A.	2.1	1.2	-0.9
N1	2.4	1.5	-0.9
N2	1.6	2.3	0.7
Other	0.4	0.4	-
Overall	6.5	5.4	-1.1

As noted from the above table, however, this year's N2 rate does not compare favourably with last year's rate. The economic regions exhibiting increases in the N2 rates are given below:

Economic Region	November 1972	November 1973	Changes (1973-1972)
80	0.6	1.5	0.9
82	0.9	2.4	1.5
83	1.1	1.9	0.8
84	2.3	3.1	0.8
85	1.5	3.7	2.2



Vancouver

The overall non-response rate declined from 10.2% in October to 7.9% in November. Changes in the rates by components are given below:

	October	November	Change (Nov.-Oct.)
T.A.	2.4	1.3	-1.1
N1	3.1	1.9	-1.2
N2	4.0	3.5	-0.5
Other	0.7	1.2	0.5
Overall	10.2	7.9	-2.3

Compared with the overall rate (7.5%) for the regional office in November, 1972, this year's level is slightly higher. The 1972-1973 changes for November are given below:

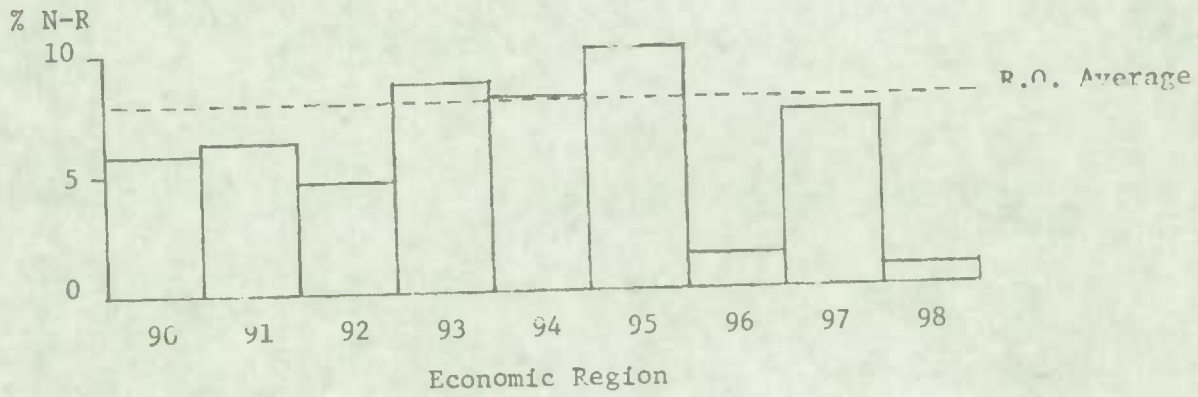
	November 1972	November 1973	Changes (1973-1972)
T.A.	1.5	1.3	-0.2
N1	3.0	1.9	-1.1
N2	2.1	3.5	1.4
Other	0.9	1.2	0.3
Overall	7.5	7.9	0.4

Even though there was a decrease in the N2 rate from October to November, the N2 rate for November, 1973, remains high. In fact, from the second table, it is evident that the N2 rate does not compare favourably to the corresponding rate of one year ago. Over the past year (November, 1972-November, 1973), increases in the N2 rate were noted in the following economic regions:

Economic Region	November 1972	November 1973	Changes (1973-1972)
90	---	0.8	0.8
91	---	1.4	1.4
92	0.4	1.8	1.4
94	2.5	4.4	1.9
95	2.2	3.6	1.4
97	1.2	2.3	1.1

It should be noted that E.R. 94 (Vancouver) contained approximately 52% of the households covered by the Vancouver Regional Office but for November, 1973, it contained approximately 66% of the "refusal" (N2) households.

Vancouver



Refusal Non-Response (N_2) Vancouver Regional Office

In the immediately preceding issue of this report (NR 73-10) it was indicated that E.R.'s 94 and 95 in the Vancouver office have shown high levels of N_2 non-response over the period January to October, 1973. In furtherance of an investigation into the N_2 rates in these E.R.'s the ten assignments with the highest N_2 rates (January to October 1973) were examined and the details are given below.

The focus of attention was the individual household and its pattern of refusal to co-operate for the 6 month period it was in the sample. Thus, the report deals with those households that:

i) refused in one or more of the surveys January to October, 1973; and

ii) rotated out of the sample in the period January to October, 1973; and

iii) were contained in one of the ten assignments (E.R.'s 94 and 95 combined) that showed the highest N_2 rates for the period January to October October 1973.

For each of these households a complete record (6 months) is available to indicate the pattern of response and for non-response. This information was gathered from the forms LFS 536, R.O. Assignment Control. In total, there are 74 households under study.

Table A gives a distribution of the number of households that were classified as N_2 (refusal) in n (n=1,2,...,6) surveys.

TABLE A

No. Surveys Refused (n)	No. of Households
1	21
2	1
3	9
4	16
5	9
6	18
	74

In other words, 21 of the 74 households refused in one survey, 1 refused in 2 surveys, 9 refused in 3 surveys, etc. Thus, it is evident from the above table that approximately 72% of the 74 households has refused to be interviewed in more than one survey.

Table 2 lists the number of households that refused during the mth ($m=1,2,..,6$) month they were in the sample.

TABLE B

Month in Sample (m)	Number of Households
1	24
2	36
3	47
4	51
5	51
6	58

This table is based on those 74 households that refused at least once while they were in the Labour Force sample. The above results indicate that the probability that a household will refuse to be interviewed will increase with the length of time that the household is in the Labour Force survey.

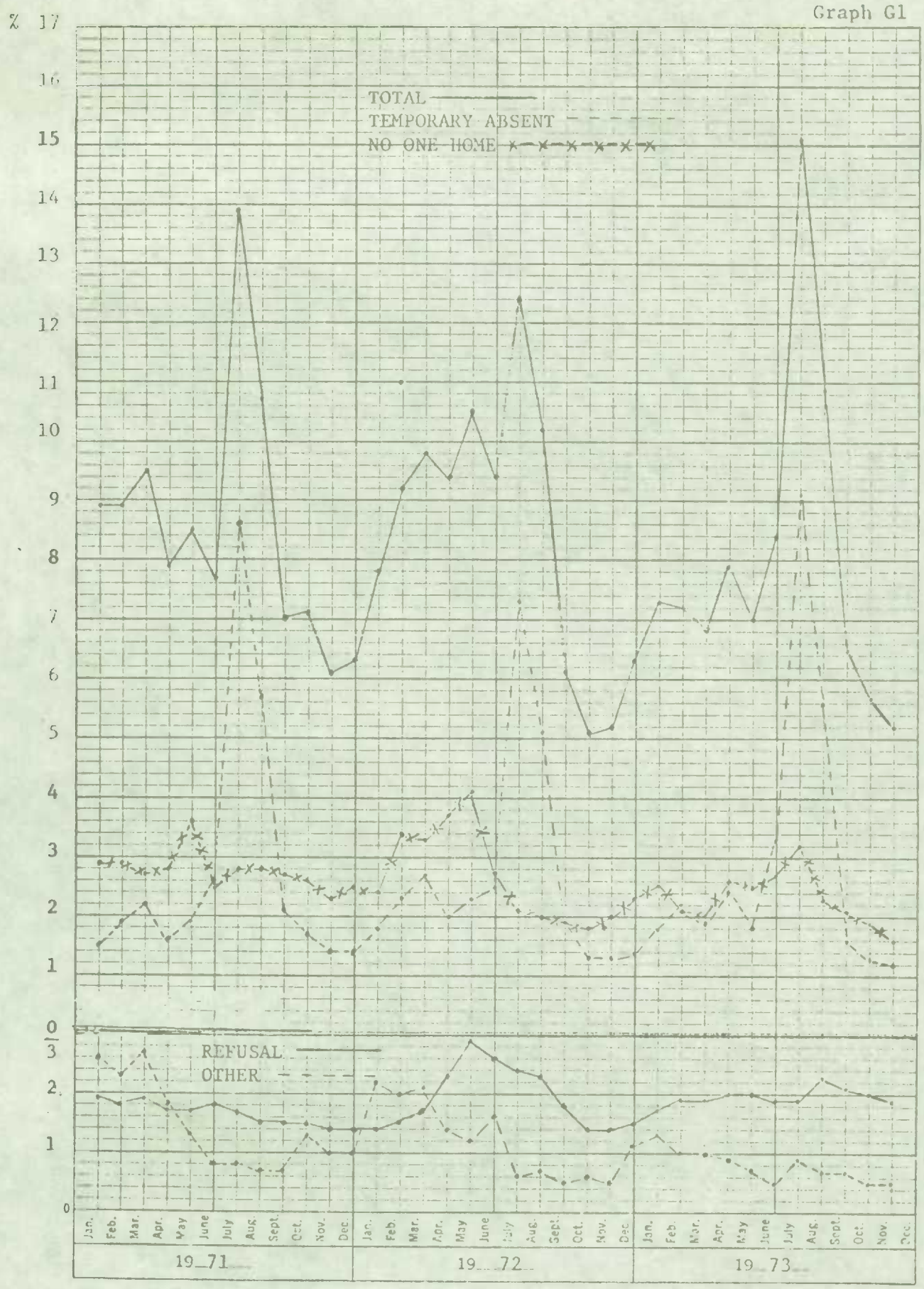
Of the 74 households under study, consideration is now given to those households that were interviewed at least once during the 6 month period they were in the sample. Table C gives the number of households that responded in month m ($m=1,2,--,6$).

TABLE C

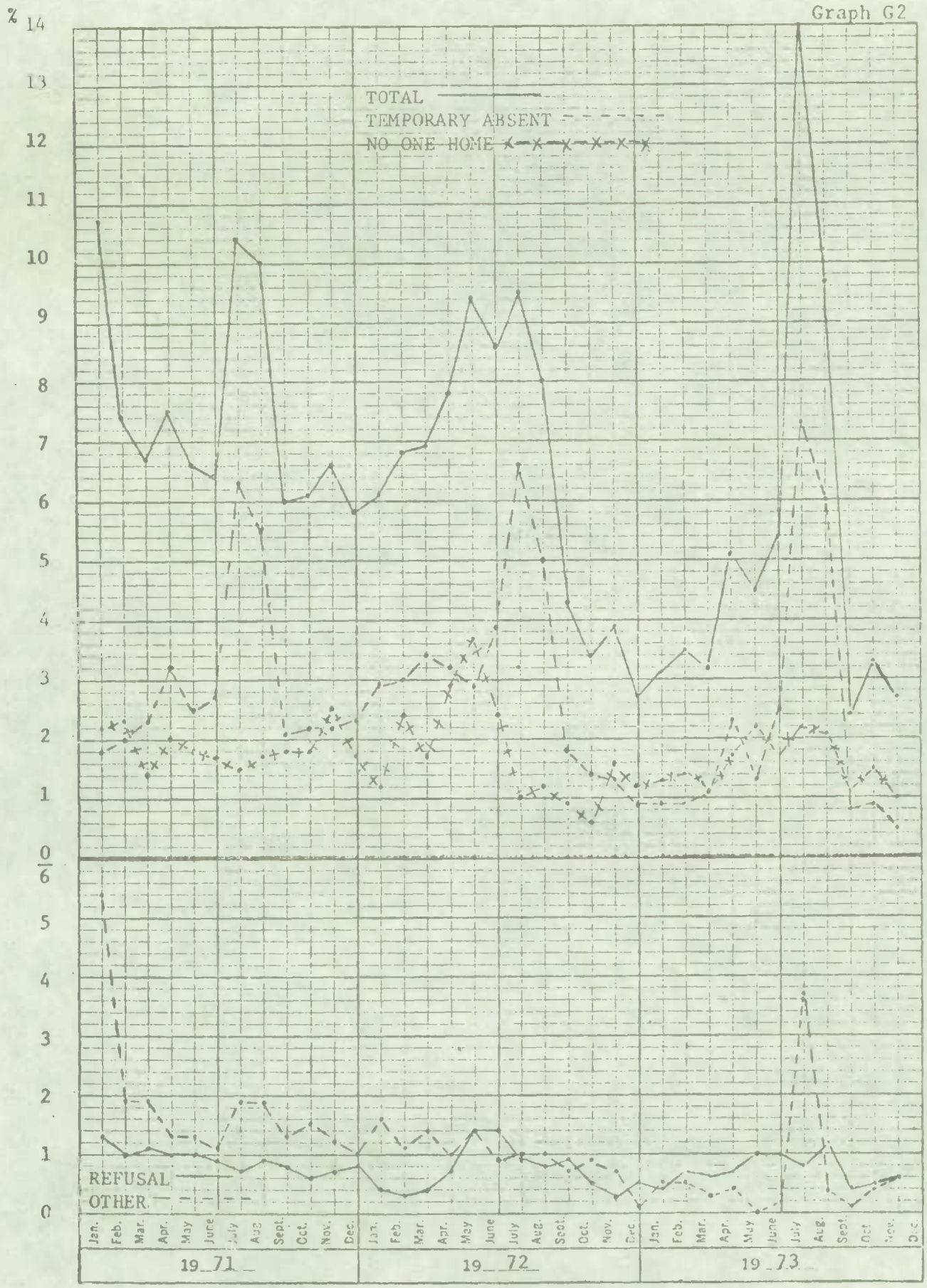
Month in Sample (m)	Number of Households
1	32
2	26
3	18
4	15
5	15
6	12

In other words, of the 74 households under consideration, 32 of these households responded during the first month they were in the sample; 26 of these households responded during the second month they were in the sample etc. The implication of these results is that a household is more likely to be agreeable to an interview during or shortly after rotating into the sample than in later months.

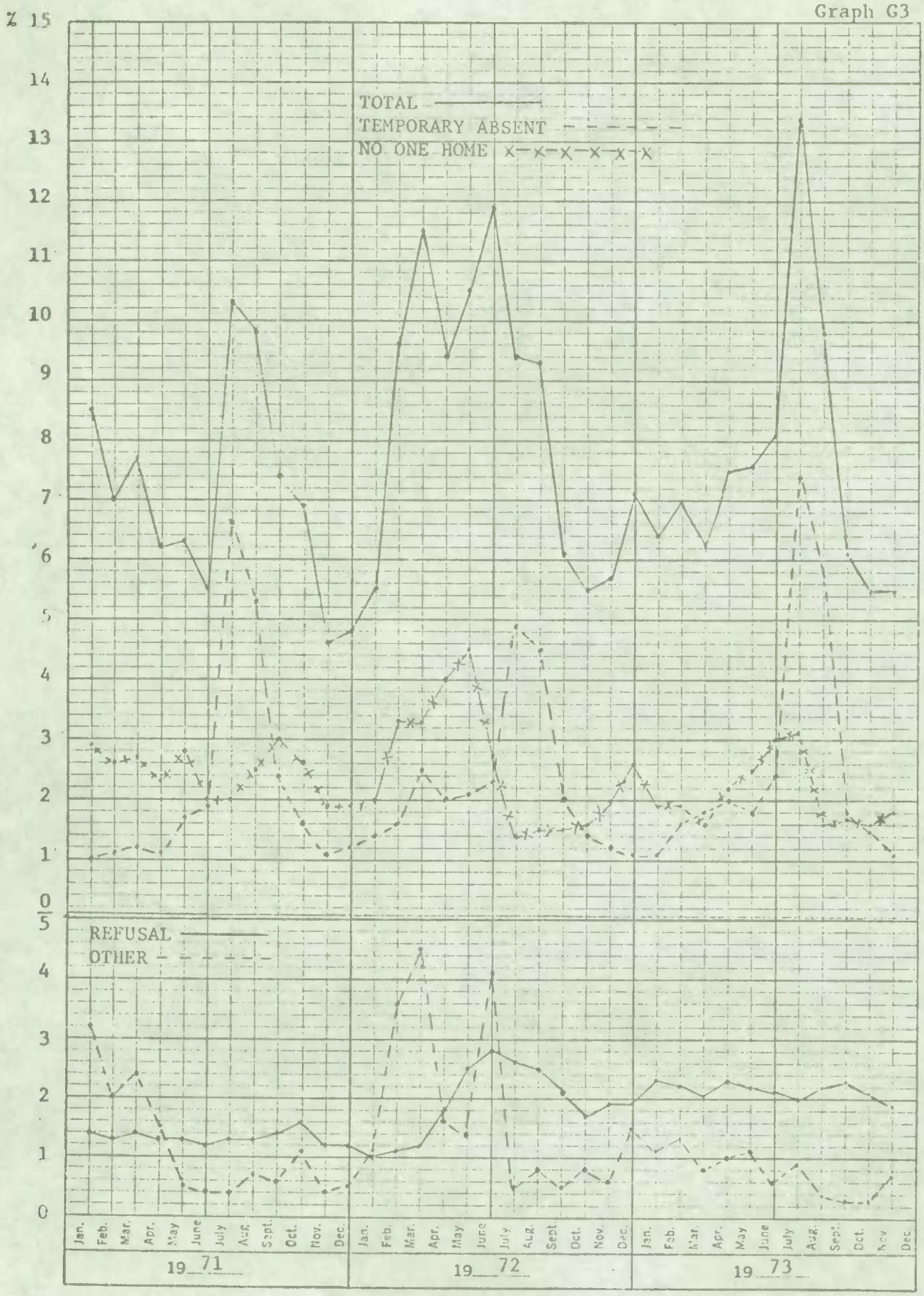
Graph G1

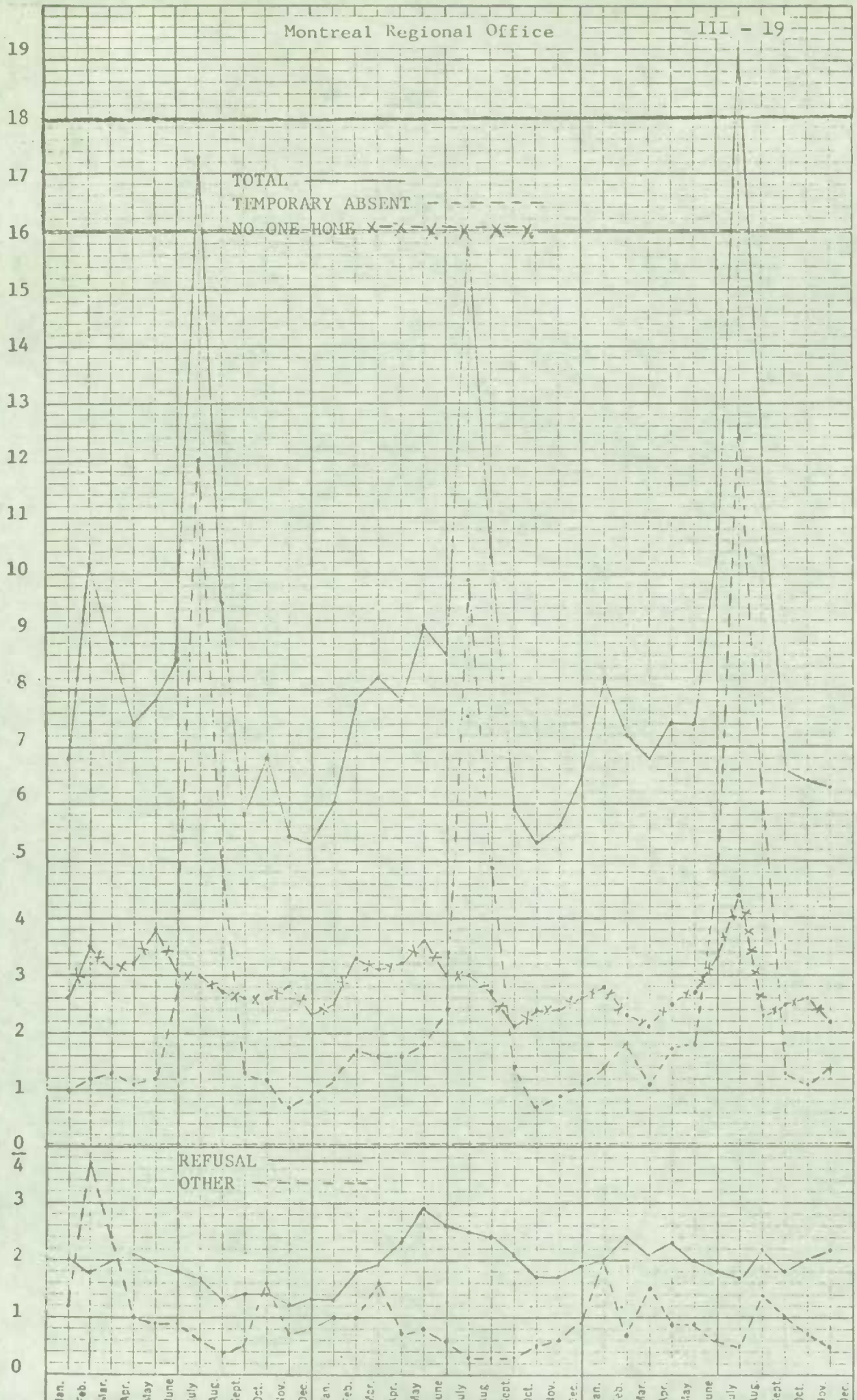


Graph G2

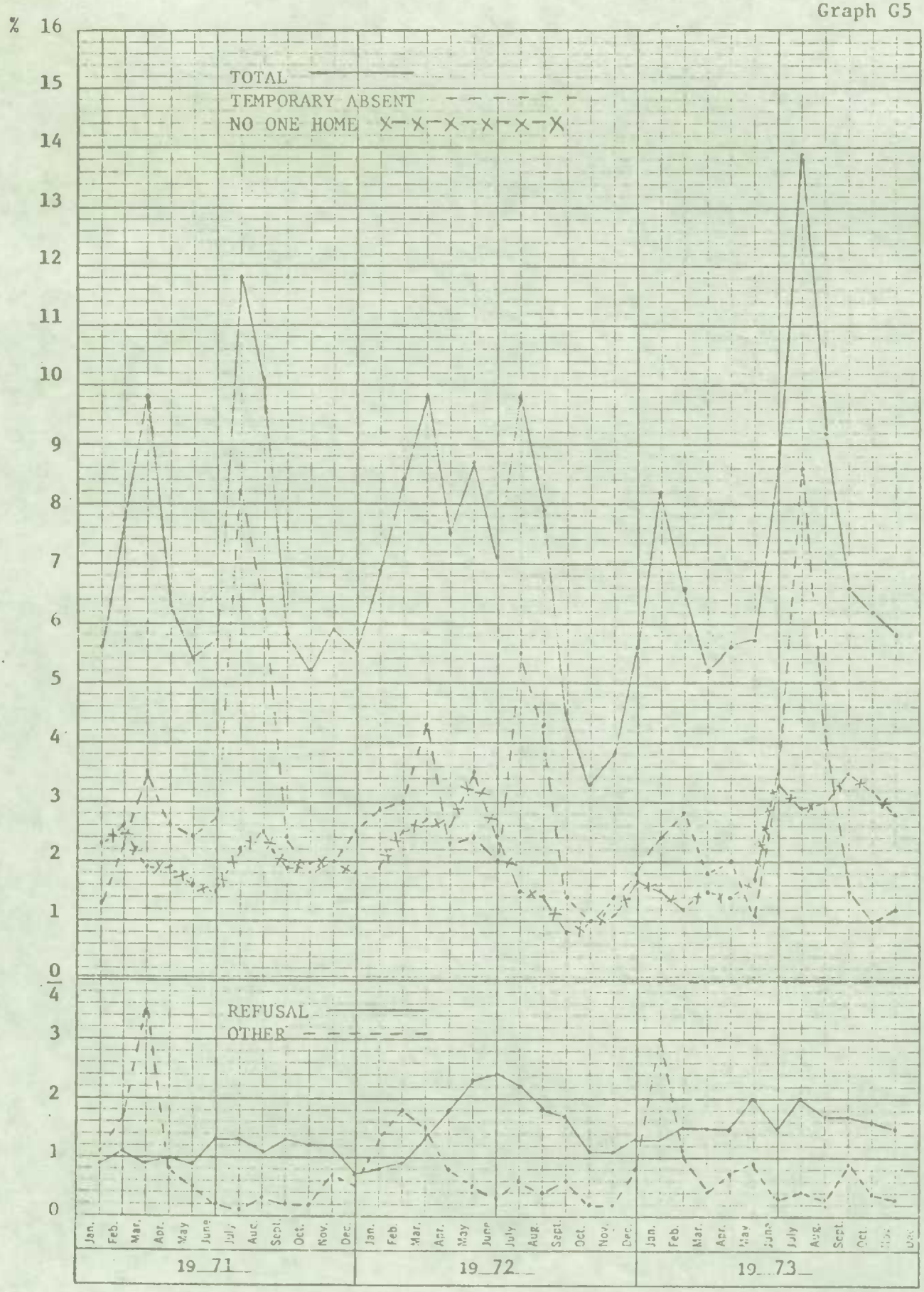


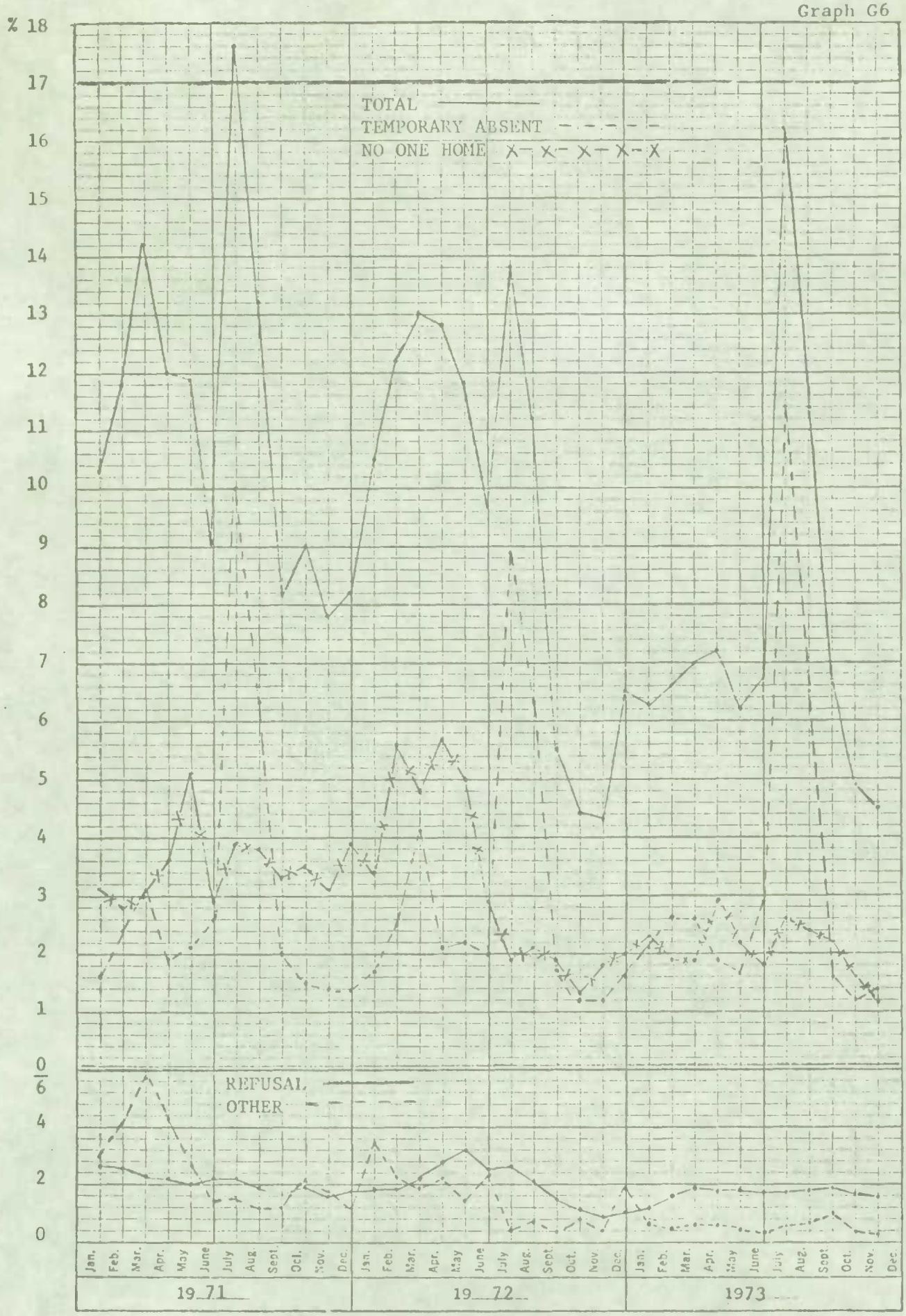
Graph G3



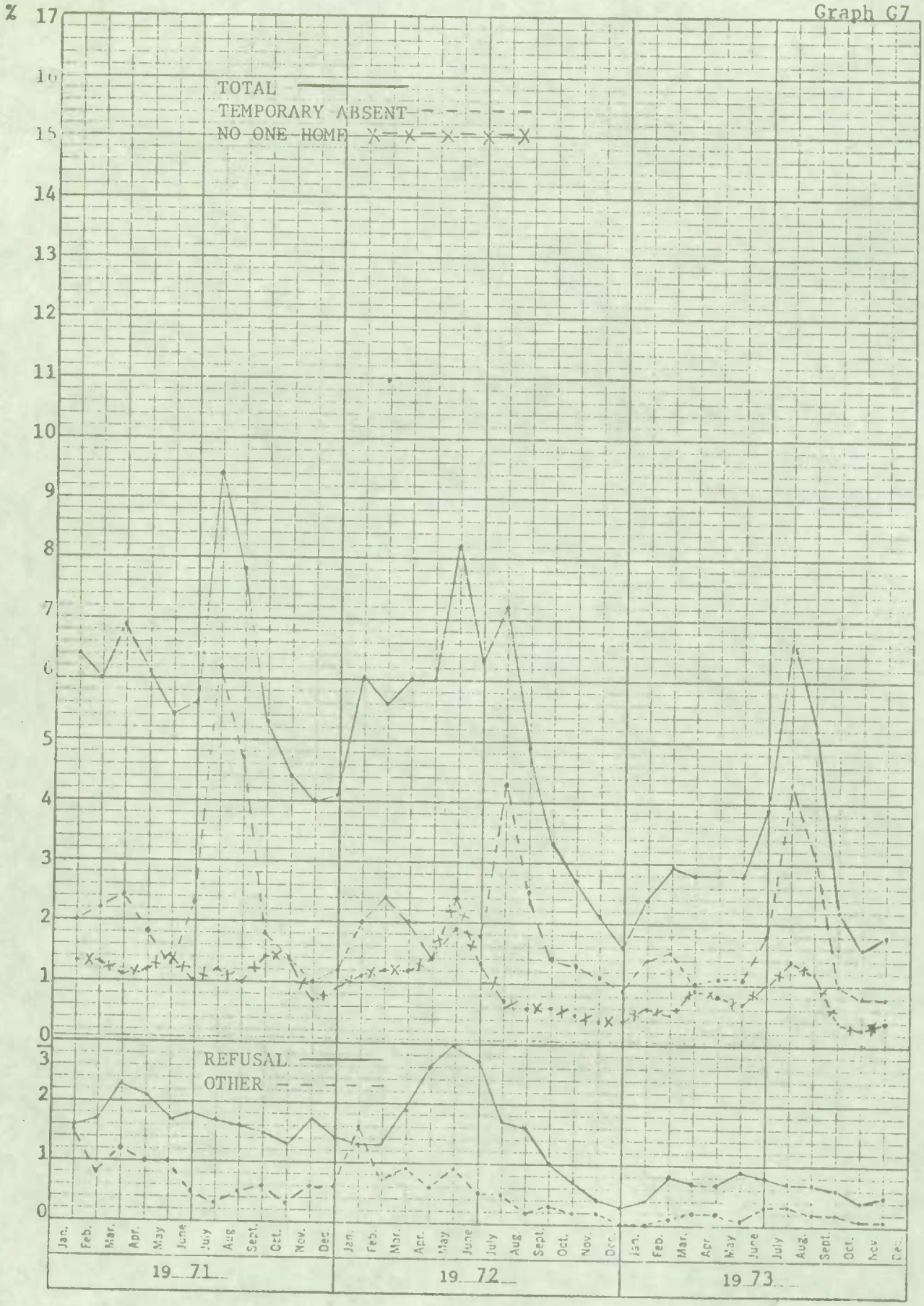


Graph G5

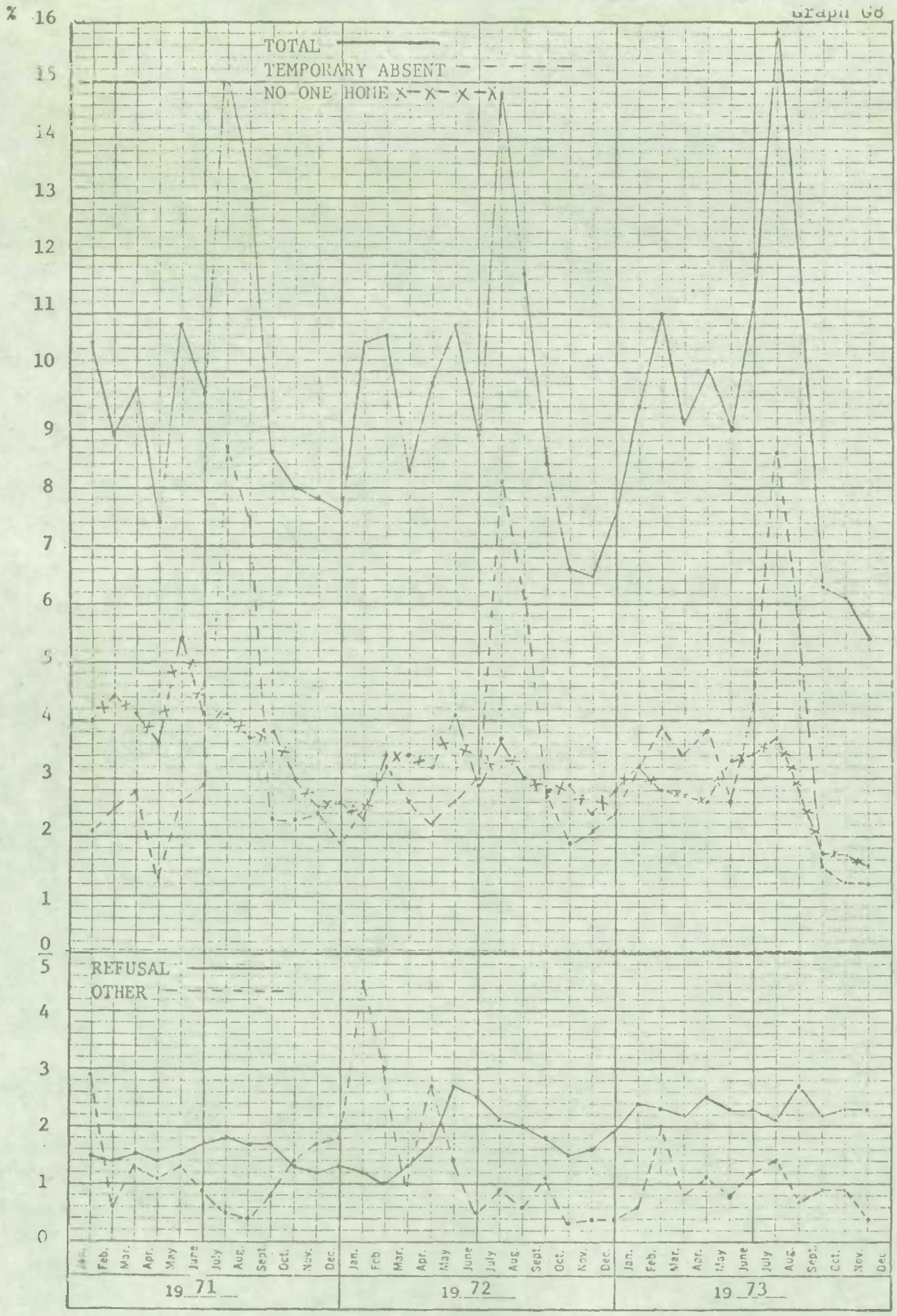




Graph G7



Graph 68



Vancouver Regional Office

Graph G9

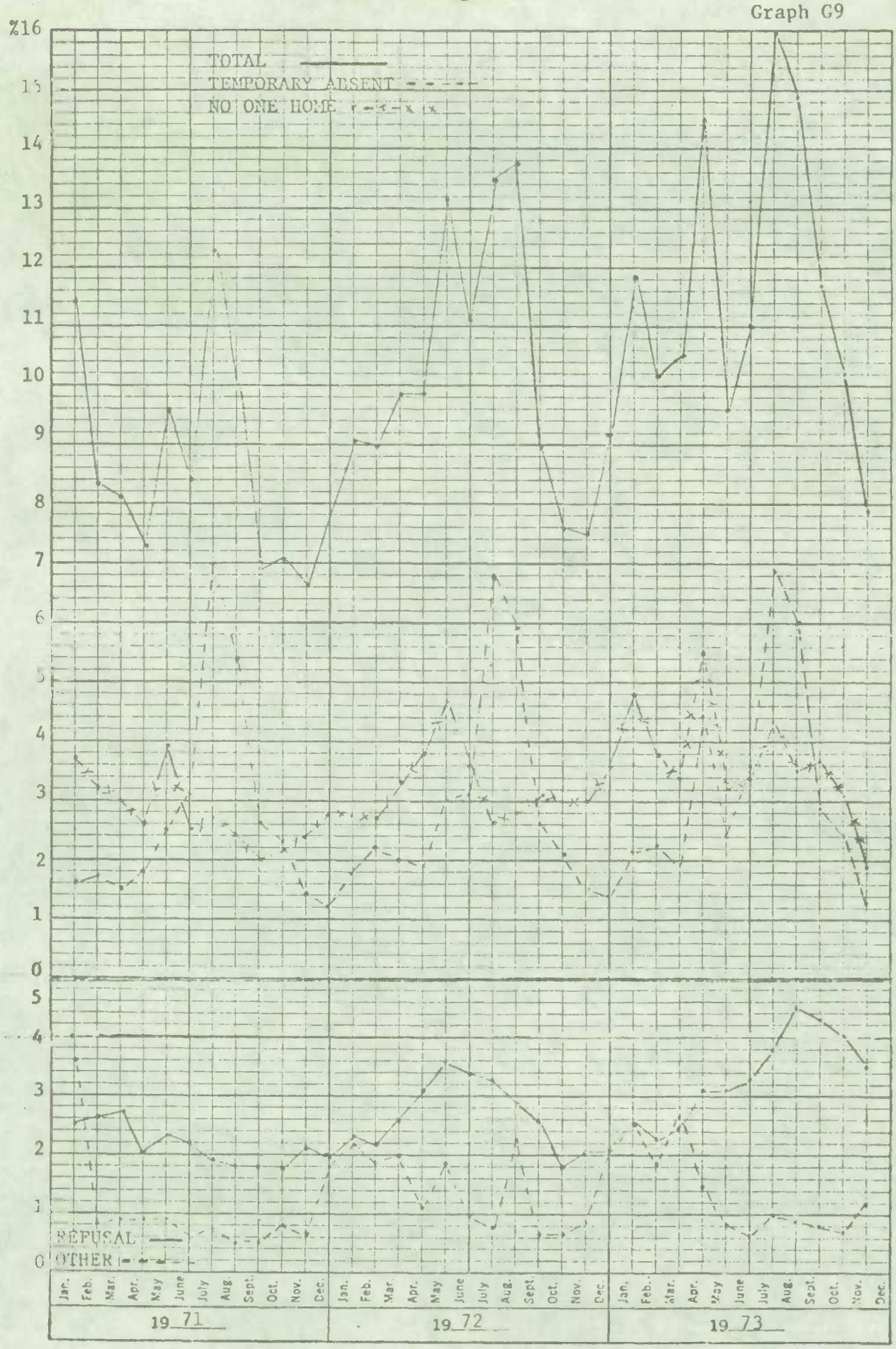


TABLE 1.

November, 1973

NON-RESPONSE RATES BY COMPONENT,

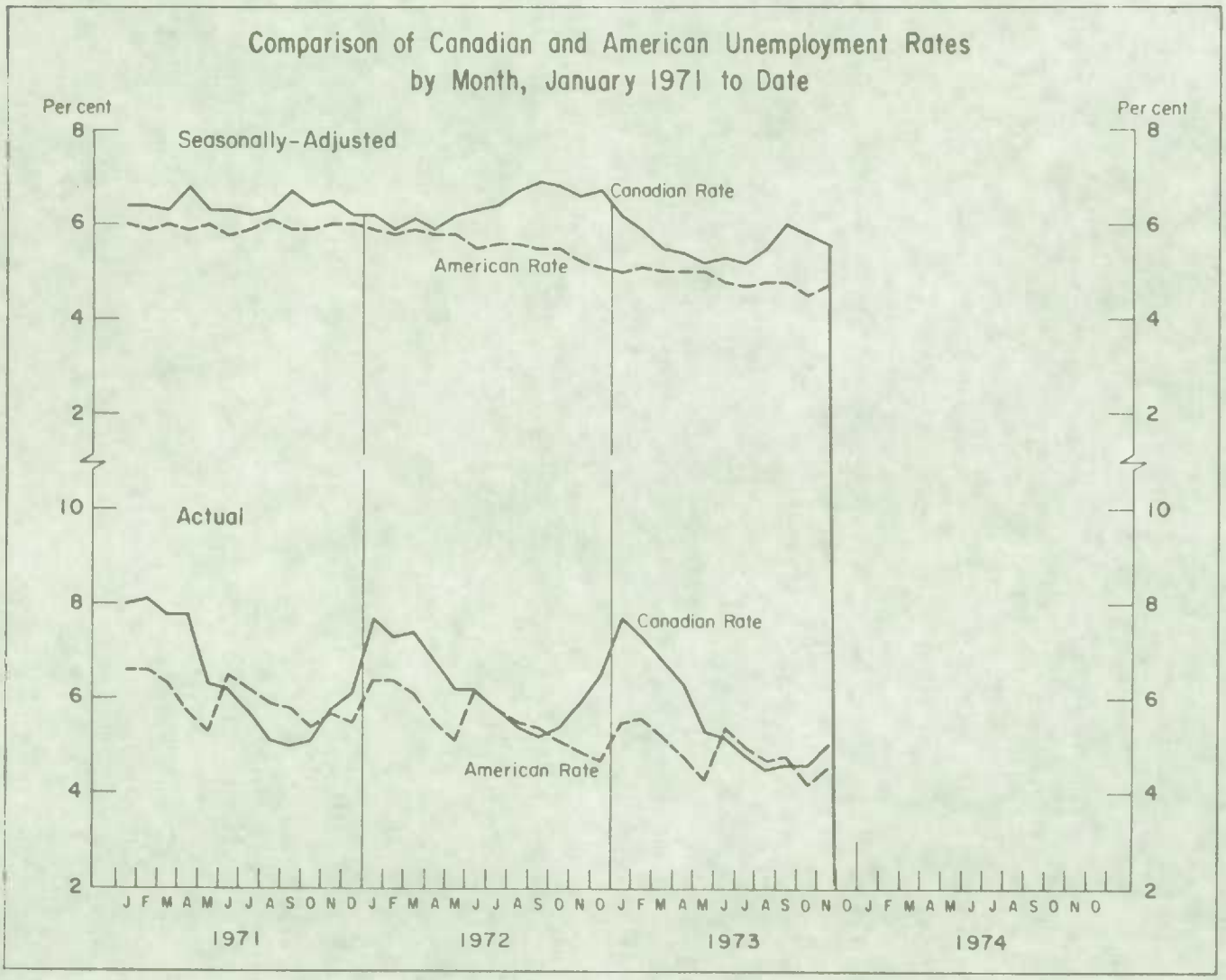
CANADA, AND REGIONAL OFFICES

(Percent)

	Total	T. A.	N. 1.	N. 2.	Other
Canada	5.2	1.2	1.6	1.9	0.5
St. John's	2.7	0.5	1.0	0.6	0.6
Halifax	5.5	1.1	1.8	1.9	0.7
Montreal	6.3	1.4	2.2	2.2	0.5
Ottawa	5.8	1.2	2.8	1.5	0.3
Toronto	4.5	1.4	1.2	1.6	0.3
Winnipeg	1.8	0.8	0.4	0.5	0.1
Edmonton	5.4	1.2	1.5	2.3	0.4
Vancouver	7.9	1.3	1.9	3.5	1.2

Comparison of Canadian and American Unemployment Rates
November 1972 to November 1973

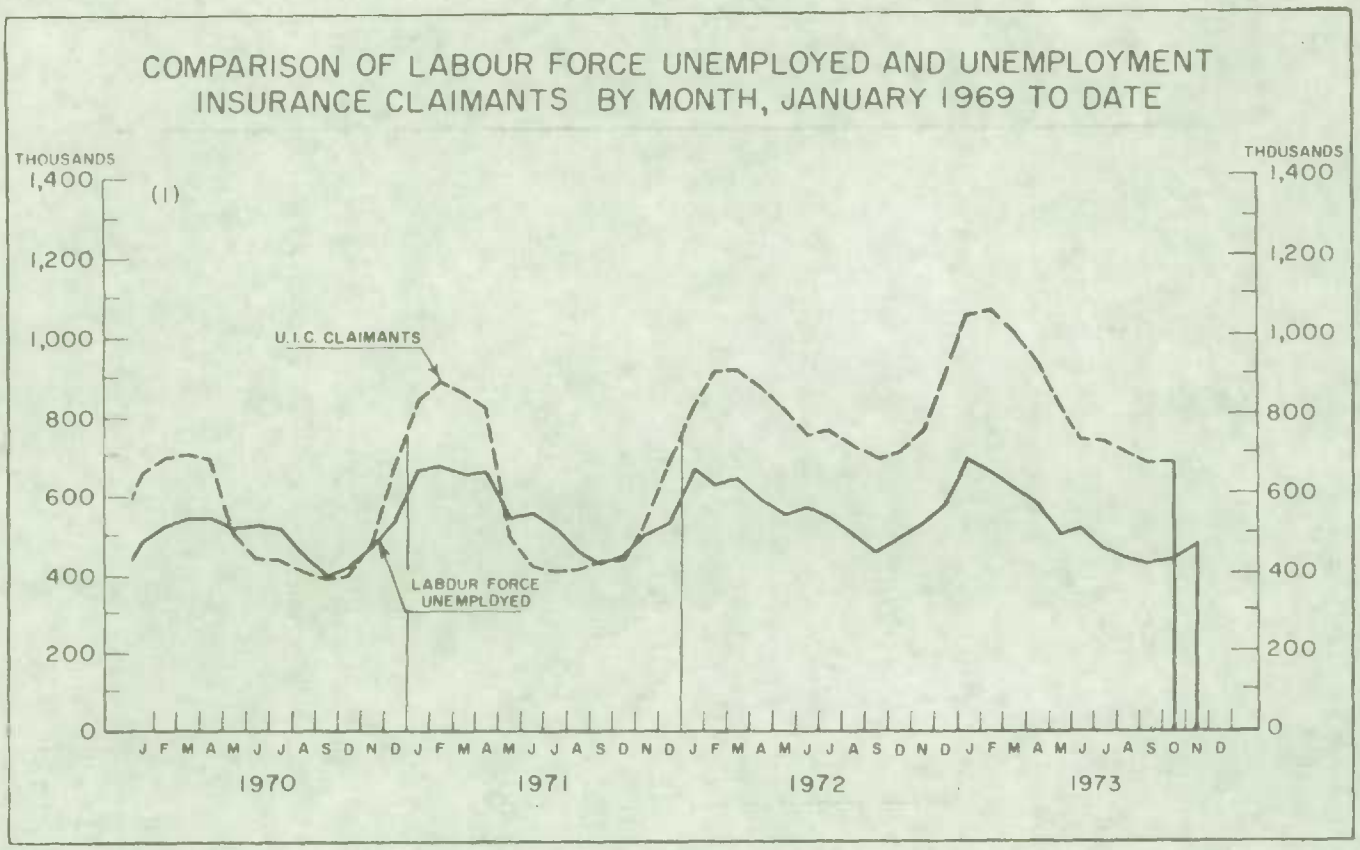
	Seasonally-Adjusted		Actual	
	Canadian	American	Canadian	American
1973 – November	5.6	4.7	5.0	4.5
October	5.8	4.5	4.6	4.2
September	6.0	4.8	4.6	4.8
August	5.5	4.8	4.5	4.7
July	5.2	4.7	4.8	5.0
June	5.3	4.8	5.2	5.4
May	5.2	5.0	5.3	4.3
April	5.4	5.0	6.3	4.8
March	5.5	5.0	6.8	5.2
February	5.9	5.1	7.3	5.6
January	6.2	5.0	7.7	5.5
1972 – December	6.7	5.1	6.5	4.7
November	6.6	5.2	5.9	4.9



Comparison of LFS Unemployed and UIC Claimants Series
January 1972 to date

	LFS Unemployed (000's)	UIC Claimants (000's)	Ratio Claimants / Unemployed		LFS Unemployed (000's)	UIC Claimants (000's)	Ratio Claimants / Unemployed
1973				1972			
December				December	584	903	1.55
November	468			November	524	765	1.46
October	429	677	1.58	October	483	709	1.47
September	421	676	1.61	September	459	692	1.51
August	433	691	1.60	August	503	722	1.44
July	461	733	1.59	July	543	762	1.40
June	503	739	1.47	June	568	753	1.33
May	493	810	1.64	May	552	814	1.47
April	570	921	1.62	April	592	874	1.48
March	608	1,003	1.65	March	642	914	1.42
February	655	1,055	1.61	February	627	912	1.45
January	688	1,056	1.53	January	665	827	1.24

Note: It is difficult to draw any conclusion when comparing the LFS and UIC data due to conceptual differences. See Appendix III of the April issue of this report.



Unemployment rate represents the number unemployed as a per cent of the civilian labour force.

Canadian civilian Labour Force, in the Labour Force Survey concept, is composed of that portion of the civilian non-institutional population 14 years of age and over who, during the reference week, were employed or unemployed.

American civilian Labour Force, in the Current Population Survey concept, is composed of that portion of the civilian non-institutional population 16 years of age and over who, during the reference week (which contains the 12th day of the month), were employed or unemployed.

List of some differences in the concepts of claimants and unemployed

UIC	LF unemployed
- need to have worked at least 8 weeks in past year to be eligible	- does not need to have worked before
- interruption of earnings resulting from unemployment, illness or pregnancy	- activity concept: (1) did not work, (2) actively searched for a job, and (3) was able to work
- must be capable of and available for work and unable to obtain suitable employment (except in case of illness and pregnancy)	
- contribution and benefit entitlement ceases for a person: (a) at the age of 70, or (b) to whom a retirement pension under the Canada Pension Plan or the Quebec Pension Plan has at any time become payable	- no upper age boundaries. See activity concept.
- claimants can work and be eligible for total benefit if weekly earnings do not exceed one quarter of weekly rate of benefit; work-related income in excess of 25% of weekly rate is deducted from benefit.	- unemployed cannot have worked worked a single hour in reference week