FLOW DATA FROM UNEMPLOYMENT INSURANCE RECORDS

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INTRODUCTION

The unemployment insurance beneficiary records represent an ever-changing group of people. Although the net change in the number of beneficiaries from one month to the next shows only relatively small changes, they are the result of large movements in the numbers becoming beneficiaries (the inflow), and the numbers ceasing to be beneficiaries (the outflow). For example, the average inflow for the calendar year 1982 was 230,000 and the average outflow was 206,000 or 25% and 22% respectively of the average number of beneficiaries over the period.

This article provides some background information on unemployment insurance data, and a summary of its strengths and weaknesses. The components of flow data are defined; some initial findings on aggregate flows into and out of beneficiary status are presented; and the effects of age, sex and province on continuous weeks on claim are considered from an outflow perspective.

BACKGROUND: UNEMPLOYMENT INSURANCE DATA

A federally-administered Unemployment Insurance Program (1) was established in Canada in 1941. Since that time several major changes have been introduced and the Program now covers virtually all paid workers in the labour force including members of the Armed Forces. Generally speaking, to be eligible for benefits, a person must have had a recent minimum number of weeks of insurable earnings and must experience an interruption in earnings resulting from lack of work, illness, or pregnancy.

In order to obtain benefits, a person must apply for them (claimant) and meet certain qualifying requirements. Claimant data represent an inventory of persons in current claim status and include those receiving benefits, those in the mandatory waiting period, those with disqualifications or disentitlements imposed and can even include persons returned to employment.

Beneficiary data, on the other hand, are a subset of the claimant data and represent persons who are receiving unemployment insurance benefits. As the beneficiary records contain a claim type (regular, sickness, maternity, seasonal fishing, retirement, job creation, work sharing or training), the beneficiaries whose qualifying requirements include being available for work, being unable to find suitable employment and having a minimum recent work experience can be identified and would consist of the regular beneficiaries. In addition, through the use of a pay code (identifies the beneficiary as having work-related earnings in the period), the regular beneficiaries can be divided into those with or without earnings (see Table 1).

The concept of regular beneficiaries with no earnings (RBNE), as well as some initial comparisons of RBNEs with unemployment estimates from the Labour Force Survey (2) can be found in previous work of the Administrative Data Development Division and the Economic Characteristics Staff. (For additional information, see Leyes et al., 1982 (3) and Levesque, 1982 (4)).

STRENGTHS AND WEAKNESSES OF THE BENEFICIARY DATA

Like all data, regardless of their source, those derived from the Unemployment Insurance (UI) Program have their specific strengths and weaknesses.

Strengths

The major strengths of the UI beneficiary data are that they are available monthly (3-5 months after the reference period for final data), include all areas of the country and represent a census of their population. They are unaffected by sampling errors and are relatively free of reporting errors, since each claim must be supported by legal documentation certified as correct by the claimant. In addition, the data are machine-readable and offer an inexpensive alternative to survey data.

The ability to produce local area data is a significant strength and a powerful analytical tool in the hands of local area officials. As well, although the UI beneficiaries do not account for all unemployed, they are a good measure of the unemployed who are recent job-losers or job-leavers. As such, their trends and variations both temporally and geographically are of interest as a means of identifying periods and areas of economic strength and weakness.

The UI beneficiary data also contain additional information which can be readily tabulated. The recorded information includes the postal code (5) (which can be used to develop the local area data), age and sex. The records also contain information on the number of insured weeks, continuous weeks on claim, type of claim and an earnings indicator.

Weaknesses

The data available from the unemployment insurance records are used for the planning and administration of the Unemployment Insurance Act itself and for evaluation of program policies and financing, but they are not designed to be input to the national statistical system. The control over the data and the importance attached to each variable resides in another government department. As a result of its primary administrative function, legislative and regulatory changes can have effects on the statistical comparability of the data on a time-series basis. However, recent changes have tended to be of a "fine tuning" nature and have generally been targeted to claim types other than RBNEs.

Data comparisons both within and between geographical areas can be made somewhat ambiguous as a result of the decentralized administration of the Act, the variable entrance requirements (6) and the regional extended benefit phase (7). The first item may be affected to some extent by regional and temporal differences in the application of the eligibility rules, while the last two items are influenced by the Labour Force Survey unemployment rate in the economic region in which the beneficiary resides. As well, temporal comparisons can be obscured since variable entrance requirements or extended benefit phases may be altered due to changes in regional unemployment rates, thus affecting the eligibility requirements for beneficiaries.

As stated previously the UI data do not cover

all unemployed persons. Thus a direct comparison of the beneficiary data and total unemployment derived from the Labour Force Survey is not very meaningful as a result of the basic differences in the concepts that underlie the two sources of data.

DEFINITIONS

In defining the flows into and out of beneficiary status, consideration must be given to determining the target population. This paper has been restricted to the consideration of the unemployment insurance beneficiaries who would be considered unemployed according to the Labour Force Survey definition, that is, the regular beneficiaries with no earnings.

Flows

Since the beneficiary records include a personal identifier (the Social Insurance Number (S.I.N.) (8)) and are available for consecutive months, it is possible to match the current (Month M) and previous (Month M-1) beneficiary status of individuals. Thus, for the beneficiary population of interest, the regular beneficiaries with no earnings (RBNE), we can tabulate the number of people remaining in RBNE status, the number entering RBNE status and the number leaving RBNE status.

Aggregate flows into RBNE status, using the records from two adjacent months, are composed of three possible sources.

Source 1

New additions to the current (month M) file; that is, a record for an RBNE is on the file for month M but was not there for month M-1;

Source 2

Movement between beneficiary claim types; that is, a beneficiary in M-1 having a claim type other than regular, who has changed claim type to RBNE for month M;

Source 3

Movement between pay codes within the regular beneficiary category; that is, a regular beneficiary in M-1 having some employment earnings, who is an RBNE in month M;

As well, if the records are viewed from a local area perspective such that flow tabulations are disaggregated by geographic areas, a fourth source becomes apparent:

Source 4

The migration of beneficiaries from one geographic area to another; that is, an RBNE in area A for month M-1 having the same characteristics, but in area B, for month M.

The same four flow sources, although in the opposite direction, will exist in the tabulation of aggregate flow out of RBNE status.

Continuous Weeks on Claim

It is of interest to consider what additional information can be conveyed by beneficiary flow data beyond that provided by RBNE stock counts. The stock RBNE count obtained by summing the number of RBNEs of all durations includes both flow and duration effects. That is, a group may have a large RBNE count as a result of large flow into RBNE status but of short duration or as a result of small inflow with long duration. For example, a high youth RBNE count (in relative terms) may be due to large inflow and not because they experience longer than average duration. In an attempt to measure the length of time an individual remains an RBNE (as a proxy for a duration or exhaustion indicator), and since the beneficiary file provided to Statistics Canada does not contain the number of weeks in receipt of benefits, the variable Continuous Weeks on Claim was tabulated. It should be noted that this variable is not equivalent to the number of weeks of benefits received for the many reasons why a claimant may not be a beneficiary.

The tabulation of the Continuous Weeks on Claim variable requires some further explanation as to which outflow records have been used. When calculating a measure of the length of time a person has spent as an RBNE, flows between beneficiary claim types (source 2), changes in pay codes (source 3) and migration of RBNEs (source 4) have been excluded. The measure is thus tabulated on the basis of records leaving the beneficiary file (source 1) and these RBNEs will be referred to as "exiters" throughout the remainder of this paper. It is recognized that this treatment is not totally satisfactory in terms of measuring completed periods of unemployment. For example, an RBNE may be dropped from the file due to exhausting benefit entitlements, but may still continue to be unemployed or, alternatively, may be dropped and return to school, leave the labour force or be serving a disqualification or disentitlement. Unfortunately, the beneficiary file we receive does not contain any information on the file exiters.

SOME INITIAL RESULTS

The aggregate flow data presented in Table 2 apply to flows into and out of RBNE status and include the four sources of flow described in the previous section. As can be seen from this table, the beneficiaries are not a fixed "pool" as the turnover is very large. On average, over 435,000 adults, or 47% of the total RBNEs, entered or left RBNE status each month of 1982. The net flows showed significantly different monthly patterns, ranging from -65,000 in April-May (months M-1 and M respectively) to +111,000 in November-December. Three months (April-May, May-June and August-September) recorded net decreases in the number of RBNEs and all occurred as a result of large outflow. The first two pairs of months reflect seasonal employment opportunities, while August-September is the period when students are returning to school. All other months showed net increases in the number of RBNEs, with the largest increases occurring in October-November and November-December, reflecting seasonal declines in employment.

Sex

In Table 3 the percentage distribution of exiters is produced by continuous weeks on claim for each sex. This table shows that men leave the file more quickly than women. During April-May, the percentage of men was higher for continuous weeks on claim of 1-9, 10-19 and 20-29 for all years examined. The November-December data are somewhat different. Instead of the males being disproportionately high for the three lowest groups of continuous weeks on claim, this pattern appears for only the first group.

This conclusion is also reached when considering the sex variable from the perspective of median

number of continuous weeks on claim of the exiters. Although the data have not been provided in this paper, a comparison by sex showed that females had four to eight more continuous weeks on claim before exiting. Both April-May and November-December showed similar net differences between the sexes.

Tabulations were produced of the full beneficiary file for the same months as those of the exiters. Exiting rates were calculated by dividing the number of exiters in a group by the number of beneficiares in the same group and multiplying by 100.

The results by sex and continuous weeks on claim are shown in Table 4. A comparison of the exiting rates confirms the previously-noted conclusions. It is also apparent that the rates are significantly different for the two pairs of months under review. The exiting rates for 50-59 and 60+ continuous weeks on claim are extremely high as a result of the regulations of the Unemployment Insurance Act and generally represent persons exhausting their benefit entitlements.

Age

The percentage distribution of exiters was calculated by continuous weeks on claim and 10-year age groups (see Table 5). It is evident that in April-May, for all age groups, the exiters are most likely to have had 10-29 continuous weeks on claim. In November-December, this becomes 1-9 continuous weeks on claim for age groups between 20 and 59, but 1-9 and 50-59 continuous weeks on claim for the less than 20 age group and 50-59 weeks for the 60 to 64 age group. It was also observed that although all years of data have not been presented in this paper, the age group pattern for April-May was nearly identical for all 4 years (1980-1983), as was the pattern for November-December for all 3 years (1980-1982). However, the patterns of the two months were very different. These results confirm the strong, stable seasonality in the Canadian labour market. It appears that RBNEs less than 50 years of age leave the UI system after only a few weeks on claim more easily than those 50 years of age and over. The group less than 40 years of age appears to have their UI experience interrupted in some way so as to extend their continuous weeks on claim up to even the 60+ category more frequently than the groups over 40 years of age. Perhaps this is done with brief spells of employment income or by participating in training programs.

The exiter data by age group were also tabulated by median number of continuous weeks on claim. However, these results have not been provided due to space limitations. The data showed little difference in median number of continuous weeks on claim for all age groups in the April-May period. However, the November-December comparison indicated that 50 to 59 and 60 to 64 age groups exit after longer periods of continuous weeks on claim. As well, this also appears to be the case for the less than 20 age group in November-December 1982.

Province

The beneficiary data can also be considered in a geographic dimension. Table 6 provides some results provincially by continuous weeks on claim. A higher percentage of the exiters leave RBNE status in the lower continuous weeks on claim categories as one moves in an east/west direction. As well, when comparing the pairs of months, a higher proportion of RBNEs exit with longer periods of continuous weeks on claim in November-December for all provinces.

As in the cases of the age and sex variables, the provincial data were also tabulated by median number of continuous weeks on claim of exiters, but not presented in the paper. When analyzing the median data, it was apparent the median decreased in an east/west direction, which is consistent with the results presented in the previous table. It is interesting to note, however, that the November-December data show shorter median number of continuous weeks on claim in the western provinces (Manitoba, Saskatchewan, Alberta) than the corresponding April-May periods. This result is opposite to the pattern in the eastern provinces and is possibly due to differences in job opportunities and differential unemployment rates and their effects on the qualifying requirements and benefit periods.

SUMMARY

This paper has provided some initial results of flow data using the unemployment insurance beneficiary records. The results have shown that there is a large turnover of individuals in RBNE status, that is, it is not a static group of persons. When considering the number of continuous weeks on claim for RBNE exiters, it was apparent that there was little difference among age groups. In the case of the sex variable, there were distinct differences. Comparisons of continuous weeks on claim at the provincial level showed definite geographical differences.

Only two periods were compared, and they showed definite seasonal patterns. As the two months selected were chosen for their net flow extremes (largest positive and largest negative flows), it would appear that the characteristics of the exiters can be drastically altered from one month to the next as a result of the significant flow magnitudes.

The year-to-year comparisons of the percentage distributions showed no large differences for any of the variables.

Plans for further work in this area include the compilation of these types of data on a monthly basis, their derivation for small areas by the use of the postal code, as well as an examination of the occupation codes for both entrants and exiters. It would also be of interest to assess the occurrence of "repeaters." (9)

TABLE 1: BENEFICIARY COUNTS (000's) BY CLAIM TYPE
CANADA, APRIL 1983

REGULAR		SICK-NESS	MATER-NITY	RETIRE-MENT	TRAIN-ING	FISH-ING	WORK SHAR-ING	JOB CREAT-ION	TOTAL
WITH EARNINGS	WITHOUT EARNINGS								
104	1,192	22	38	2	34	29	38	1	1,460

NOTE: Table may not add to total due to rounding.

TABLE 2: AGGREGATE FLOWS INTO AND OUT OF BENEFICIARY STATUS
(REGULAR BENEFICIARIES, NO EMPLOYMENT EARNINGS), CANADA, 1982

MONTH		NUMBER OF BENEFICIARIES (MONTH M-1) (000's)	INFLOW (MONTH M) (000's)	OUTFLOW (MONTH M) (000's)	NET CHANGE (MONTH M) (000's)
M-1	M				
Jan.	- Feb.	897	252	220	32
Feb.	- Mar.	929	172	155	17
Mar.	- Apr.	946	189	164	25
Apr.	- May	971	178	243	-65
May	- June	906	207	248	-41
June	- July	865	216	187	29
July	- Aug.	895	270	208	62
Aug.	- Sept.	956	218	264	-46
Sept.	- Oct.	910	241	200	41
Oct.	- Nov.	951	286	177	109
Nov.	- Dec.	1,063	306	195	111

TABLE 3: PERCENTAGE DISTRIBUTION OF EXITERS (REGULAR BENEFICIARIES, NO EARNINGS) BY SEX AND CONTINUOUS WEEKS ON CLAIM, CANADA

MONTH / YEAR AND SEX	CONTINUOUS WEEKS ON CLAIM							
	1 - 9	10-19	20-29	30-39	40-49	50-59	60+	TOTAL
April-May 1980								
Male	21.0	36.9	28.9	6.1	4.4	2.6	.2	100.1
Female	17.6	21.7	28.1	15.1	10.0	7.4	.3	100.2
April-May 1981								
Male	20.1	33.3	29.4	8.0	5.2	3.9	.2	100.1
Female	15.1	20.7	28.4	16.6	10.9	8.1	.3	100.1
April-May 1982								
Male	19.7	36.2	28.0	7.7	4.6	3.6	.2	100.0
Female	16.7	21.9	27.1	14.1	10.7	9.4	.2	100.1
April-May 1983								
Male	15.7	29.1	26.2	10.7	9.8	8.0	.3	99.8
Female	11.6	17.3	23.7	16.2	16.5	14.4	.2	99.9
Nov.-Dec. 1980								
Male	31.3	19.7	12.3	11.5	13.9	11.1	.3	100.1
Female	23.6	20.2	17.3	13.3	12.7	12.6	.4	100.1
Nov.-Dec. 1981								
Male	38.9	17.7	9.7	10.2	12.8	10.4	.3	100.0
Female	26.4	20.4	15.8	12.2	13.0	12.1	.2	100.1
Nov.-Dec. 1982								
Male	28.4	17.7	10.8	10.1	14.9	17.9	.2	100.0
Female	21.0	17.1	14.2	11.9	14.3	21.2	.2	99.9

NOTE: $\text{Percentage} = \frac{\text{Number of exiters in the cell (Month M)}}{\text{Total exiters in the month (M)}} \times 100$

TABLE 4: EXITING RATES OF REGULAR BENEFICIARIES, NO EARNINGS
BY SEX AND CONTINUOUS WEEKS ON CLAIM, CANADA

MONTH / YEAR AND SEX	CONTINUOUS WEEKS ON CLAIM						
	1 - 9	10-19	20-29	30-39	40-49	50-59	60+
APRIL-MAY 1980							
Male	28.1	32.5	31.4	22.9	31.1	90.1	69.6
Female	18.1	17.4	22.8	21.6	25.3	95.7	71.5
APRIL-MAY 1981							
Male	30.3	33.5	32.4	25.1	31.1	92.5	75.5
Female	17.8	17.7	23.9	23.1	25.9	95.6	67.0
APRIL-MAY 1982							
Male	21.4	25.1	23.2	18.4	24.7	89.2	68.3
Female	13.9	13.4	17.0	15.2	19.5	94.1	71.1
APRIL-MAY 1983							
Male	26.2	28.8	27.5	21.8	31.0	88.1	76.8
Female	16.0	15.6	19.4	18.5	27.1	92.3	72.5
NOV.-DEC. 1980							
Male	15.5	14.5	15.2	18.1	28.5	82.2	79.5
Female	11.3	10.8	13.3	16.7	23.9	91.4	67.5
NOV.-DEC. 1981							
Male	14.8	12.2	12.8	17.2	27.1	80.8	71.2
Female	10.3	9.5	11.3	15.1	23.8	89.1	55.3
NOV.-DEC. 1982							
Male	15.3	11.7	11.3	12.6	21.2	83.6	68.2
Female	9.5	7.9	9.1	10.8	17.0	88.0	62.8

NOTE: Exiting rate = $\frac{\text{Number of exiters in the cell between M-1 and M}}{\text{Total beneficiaries in the cell for month M-1}} \times 100$

TABLE 5: PERCENTAGE DISTRIBUTION OF EXITERS (REGULAR BENEFICIARIES
NO EARNINGS) BY AGE AND CONTINUOUS WEEKS ON CLAIM, CANADA

MONTH / YEAR AND AGE	CONTINUOUS WEEKS ON CLAIM							TOTAL
	1 - 9	10-19	20-29	30-39	40-49	50-59	60+	
Apr.-May 1982								
< 20	17.7	31.5	29.9	9.4	6.2	5.0	.3	100.1
20 - 29	19.1	31.5	27.5	10.4	6.2	5.0	.3	100.0
30 - 39	19.9	32.2	26.3	9.6	6.7	5.1	.2	100.0
40 - 49	19.6	34.6	27.1	8.3	5.7	4.6	.1	100.0
50 - 59	17.7	34.5	29.5	7.3	5.4	5.5	-	100.1
60 - 64	14.3	31.9	32.1	7.2	6.5	8.0	-	100.0
Nov.-Dec.1982								
< 20	21.6	16.1	11.8	11.3	16.9	22.0	.4	100.1
20 - 29	25.1	18.1	12.6	11.1	14.6	18.1	.4	100.0
30 - 39	27.5	19.0	11.6	10.5	13.9	17.3	.2	100.0
40 - 49	28.7	17.5	11.1	10.3	14.2	18.1	.1	100.0
50 - 59	28.7	14.3	10.0	9.8	15.4	21.7	.1	100.0
60 - 64	22.3	13.9	11.0	9.6	16.1	27.1	-	100.0

NOTE: Percentage = $\frac{\text{Number of exiters in the cell (Month M)}}{\text{Total exiters in the month (M)}} \times 100$

TABLE 6: PERCENTAGE DISTRIBUTION OF EXITERS (REGULAR BENEFICIARIES NO EARNINGS) BY PROVINCE AND CONTINUOUS WEEKS ON CLAIM, APRIL-MAY AND NOVEMBER-DECEMBER, 1982

PROVINCE	CONTINUOUS WEEKS ON CLAIM							TOTAL
	1 - 9	10-19	20-29	30-39	40-49	50-59	60+	
APRIL-MAY 1982								
Newfoundland	7.5	22.4	32.3	22.3	8.2	7.1	.1	99.9
Prince Edward Island	7.3	20.4	45.2	9.0	13.4	4.5	.2	100.0
Nova Scotia	14.3	32.6	30.6	9.2	6.5	6.7	.1	100.0
New Brunswick	10.6	23.6	33.4	15.8	11.0	5.6	.1	100.1
Quebec	16.9	29.2	28.1	9.6	7.4	8.5	.3	100.0
Ontario	21.7	37.7	25.6	7.2	4.7	2.9	.3	100.1
Manitoba	21.5	35.4	31.2	6.4	3.4	2.0	.1	100.0
Saskatchewan	18.0	40.4	33.8	5.4	1.8	.6	—	100.0
Alberta	30.6	40.3	22.1	4.4	2.0	.6	—	100.0
British Columbia	24.0	31.2	23.5	11.0	6.4	3.8	.1	100.0
Yukon	15.2	32.1	36.9	7.9	2.8	5.2	—	100.1
Northwest Territories	15.4	32.7	38.1	8.9	3.5	3.5	—	100.1
NOV.-DEC. 1982								
Newfoundland	29.1	13.6	7.5	7.6	17.8	24.3	.1	100.0
Prince Edward Island	22.9	14.7	18.1	15.6	15.7	13.1	—	100.1
Nova Scotia	21.2	13.5	10.4	12.4	18.5	23.7	.4	100.1
New Brunswick	19.8	16.3	10.4	10.4	18.4	24.6	.2	100.1
Quebec	19.0	14.7	10.5	10.4	17.8	27.2	.3	100.0
Ontario	30.6	20.0	11.6	10.5	13.2	13.8	.3	100.0
Manitoba	48.1	15.3	10.1	9.8	8.6	8.1	—	100.0
Saskatchewan	33.4	22.7	14.2	12.0	10.1	7.5	—	99.9
Alberta	34.9	21.3	16.1	11.9	9.4	6.4	—	100.0
British Columbia	25.5	19.1	14.4	11.1	12.9	16.9	.1	100.0
Yukon	31.8	21.8	16.1	10.0	6.2	14.2	—	100.1
Northwest Territories	42.3	25.0	8.3	7.1	5.4	11.9	—	100.0

NOTE: $\text{Percentage} = \frac{\text{Number of exiters in the cell (Month M)}}{\text{Total exiters in the province (Month M)}} \times 100$

NOTES AND REFERENCES

(1) Statistics Canada, **Statistical Report on the Operation of the Unemployment Insurance Act**, Catalogue 73-001.

(2) The Labour Force Survey is the Canadian equivalent to the Current Population Survey in the United States.

(3) Leyes, John, Bobet, E., Radley, L. "The Use of Unemployment Insurance Records to Derive an Unemployment Indicator," **American Statistical Association Proceedings 1982, Section on Survey Research Methods.**

(4) Levesque, Jean-Marc, 1982, "Comparison of Selected Labour Force Survey Data with Administrative Data Derived from the Unemployment Insurance Program," **Unpublished paper, Economic Characteristics Staff, Statistics Canada.**

(5) The postal code is similar in concept to the ZIP code in the United States.

(6) The number of weeks of insurable employment necessary to qualify for benefits depends upon the prevailing rate of unemployment in the region of residence, with the minimum being 10 weeks and the maximum being 14 weeks.

(7) A 3-tier benefit structure exists, comprising an initial benefit phase (25 weeks maximum), a labour force extended phase (13 weeks maximum) and a regional extended phase (32 weeks maximum).

(8) The S.I.N. is equivalent to the Social Security Number in the United States.

(9) For some information on the British experience, see Hughes, Peter, "Flows On and Off the Unemployment Register," Employment Gazette, December 1982.