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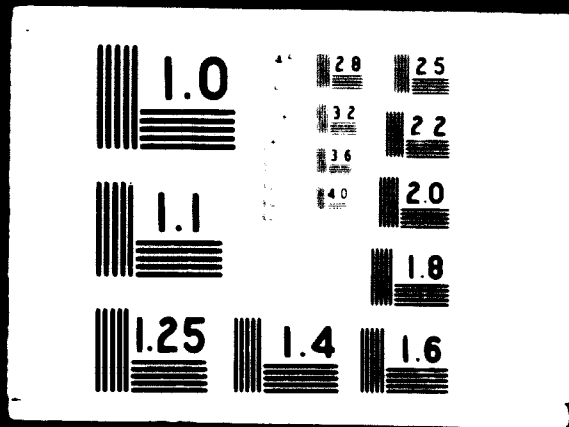
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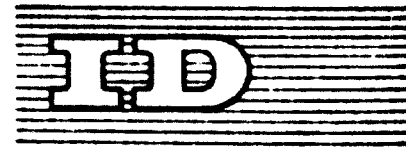
REGIONAL ECONOMIC GROWTH AND LABOUR MOBILITY IN CANADA

1956 to 1961

by

J.C. Mills
Department of Economics, Waterloo Lutheran University,
Ontario, Canada

1 The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO.



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SUMMARY

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* This is a summary of a paper issued under the same title as ID/WG.9/8.

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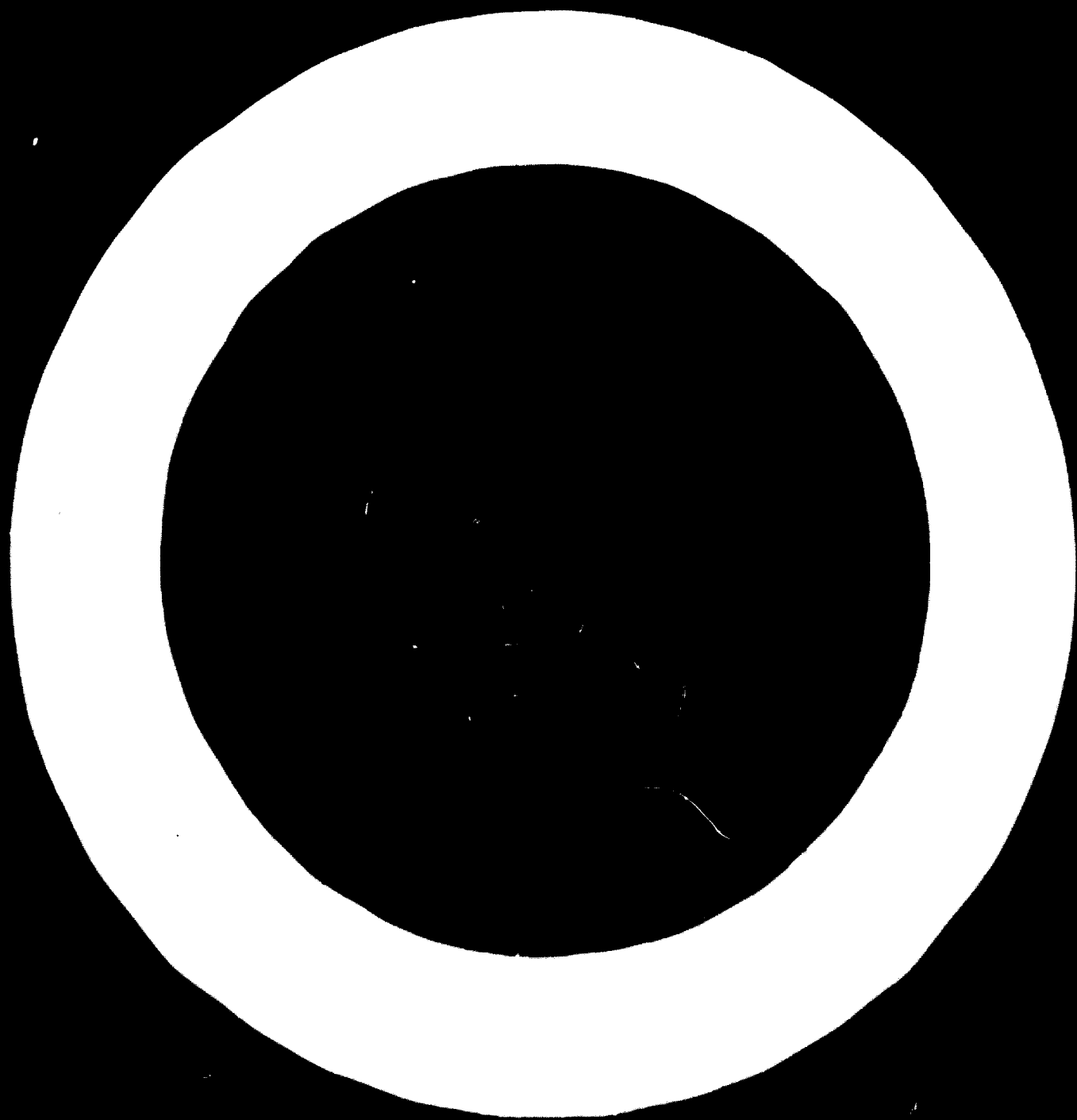
We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

1. The period covered in this study is 1956 to 1961, the first occasion, and the last to date, on which reasonably accurate census data are available. Canadian economists have tended to ignore the question of internal migration, possibly because of the paucity of statistics. The years 1956 to 1961 are of particular interest as constituting a period of stagnation in economic growth in this country.
2. The leading historical study of internal migration and economic growth in Canada, covering the period 1871-1951, identifies four economic factors influencing migration. The first is higher per capita income. The second is the shift from agriculture to manufacturing and the shift from rural to urban areas. The third factor is that females, once less mobile than males are now more mobile. The fourth factor is that high birth rate areas tend to lose population to low birth rate areas. Migration seems to fluctuate with the business cycle.
3. The Canadian population and the labour force are quite mobile, particularly for short distances. Interprovincial and interregional migration of workers is fairly negligible in terms of numbers involved as compared with those already or still residing in the province or region. Three provinces - Ontario, Alberta and British Columbia - were net gainers of working migrants while the remaining seven provinces were losers. Regionally, two regions, Ontario and British Columbia, gained during 1956-1961 and three lost.
4. Various possible relationships of labour mobility with various economic variables have been investigated and the results may be tabulated as follows:

Birth rates:	Some influence
<u>Per capita</u> income levels:	Close relationship
Geographical distance:	Little influence
Language and customs:	Little influence
Population age distribution:	Little influence
Growth of employment:	Close relationship
Wage rates:	Fairly close relationship
Changes in relative wage rates:	Little influence
Urban-rural population ratio:	Limited relationship
Population density:	Little influence.
5. Among the occupation groups of the labour force, the service and recreational group shows the highest mobility and farmers the least. In terms of interprovincial mobility, craftsmen and laborers replace farmers as the least mobile group. Levels of educational attainment appear to influence mobility to some extent. Foreign immigrants are more important in terms of numbers than are internal migrants. Classified by major industry group, miners have the greatest tendency to move but workers in finance are above average as well. Primary occupations are not mobile. It is surprising perhaps that a greater proportion

of workers in the manufacturing category are not interprovincial movers.

6. A number of hypotheses have been investigated with regard to labour mobility and industrial location. First, that the export industries of a region tend to attract interprovincial migrants does not appear to be the case. Second, the hypothesis that industries which disperse geographically, that is, do not concentrate in any one region will attract workers from other regions is found to have merit. Third, little evidence seems to support the contention that labour intensive industries will have relatively high labour mobility. Fourth, raw material or resource-oriented industries do not tend relatively to attract interprovincial migrants. In the fifth hypothesis, an attempt is made to estimate industrial efficiency in the leading industries of the wealthiest region and the poorest region. The efficient industries appear to have relatively less mobile labour forces.



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Introduction

1. Canada, while the second largest country in the world in land area, has less than 1 per cent of the world population. The standard of living of the average citizen, a difficult matter to assess in any country, is usually regarded as being second highest in the world. It is among the first half dozen of the world's trading and industrialized nations and has a **bountiful and diversified** range of material resources.
2. But this nation, in recent years at least, has no dearth of problems where economic development is concerned. The great distances and limited population make for **high costs**, particularly in the manufacturing sector. The presence to the South of the world's richest nation leads to a demonstration effect meaning that the average Canadian desires a standard of living beyond the level which can be financed from domestic sources at this stage in economic development. The willingness of foreigners to invest in Canada encourages levels of domestic spending on investment and consumption which can only be financed by **substantial annual inflows of capital**. The degree of foreign investment and control of Canadian industry **rises** each year.
3. There is every indication that economic expansion over a long period of time has failed to narrow the rather **great income differentials** which exist among the **several Canadian regions**. Residents of the poorest province have consistently had per capita incomes only half the level enjoyed by those living in the richest province. Industrialization shows little sign of becoming **less concentrated** in the wealthy highly populated central regions and **spreading** to the poorer regions.
4. As can be seen from figures 1 and 2, Canada is a nation of ten provinces with the regions usually being defined as five in number. At times in the present study, the analysis proceeds on a provincial basis, at other times data available make it possible to take regional consideration into account. Tables 1 and 2 show the ten provinces and the differences in personal income per capita, the five regions and their respective levels of income per capita and the growth rates over considerable periods.
5. The present study focuses on the relationships, if any, between inter-regional labour mobility on the one hand and regional economic growth and industrial location on the other. Obviously this topic is so complex and

Figure 1
The Provinces of Canada

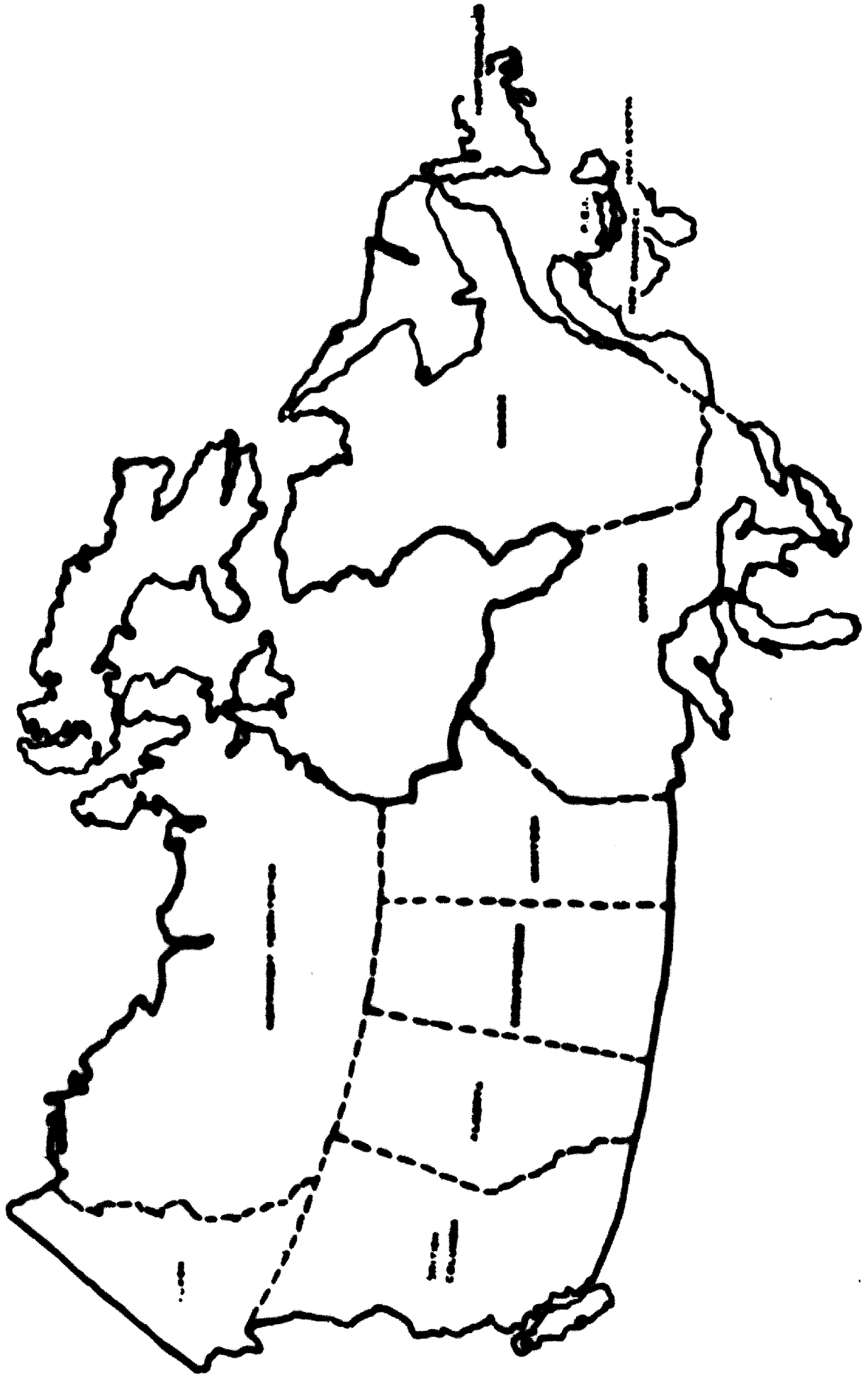


Figure 2
The main regions of Canada

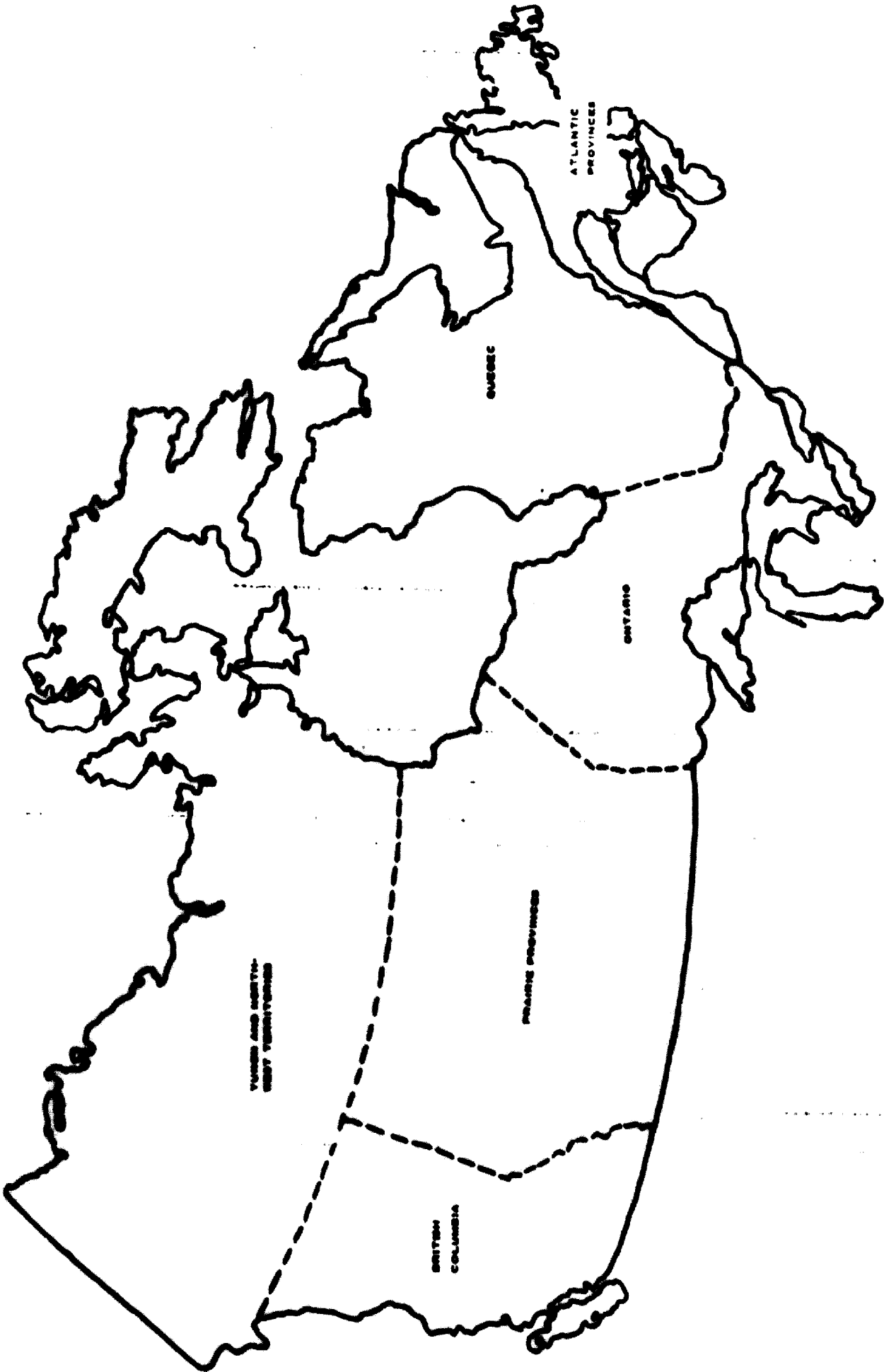


Table 1
Provincial personal income per capita as a
percentage of the national average

	<u>1927</u>	<u>1947</u>	<u>1962</u>
Newfoundland ^{a/}	-	-	59
Prince Edward Island	56	56	62
Nova Scotia	67	80	75
New Brunswick	62	72	67
Quebec	85	83	87
Ontario	115	115	117
Manitoba	103	103	98
Saskatchewan	101	96	96
Alberta	115	109	101
British Columbia	121	115	114

Source: Economic Council of Canada, First Annual Review, p.27.

^{a/} Newfoundland joined Canada in 1949.

Table 2
Level and growth of personal income per capita by region^{a/}

	<u>Level</u>			<u>Average annual</u> <u>growth</u>	
	<u>1927</u>	<u>1947</u>	<u>1962</u>	<u>1927-62</u>	<u>1947-62</u>
	<u>in Canadian dollars</u>			<u>per cent</u>	
Atlantic	286	633	1,124	4.1	4.2
Quebec	378	709	1,442	3.9	4.9
Ontario	509	981	1,930	3.9	4.6
Prairies	468	872	1,636	3.5	4.3
British Columbia	535	980	1,870	3.6	4.4
Canada	435	835	1,600	3.8	4.5

Source: Economic Council of Canada, First Annual Review, p.27.

^{a/} Excluding Newfoundland.

broad as to be worthy of a vast amount of study and detailed investigation. This study can at most deal only briefly and in a very preliminary way with these relationships, drawing what conclusions are possible and indicating fruitful areas for further analysis.

6. In Chapter I the method of analysis is described and brief reference made to historical trends in internal migration. In Chapter II, the mobility characteristics of the Canadian population and labour force are dealt with in terms of sex, distance of movement, the direction interprovincial and interregional migration has taken etc.; Chapter III analyses the influence of a number of variables on labour mobility. By and large, this study is concerned with the factors influencing interprovincial and interregional shifts in the labour force. There is the familiar difficulty of a feedback relationship, namely, is migration a cause or determinant of economic growth or is it an effect or consequence of economic growth? Here we will deal for the most part with the latter or put another way what are the variables which cause an inflow or an outflow of workers from one region to another. To illustrate we enquire whether birth rates, actual or anticipated income levels, income growth rates, age of population, geographical propinquity, differing language and customs, labour force participation rates, the over-all growth in employment, unemployment levels, wage rates, the urban-rural population distributions, and population density appear to have any influence on interprovincial and interregional mobility of workers. In some cases, multiple correlation analysis is used to assess the significance for labour mobility of relative levels of prosperity and fecundity, in other cases a more simple type of analysis is utilized.

7. Chapter IV is concerned with labour mobility analysed in terms of labour force occupation groups and major industries. In Chapter V an attempt is made to relate mobility to industrial location.

I. TECHNIQUES, INCLUDING A HISTORICAL VIEW

Method of analysis

8. The period covered in this study ranges from 1956 to 1961. It might be objected that this is a relatively short period in which to analyse labour mobility and there is some merit in this objection. However, selection of the shorter period was unavoidable.

9. For one thing, migration statistics suitable for our purposes and covering a long historical period are simply not available. A number of studies have been made of internal migration in Canada but on the whole economists have tended to neglect this field.^{1/} Buckley, who is principally interested in the relationship of population moves and business cycles, has two estimates of native born migrants from 1871 to 1951 based on census data. Keyfitz, and later Mc Dougall used life table survival ratios to arrive at migration estimates for 1881 to 1941. The Canada Year Book annually contains a certain amount of data but these data include immigrants from abroad. At the time this paper was being written,^{2/} the Economic Council of Canada had a study of internal migration under way. For more recent years Yoshiko Kasahara has attempted to analyse population shifts on the basis either of the Census or of family allowance information, as is noted later in this study. By and large the analysis to date has not attempted to relate migrants to economic growth and as a result the statistics available in these earlier studies are not useful in the present project.

10. The 1961 Census of Canada, however, did include for a 20 per cent household sample, questions as to the city, town, village or municipality of residence as of 1956. Earlier censuses did not include this information with the one exception of the 1941 census: a wartime year can hardly be regarded as representative. Hence for the first time we do have census data of a reliable nature on internal migration. Admittedly the sample omitted single men and women not living in private households but residing instead in rooming houses and the like, presumably a highly mobile group. It is likely therefore that the census information considerably understates migration. Persons who were not resident in Canada in 1956 but who by 1961 had **emigrated to this country**

^{1/} The best review of what studies have been made is found in A.M. Sinclair (1966) Internal Migration in Canada 1871-1951, unpublished doctoral dissertation, Harvard University. M.C. Urquhart and K.A.H. Buckley (Eds.) (1965) Historical Statistics of Canada, Macmillan, Toronto, contains the Buckley, Keyfitz, Canada Year Book and Mc Dougall estimates of internal migration. Each presents national totals only of migration. The Second Annual Review of the Economic Council of Canada, (1965) Towards Sustained and Balanced Economic Growth, p. 111, has a table estimating net migration on a provincial basis 1941-1951 and 1951-1961 but no matrix is presented showing interprovincial movements, information which is available in the 1961 Census and which is utilized in the present study.

^{2/} June 1966.

are excluded, thus removing one source of possible upward bias in the data. Multiple movements over the period could not be taken into account. Census takers simply noted place of residence in 1961 and asked for the same information as of five years previous.

11. A second basic reason for choosing the period 1956 to 1961, apart from the fact noted above that census data are available only for that period, is that these years on the whole were ones of relatively slow economic growth. The volume of national output rose on the average by less than 1 per cent a year, well below the long term rate. Manufacturing output per capita actually declined (1961 as compared with 1956). Unemployment ratios, particularly in the latter part of the period, were unusually high. Generally, it can be said that the Canadian economy was on something of a plateau in terms of economic growth. Fortunately such periods have been rare in the recent experience of this country but from the point of view of a study of relationships between labour mobility and economic growth, the years 1956 to 1961 are of unusual interest.

12. The techniques used in this study are on the whole simple ones with Chapter III containing a limited amount of multiple correlation analysis. In Chapter V, where an attempt is made to relate labour mobility to industrial location, use is made of location quotients and localization coefficient curves. Perhaps a brief explanatory note as to these techniques is desirable. The location quotient (L.Q.) was invented by E.M. Hoover of the United States of America in the 1930s and has been used extensively by P. Sargant Florence in studies of the British and American economies. The L.Q. is defined, if employment is the base, for industry X in region Y as

$$\frac{\% \text{ region Y has of national employment in industry X}^3}{\% \text{ region Y has of national industrial employment}}$$

^{3/} To illustrate:

	Region				Total
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	
(a) Per cent of employment industry X	20	30	35	15	100
(b) Per cent of total Canadian manufacturing employment	15	20	30	35	100
Location quotient is	$\frac{20}{15}$	$\frac{30}{20}$	$\frac{35}{30}$	$\frac{15}{35}$	
	1.33	1.5	1.7	0.43	

13. The location quotient informs us as to the relative concentration of an individual industry in one region as compared with other regions. Export or carrier industries are identified (L.Q. above 1), useful information to the economists who believe export industries are the engines of growth for a region. Import or passive industries are identified (L.Q. below 1) and import substitution possibilities become evident. Employment is usually taken as the base although other variables may be used. Income is the relevant factor if we are interested in the location of an industry relative to the household market. Welfare implications can be dealt with if population is the base. Some idea of differences in labour productivity may be gained from value added. Or employment in a second and related industry can be used to test geographic linkages of two industries.

14. The L.Q. has serious limitations in view of the necessity of assuming similarity among the regions in tastes and expenditure patterns, production techniques and quality of output. Still the quotient is useful as a means of identifying the kind of industry which is presently promoting regional growth and the kind which offers import substitution possibilities. In the present study, an effort is made in Chapter V to use the location quotient to relate industrial location and labour mobility.

15. The localization coefficient usually associated with the name of P.S. Florence, is a measure of the regional concentration of a given industry relative to some national magnitude such as manufacturing employment, income, population or some other base. The coefficient tells us whether the industry has a tendency to concentrate in one region or to disperse geographically.^{4/} Whether any relationship exists between labour mobility and the geographic concentration of a number of major Canadian industries is analysed briefly in Chapter V.

^{4/} The method of calculating the localization coefficient is:

	Region				Total
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	
(a) Per cent of employment in industry X	20	30	35	15	100
(b) Per cent of total Canadian manufacturing employment	15	20	30	35	100
Difference (row 1 - row 2)	+5	+10	+5	-20	0
<u>L.C. is the sum of the positive (or negative) differences</u> = $\frac{20}{100} = 0.2$					

The limits to the value of the coefficient are 0 and 1. An industry showing little regional concentration has an L.C. close to 0.

A historical view

16. The reader interested in internal migration and economic growth in a much more historical sense than is covered in the present study is referred to a recent paper on this subject by A.M. Sinclair of Dalhousie University, Halifax, Canada.^{5/} Sinclair is concerned principally with the effect of fluctuations in economic growth over time upon internal migration in Canada and not with the effect of migration upon economic growth. For the period 1871 to 1951 he uses the forward census survival ratio technique on census data to estimate migration. The survival ratio relates an observed change in population to an expected change based on age groups at earlier censuses - if the observed total is less for example than the expected, migration has occurred from that province. He finds that from 1921 to 1951 population movements on a net basis were mainly towards Ontario and British Columbia with the Atlantic provinces and the Prairies consistent losers of population.

17. Sinclair identifies four economic factors influencing internal migration: (a) Levels of per capita income were consistently higher during the whole period 1871 to 1951 in the gaining provinces; (b) more recently the shift of the labour force out of agriculture into manufacturing has led to interprovincial migration as has the tendency of the population to move from rural to urban areas; (c) before 1911 males were more mobile than females with the reverse true after 1911; (d) after 1911, interprovincial movements of population tended to be from high birth rate areas to low birth rate areas with some provinces like Quebec, with a high birth rate, experiencing little net population movement. Sinclair finds that both internal migration and migration from abroad normally respond to fluctuations in economic prosperity. There appears to be no systematic relationship between growth in the United States of America (attracting immigrants from Canada) and internal migration in Canada. Sinclair reaches the conclusion that internal migration over this long period tended to respond positively to both spatial and temporal variations in economic growth in Canada.

18. Since the preparation of the present paper, the Economic Council of Canada has published a study by Isabel B. Andersen using the census survival

^{5/} A.M. Sinclair (1966) Economic Growth and Internal Migration in Canada, 1871-1951, paper presented to the Annual Meetings, Canadian Political Science Association, Sherbrooke, Quebec.

technique.^{6/} While Andersen concentrates principally on statistical measurement of net internal migration in Canada over a lengthy period of years, she does observe that patterns of migration are influenced by differences among the provinces in per capita income levels and in relative rates of income growth.

II. MOBILITY IN CANADA

19. The data in table 3 provide some indication of the mobility of the Canadian population. It hardly seems appropriate to make international comparisons even if information were available since each nation is obviously unique in its physical size, transportation facilities, industrial structure and so on. Nor, as has been pointed out earlier in this paper, can adequate comparisons over time be made. But we do have some idea of the situation in 1961 as compared with 1956.

Table 3
Canadian population, type of movement

Population in 1961	Total movers	Canadian residents			Other	Migrants from abroad
		Short distance	Medium distance	Long distance		
<u>Males</u>						
7,691,110	3,235,921	1,933,018	1,022,254	266,172	14,477	234,812
100.0%	42.1%					
	100.0%	59.7%	31.6%	8.2%	0.5%	
<u>Females</u>						
7,611,511	3,248,079	1,930,761	1,042,221	260,618	14,479	235,103
100.0%	42.7%					
	100.0%	59.4%	32.1%	8.0%	0.5%	
<u>Total</u>						
15,302,621	6,484,000	3,863,779	2,064,475	526,790	28,956	469,915
100.0%	42.4%					
	100.0%	59.6%	31.8%	8.1%	0.5%	

Source: Based on 1961 Census of Canada, Catalogue No.98-509, vol.IV.

^{6/} Isabel B. Andersen (1966) Internal Migration in Canada, Economic Council of Canada, Ottawa (Staff Study No.13).

20. For the population as a whole 42 out of every 100 had moved, indicating surely a high degree of mobility. Virtually every second person had moved his or her place of residence. A great deal of this mobility, however, is obviously not related to industrial growth or location, since as table 3 shows, some 60 per cent of the movers did so for a short distance only, that is within the same municipality, the smallest unit of government in Canada. Moves within the same municipality, arbitrarily defined in table 3 as short distance ones, probably have very limited significance for industrial growth. Not quite one third of all moves were medium distance, that is within the same province. Those who moved a long distance, or put another way, the interprovincial movers, comprised some 8 per cent of all movers. Thus we conclude that interprovincial migration is not very great, nor is sex significant for virtually no difference in type of movement is evident as between males and females.

21. Perhaps a more meaningful comparison for our purposes is the type of movement in the labour force rather than the population. Table 4 classifies movers by distance of move. The results are very similar to those in table 3 except perhaps that the mobility of the labour force is greater than that of the population, 46 out of every 100 persons having moved. Females in the labour force are evidently more inclined to move than males. However their moves tend to be rather for short distances, i.e. within the same municipality, than interprovincially.

22. Interprovincial migration of the labour force 1956 to 1961 is shown in tables 5 and 6. Similar information is not readily available for the population as a whole. It will be noted from table 6 that during 1956 to 1961, seven provinces were losers, on a net basis, of members of the labour force - Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Manitoba, and Saskatchewan - while three provinces gained, namely Ontario, Alberta and British Columbia.

23. The data in table 5 have been rearranged in table 7 so as to illustrate the interregional net migration of the labour force. From table 8 it is evident that of the five major regions of Canada, Ontario and British Columbia, gained in terms of net migration of the labour force.

24. An attempt is made in the succeeding chapters of this paper to relate these movements of population and labour force to industrial growth.

Table 4
Canadian labour force, type of movement

<u>Labour force in 1961</u>	<u>Total movers</u>	<u>Canadian residents</u>			<u>Other</u>	<u>Migrants from abroad</u>
		<u>Short distance</u>	<u>Medium distance</u>	<u>Long distance</u>		
<u>Males</u>						
4,512,081	2,036,423	1,218,407	635,705	172,639	9,672	168,901
100.0%	45.1%					
	100.0%	59.8%	31.2%	8.5%	0.5%	
<u>Females</u>						
1,646,468	783,511	486,830	233,090	59,921	3,670	83,641
100.0%	47.6%					
	100.0%	62.1%	29.8%	7.6%	0.5%	
<u>Total</u>						
6,158,549	2,819,934	1,705,237	868,795	232,560	13,342	252,542
100.0%	45.8%					
	100.0%	60.5%	30.8%	8.2%	0.5%	

Source: Based, at time of writing, on unpublished data from the Dominion Bureau of Statistics which will be published in the 1961 Census of Canada, Catalogue No.98-510.

Table 5
Interprovincial migration from 1956 to 1961, total Canadian labour force

To	From	Province of residence (1956)										Total migrants (excluding those from abroad)
		Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	
Newfoundland	-	95	504	273	328	788	109	32	76	50	2,305	
Prince Edward Island	29	-	522	301	171	500	68	57	53	26	1,737	
Nova Scotia	808	470	-	1,707	1,226	4,070	488	211	212	805	10,193	
New Brunswick	314	413	3,074	-	1,569	2,802	438	93	212	315	9,282	
Quebec	655	237	1,959	4,155	-	17,342	1,384	465	1,262	1,385	29,031	
Ontario	2,604	1,429	9,529	6,137	23,300	-	8,517	4,106	5,684	7,154	69,171	
Manitoba	108	62	557	248	970	6,737	-	4,889	2,342	2,177	19,309	
Saskatchewan	105	25	185	90	417	2,612	3,528	-	4,070	2,542	13,810	
Alberta	205	179	863	489	1,556	6,776	4,714	12,617	-	9,399	27,696	
British Columbia	203	123	1,368	419	2,078	8,055	5,084	7,182	11,596	-	36,856	

Source: Same as for table 4.

Table 6

Net interprovincial migration from 1956 to 1961, Canadian labour force

		Males	Females	Total
Newfoundland	in	1,898	387	2,285
	out	3,737	1,294	5,031
	net	- 1,839	- 907	- 2,746
Prince Edward Island	in	1,458	269	1,727
	out	1,927	1,106	3,033
	net	- 469	- 837	- 1,306
Nova Scotia	in	8,079	2,018	10,097
	out	13,659	4,902	18,561
	net	- 5,580	- 2,884	- 8,464
New Brunswick	in	7,439	1,791	9,230
	out	9,513	4,306	13,819
	net	- 2,074	- 2,515	- 4,589
Quebec	in	21,843	7,001	28,844
	out	23,751	7,864	31,615
	net	- 1,908	- 863	- 2,771
Ontario	in	49,656	18,804	68,460
	out	38,216	11,466	49,682
	net	+ 11,440	+ 7,338	+ 18,778
Manitoba	in	13,537	4,553	18,090
	out	18,062	6,268	24,330
	net	- 4,525	- 1,715	- 6,240
Saskatchewan	in	10,647	2,927	13,574
	out	20,932	8,720	29,652
	net	- 10,285	- 5,793	- 16,078
Alberta	in	26,520	10,278	36,798
	out	19,318	6,291	25,609
	net	+ 7,202	+ 3,987	+ 11,189
British Columbia	in	25,831	10,279	36,110
	out	17,793	6,090	23,883
	net	+ 8,038	+ 4,189	+ 12,227

Source: Same as for table 4.

Table 1
Intervisual Migration from 1956 to 1961
Canadian Labour Force

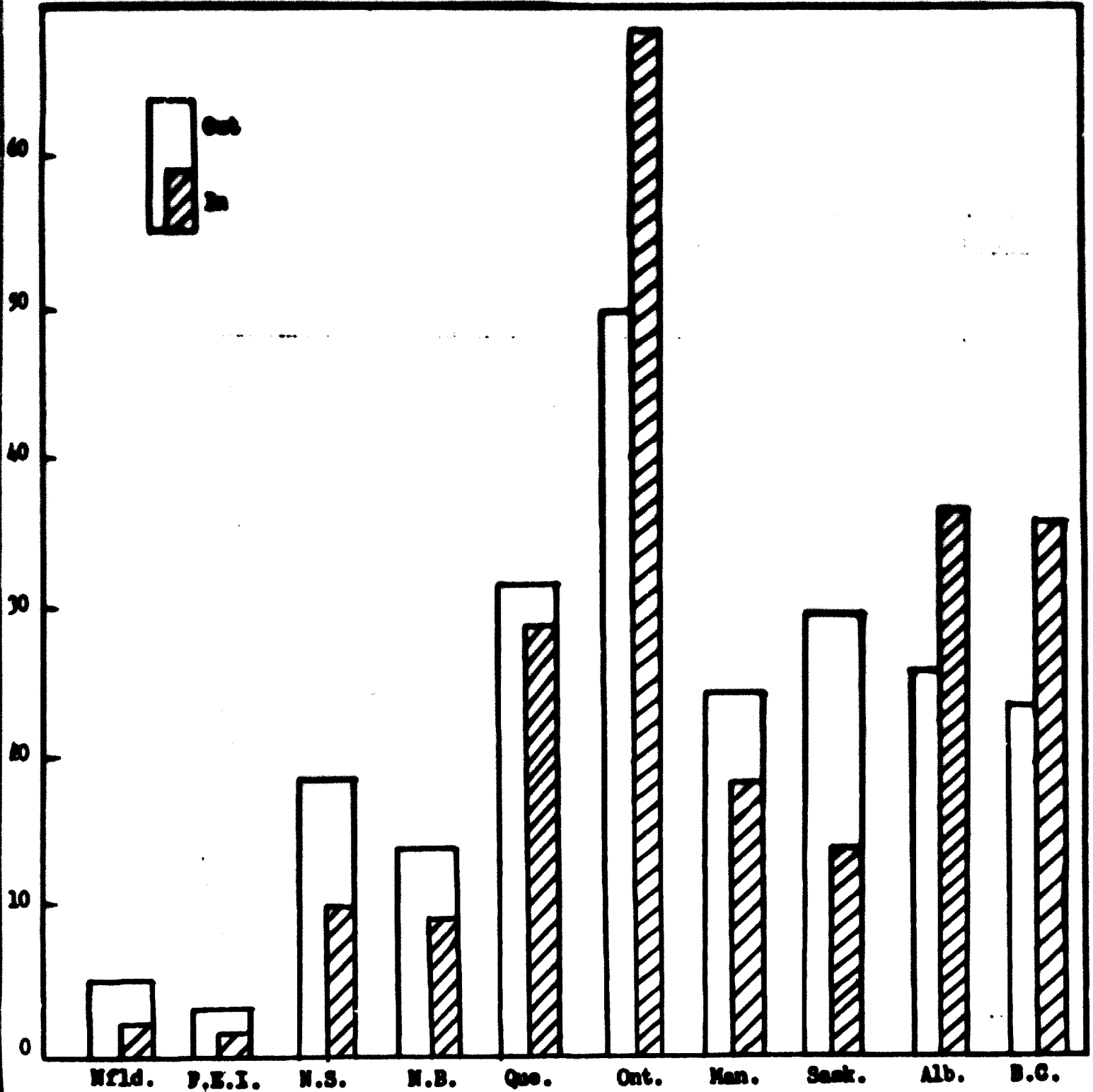


Table 7Interregional migration from 1956 to 1961, total Canadian labour force

From Region of residence (1961)	Region of residence (1956)				
	Atlantic	Quebec	Ontario	Prairies	British Columbia
Atlantic	-	3,294	8,160	2,149	1,226
Quebec	7,006	-	17,342	3,111	1,385
Ontario	19,699	23,308	-	18,307	7,154
Prairies	3,116	2,943	16,125	-	14,118
British Columbia	2,113	2,078	8,055	23,864	-

Source: Same as for table 4.

Table 8Net interregional migration from 1956 to 1961, Canadian labour force

		Total
Atlantic	in	14,829
	out	31,934
	net	- 17,105
Quebec	in	28,844
	out	31,623
	net	- 2,779
Ontario	in	68,468
	out	49,682
	net	+ 18,786
Prairies	in	36,302
	out	47,431
	net	- 11,129
British Columbia	in	36,110
	out	23,883
	net	+ 12,227

Source: Same as for table 4.

III. SOCIAL AND ECONOMIC RELATIONSHIPS OF LABOUR MOBILITY

Birth rates

25. The question may properly be asked whether there is a relationship between birth rates and interregional migration of the labour force. In other words, is there a push effect whereby high birth rates in one period lead to an exodus in the next period from that region to one with relatively low birth rates? Or perhaps above-average birth rates cause emigration in the same time period?
26. Let us first of all investigate whether high birth rates in the period 1951 to 1956 led to emigration in 1956 to 1961, or put another way, whether low birth rates in the earlier period led to a subsequent net inflow of the labour force. Table 9 has the relevant provincial birth rates while table 10 illustrates the relationships. The three gaining provinces, Ontario, Alberta and British Columbia, had below average birth rates from 1951 to 1956 and it may therefore be said that low birth rates may exercise a pull effect. Of the seven provinces which suffered a net loss of the labour force in 1956 to 1961, only three in the earlier period had relatively high birth rates so little push effect is evident. The lack of any firm relationship, at least so far as a push effect is concerned, is also present if birth rates representative of the period 1956 to 1961 are compared with labour mobility figures for the same period.
27. A somewhat closer relationship is evident if the data are analysed on a regional basis as in table 11. The results must be used with great care because placing the figures on a more aggregate basis means for example that Alberta, a high birth rate province which is a net migration gainer, is included with two provinces in the reverse situation with the Prairie region as a whole exhibiting different characteristics in this regard from Alberta alone. In any case, on a regional basis the push effect of high birth rates in 1951 to 1956 is evident on net migration in 1956 to 1961 in the case of two of the three losing regions, while the pull effect of low birth rates can be discerned in both gaining regions. There is no change in the situation if shorter period (1956 to 1961) is involved. Hence regionally there does appear to be a relationship between birth rates and net migration, both with a "lag" effect and in shorter periods as well.

Income levels

28. Does a relationship exist, on a provincial or regional basis, between per capita personal income on the one hand and labour mobility on the other? This question may be dealt with both in terms of actual and anticipated income levels and the various growth rates for income. In Canada it is generally accepted that the best available measure of provincial economic growth is personal income per head and this indicator will therefore be used.
29. First we turn to the influence of actual levels per capita incomes at the beginning of the period as related to mobility during the period. Table 12 indicates a close relationship between the two variables. For the pull effect, of four provinces with above average per capita incomes, three subsequently experienced net migration. For the push effect, of the six provinces with below average income, all experienced net outflows of the labour force.
30. Next we consider the effect of anticipated levels of income on labour mobility. Table 13 contains data on 1961 provincial incomes per capita, which may be defined very roughly as anticipated income for members of the labour force who moved interprovincially in the period 1956 to 1961. In this case there is a close relationship between labour mobility on the one hand and anticipated income levels on the other. The three provinces which gained relatively in terms of the labour force, had also higher than average incomes per capita in 1961. It was not possible to assess whether the migrants were the cause of the higher incomes: this hardly seems likely as five years before the three provinces were in the same position relative to other provinces in terms of income per head. A pull effect seems present. As to the push effect, whereby members of the labour force might be assumed to anticipate that their province of residence will continue to be below average income-wise and movement away towards the wealthier provinces is personally desirable, table 13 shows that in every case, a province with below average 1961 income, arbitrarily defined for our purposes as anticipated income prior to 1961, experienced a net loss of labour force. The push effect of anticipated low income on labour mobility appears substantiated, to some degree at least.
31. Regional data are found in tables 14 and 15. Once again a fairly close relationship is found between actual income levels and labour mobility and a

very close one between anticipated income levels and mobility. Of course, the period of time under analysis is brief and was not a time of rapid economic growth in Canada, and our results must therefore be regarded as tentative.

32. The impression that relative income levels have considerable impact on interprovincial movements of the labour force is confirmed by the data in table 5. Taking by way of illustration Ontario, the largest and wealthiest province, of some 69,000 workers who lived there in 1961 but had lived elsewhere in Canada in 1956, about 43,000 or over 60 per cent had moved from provinces which in 1956 had average per capita income levels of 75 per cent or less of the Ontario level.

33. The great significance of higher levels of income in attracting net migration from less wealthy areas has been pointed out by Yoshiko Kasahara of the Dominion Bureau of Statistics, Ottawa, Canada.¹⁷ In an interesting attempt to estimate migration among the provinces, Kasahara uses the monthly record of interprovincial transfers of family allowances accounts, the well-known "baby-bonus" paid to parents. The method has its limitations as immigrants from abroad are included and single men and women, presumably a highly mobile group, are excluded, multiple and return movements are included, and other difficulties exist as well. Still, the technique is a useful one in an area of economic analysis where data are sparse.

34. Table 16 indicates that where total population movement (1956-1961) is concerned, Ontario, the province with the highest level of income per head, received the largest proportion of the labour force exodus from six provinces. In the case of the three western-most provinces, geographical distance was evidently a more important factor than relative income levels, a point which might be kept in mind when subsequently the relationship of geographical proximity and labour mobility is analysed.

¹⁷ Yoshiko Kasahara (1963) "The Flow of Migration among the Provinces in Canada, 1951-1961", in W.C. Hood and J.A. Sawyer (Eds.) Papers of the Canadian Political Science Association Conference on Statistics, 1961, University of Toronto Press.

Table 9
Birth rates by province for 1951, 1956 and 1961

(per thousand population)

	1951	1956	Average of 1951 and 1956	1961	Average of 1956 and 1961
Newfoundland	32.5	35.0	33.7	34.1	34.5
Prince Edward Island	27.1	26.8	26.9	27.1	26.9
Nova Scotia	26.6	27.5	27.0	26.3	26.9
New Brunswick	31.2	29.9	30.5	27.7	28.8
Quebec	29.8	29.4	29.6	26.1	27.7
Ontario	25.0	26.6	25.8	25.3	25.9
Manitoba	25.7	25.8	25.7	25.3	25.5
Saskatchewan	26.1	27.3	26.7	25.9	26.6
Alberta	28.8	31.1	29.9	29.2	30.1
British Columbia	24.1	25.9	25.0	23.7	24.8
Canada	27.2	28.0	27.6	26.1	27.0

Source: Canada Year Book (annual)

Table 10
Relationships between birth rates and interprovincial labour mobility

	1951-56 birth rates		1956-61 labour mobility		Pull effect evident	Push effect evident	1956-61 birth rates		Push effect evident	Pull effect evident
	low	high	in	out			low	high		
Newfoundland		X		X		X		X		
Prince Edward Island	X			X			X			
Nova Scotia	X			X			X			
New Brunswick		X		X		X	X	X		X
Quebec		X		X		X	X	X		X
Ontario	X		X		X		X			
Manitoba	X			X			X			
Saskatchewan	X			X			X			
Alberta		X	X					X		
British Columbia	X		X		X		X			

Source: Tables 6 and 9.

Table 11

Relationships between birth rates and interregional labour mobility

	1951-56		1956-61	Pull effect evident	Push effect evident	1956-61		Push effect evident	Pull effect evident
	birth rates	labour mobility				birth rates	Push effect evident		
	<u>low</u>	<u>high</u>				<u>in</u>	<u>out</u>		
Atlantic		X	X		X		X	X	
Quebec		X	X		X		X	X	
Ontario	X		X	X		X			X
Prairies	X		X			X			
British Columbia	X		X	X		X			X

Source: Tables 8 and 9.

Table 12

Relationships between labour mobility and actual income by province

	1956 per capita income (in Can. \$)	Income relative to Can. average		Migration 1956-61	Push effect evident	Full effect evident		
		<u>below</u>	<u>above</u>				<u>in</u>	<u>out</u>
		Newfoundland	735				X	
Prince Edward Island	768	X		X	X			
Nova Scotia	999	X		X	X			
New Brunswick	917	X		X	X			
Quebec	1,172	X		X	X			
Ontario	1,610		X	X		X		
Manitoba	1,305	X		X	X			
Saskatchewan	1,376		X	X				
Alberta	1,418		X	X		X		
British Columbia	1,618		X	X		X		
Canada	1,365							

Source: Canadian National Accounts (annual) and table 6.

Table 13

Relationships between labour mobility and anticipated income, by province

	1961 per capita income (in Can. \$)	Income relative to Can. average		Migration 1956-61		Push effect evident	Pull effect evident
		below	above	in	out		
Newfoundland	934	X			X	X	
Prince Edward Island	962	X			X	X	
Nova Scotia	1,197	X			X	X	
New Brunswick	1,064	X			X	X	
Quebec	1,383	X			X	X	
Ontario	1,843		X	X			X
Manitoba	1,513	X			X	X	
Saskatchewan	1,222	X			X	X	
Alberta	1,595		X	X			X
British Columbia	1,813		X	X			X
Canada	1,564						

Source: Canadian National Accounts (annual) and table 6.

Table 14

Relationships between labour mobility and actual income, by region

	1956 per capita income (in Can. \$)	Income relative to Can. average		Migration 1956-61		Push effect evident	Pull effect evident
		below	above	in	out		
Atlantic	898	X			X	X	
Quebec	1,172	X			X	X	
Ontario	1,610		X	X			X
Prairies	1,371		X		X		
British Columbia	1,618		X	X			X
Canada	1,365						

Source: Canadian National Accounts (annual) and table 8.

Table 15

Relationships between labour mobility and anticipated income, by region

	<u>1961 per capita income (in Can. \$)</u>	<u>Income relative to Can. average</u>		<u>Migration 1956-61</u>		<u>Push effect evident</u>	<u>Pull effect evident</u>
		<u>below</u>	<u>above</u>	<u>in</u>	<u>out</u>		
Atlantic	1,079	X			X	X	
Quebec	1,383	X			X	X	
Ontario	1,843		X	X			X
Prairies	1,463	X			X	X	
British Columbia	1,813		X	X			X
Canada	1,564						

Source: Canadian National Accounts (annual) and table 8.

35. It is of interest to note Kaschra's observation that a fairly close correlation appears to exist between the stage of economic development in a given province and its rate of population growth or decline due to migration. A trend in net migration gain or loss observed in a given area is dependent upon economic expansion or contraction. She also concludes that the movement of Canada's population across the provincial boundaries in recent years has been rather negligible. Even in Ontario and British Columbia, the largest net gainers, the average addition per year by migration was less than 1 per cent of their respective base populations. Even in the losing provinces, the ratio has not exceeded 2 per cent.

Table 16

Percentage distribution of estimated migrant population by province of destination and by province and territory of origin, from June 1956 to May 1961

Province of origin	Province of destination										Yukon and N.W.T.	
	Total	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.		B.C.
Total	100.0	1.4	1.2	7.0	5.3	13.3	28.2	7.9	7.4	14.0	12.5	1.7
Nfld.	100.0	-	1.5	24.9	8.1	14.1	40.3	3.1	1.3	3.5	2.9	0.2
P.E.I.	100.0	2.8	-	30.4	18.9	6.7	31.3	1.7	0.9	3.2	3.4	0.7
N.S.	100.0	4.5	4.4	-	18.8	13.5	45.1	3.0	0.9	2.9	6.4	0.6
N.B.	100.0	2.1	3.8	20.9	-	25.2	39.4	2.3	0.7	2.4	2.7	0.6
Que.	100.0	1.4	0.6	6.2	7.7	-	71.5	3.0	1.0	3.6	4.3	0.6
Ont.	100.0	2.1	1.5	12.0	7.6	37.1	-	13.0	5.1	10.3	10.1	1.3
Man.	100.0	0.5	0.4	2.6	1.6	5.9	36.3	-	18.8	16.9	15.8	1.2
Sask.	100.0	0.1	0.2	0.7	0.4	1.5	14.0	18.0	-	42.4	21.6	1.1
Alta.	100.0	0.3	0.3	1.6	1.0	3.7	19.0	9.4	21.2	-	38.7	4.7
B.C.	100.0	0.3	0.3	4.3	1.5	5.6	22.1	9.2	13.6	39.5	-	3.7
Yukon and N.W.T.	100.0	0.2	0.6	3.7	1.5	5.5	21.8	5.9	5.6	30.9	24.2	-

Source: Yoshiko Kaschura (1963) 'The Flow of Migration among the Provinces in Canada, 1951-1961', in W.C. Hood and J.L. Sawyer (Eds.) Papers of the Canadian Political Science Association Conference on Statistics, 1961, University of Toronto Press.

Income growth rates

36. What about labour mobility and income growth rates, assuming a one-way relationship, that is to say that the relative growth rates of provincial and regional per capita income influence the degree and direction of movement in the labour force rather than vice versa. Again we may investigate a possible lag effect, that is the growth of income from 1951 to 1956 compared with net migration from 1956 to 1961 and secondly for the later period only. Real growth rates are used, deflating via the national consumer price index, to avoid as much as possible price distortions. Very little correlation is evident in table 17 between the two variables. No pull effect is discernible and for the push effect, of the seven provinces with a net migration loss, only two had as well below average growth in real income per capita. When the years 1956 to 1961 are considered, a time of unusually slow economic expansion and high unemployment in Canada, little if any influence of real income growth rates on labour mobility can be found. Members of the labour force are evidently much more concerned with levels than with the growth rates of income.

37. Interregional figures in table 18 confirm the lack of relationship between income growth rates and mobility of the labour force. No push effect and limited pull effect is indicated when income growth rates in the earlier period are compared with migration in the subsequent period. When only the latter time period is taken into account, much the same conclusion is reached.

Geographical propinquity

38. Though the Canadian labour force is highly mobile, the majority of moves are for relatively short distances, i.e. within the same municipality (table 3). Only 8 per cent of the movers covered longer distances, i.e. **moved inter-provincially**. This would lead us to the hypothesis that labour mobility and geographical propinquity have a reasonably close relationship or, put another way, that most of the inflow of workers received from a province comes from contiguous provinces, that is the two closest provinces, one on either side. Table 19 contains information on the relationship between labour force mobility and geographical distance. The ratio of migrants from the two contiguous provinces to total migrants ranges from a low in the 20 to 30 per cent range in the Atlantic provinces to a high of about 75 per cent in Quebec. In each province of the Prairie region over one out of two **new workers migrating**.

interprovincially come from the adjacent provinces, a striking point perhaps since two of the three provinces are below the national average in terms of per capita income levels. It is surprising that in Ontario less than half the inflow came from either considerably less wealthy Manitoba to the West or from populous Quebec in the East. On balance, particularly in view of the relative importance of Ontario, we may conclude that geographical propinquity or distance are in the Canadian case not as important a factor in influencing labour mobility as, a priori, would be supposed.

Language and customs

39. One would suppose that a difference in language and customs in one province or region would act as a barrier greatly inhibiting the mobility of the labour force. Canada has two provinces, Quebec and New Brunswick, where either French is the dominant language or at least half of the residents are of French-Canadian origin. It would, for example, be expected that workers leaving New Brunswick would tend to go in large numbers to Quebec, an adjoining province of similar language and much higher per capita income. Yet as table 5 shows, of an outflow of almost 14,000 members of the labour force from New Brunswick during 1956 to 1961, some 4,000 went to Quebec while 6,000 went geographically further to the English speaking but top level income per head province of Ontario. Similarly, much the greatest proportion of workers leaving Quebec for other provinces went to Ontario, a very different area in terms of language and customs. Hence, if language and customs may be interpreted as representing the sociological aspects, there is every indication that economic factors are of much greater importance in determining the direction and magnitude of interprovincial movements of the labour force.

Labour force participation rates

40. The high labour force participation rates are sometimes taken as indicators of the degree of industrialization in a region. The hypothesis may therefore be tested as to whether provinces with high participation rates and presumably a high degree of industrialization, tend on a net basis to attract workers from other provinces. Without entering into complex calculations as to respective participation rates, the information in table 20 indicates only a limited relationship between the level of industrialization on the one hand, as defined in terms of labour force participation rates, and net migration on the other. The push effect of a low level of industrialization

Table 17

Relationships between labour mobility and income growth rates during 1951, 1956 and 1961, by provinces

	Real income per capita (in Can.\$)		Annual growth rate (in %) 1956-61	Relative to national average		Migration 1956-61	Push effect evident	Pull effect evident	Real income per capita (in Can.)	Annual growth rate (in %) 1956-61	Relative to national average		Migration 1956-61	Push effect evident	Pull effect evident
	1951	1956		below	above						in	out			
Newfoundland	500	622	4.5	X	X	X		622	3.1		X	X			
Prince Edward Island	538	650	3.9	X	X	X		650	2.8		X	X			
Nova Scotia	682	846	4.9	X	X	X		846	1.8		X	X			
New Brunswick	653	776	4.0	X	X	X		776	1.2		X	X			
Quebec	816	992	4.0	X	X	X		992	1.5		X	X			
Ontario	1,165	1,363	3.2	X		X		1,363	0.9	X		X			
Manitoba	998	1,105	2.1	X		X	X	1,105	1.2		X	X			
Saskatchewan	1,169	1,165	-0.1	X		X	X	1,165	-4.3	X		X	X		
Alberta	1,150	1,200	0.8	X		X		1,200	0.6	X		X			
British Columbia	1,184	1,370	3.0	X		X		1,370	0.9	X		X			
Canada	994	1,156	3.1					1,156	0.9						

Source: Canadian National Accounts (annual) and table 6. Consumer price index is 1949 = 100.

Table 18
Relationships between labour mobility and income growth rates during 1951, 1956 and 1961, by region

	Real income per capita (in Can.)		Annual growth rate (in %) 1956-61	Relative to national average		Migration 1956-61	Push effect evident	Pull effect evident	Real income per capita (in Can.)		Annual growth rate (in %) 1956-61	Relative to national average		Migration 1956-61	Push effect evident
	1951	1956		below	above				1956	1961		below	above		
Atlantic	624	760	4.0	X	X	X			760	835	1.9	X	X	X	
Quebec	816	992	4.0	X	X	X			992	1,070	1.5	X	X	X	
Ontario	1,165	1,363	3.2	X	X	X		X	1,363	1,426	0.9	equal	X		
Prairies	1,110	1,161	0.9	X	X	X			1,161	1,132	0.5	X	X	X	
British Columbia	1,184	1,369	3.0	X	X	X			1,369	1,403	0.0	equal			
Canada	994	1,156	3.1						1,156	1,211	0.9				

Source: Regional real per capita income calculated from Canadian National Accounts (annual) and table 6. Consumer price index is 1949 = 100.

Table 19
Relationships between labour mobility and geographical distance
during 1961

<u>Province</u>	<u>Total inflow of labour force</u>	<u>Inflow total from 2 adjoining provinces</u>	<u>Percentage</u>
Prince Edward Island	1,737	551	31.8
Nova Scotia	10,193	2,177	21.4
New Brunswick	9,282	3,487	37.6
Quebec	29,021	21,497	74.1
Ontario	69,171	31,817	46.0
Manitoba	18,306	11,626	63.5
Saskatchewan	13,810	7,598	55.1
Alberta	37,696	22,016	58.4

Source: Table 5. Newfoundland and British Columbia, at the eastern and western geographical extremes of the country, are omitted as each has only one contiguous or adjoining province.

Table 20
Relationships between labour mobility and labour force participation rates

<u>Area</u>	<u>Participation rates</u>	<u>Relative national average</u>		<u>Migration 1956/61</u>		<u>Push effect evident</u>	<u>Pull effect evident</u>
		<u>below</u>	<u>above</u>	<u>in</u>	<u>out</u>		
Atlantic Region	47	X			X	X	
Quebec	53	X			X	X	
Ontario	57		X	X			X
Manitoba	55		X		X		
Saskatchewan	53	X			X	X	
Alberta	57		X	X			X
British Columbia	52	X		X			
Canada	54						

Source: Economic Council of Canada (1965) Towards Sustained and Balanced Economic Growth, Second Annual Report, Queen's Printer, Ottawa, p 115. Also tables 6 and 8.

causing the labour force to leave is reasonably clear for the Atlantic region, the Quebec region and the province of Saskatchewan but not for Manitoba. The pull effect of a high level of industrialization attracting workers is evident for two of the gaining provinces, Ontario and Alberta, but not for the third, British Columbia.

Population age distribution

41. The age distribution of provincial population is of interest since it can be assumed that a relatively high proportion of the labour force in what might be termed the economically active group, 15 to 64 years of age, is an indicator of a high level of industrial activity. In table 21 for example the industrialized, high income provinces like Ontario, Alberta and British Columbia (the three provinces which in 1961 had per capita incomes above the national average) had by and large a greater proportion of their populations in the economically active category than did the less industrialized low income provinces in the Atlantic region. However, too much emphasis should not be placed on this point since Quebec and Ontario are very close in the respective ratios but considerably apart in their income levels.

42. A push effect from a low level of industrialization, as indicated by a relatively low ratio of the population in the 15-64 age group, is evident in the case of five of the seven provinces which suffered net migration losses from 1956 to 1961 but a major province, Quebec, does not conform to the pattern. The pull effect of a high level of industrial activity attracting workers can be discerned for the three gaining provinces. Hence, if the proportion of the population in the economically active age group is taken as the indicator of stage of industrial development, a fairly close relationship does seem to exist with labour mobility.

43. Incidentally, in another study Yoshiko Kasahara^{8/} makes a number of observations regarding the relationship of internal migration and the family life cycle. She finds that family size as such is not a crucial variable in movement of the labour force but the stage of the family formation cycle is. It should be noted that mobility here is defined as movement across municipal boundaries, a much broader definition than interprovincial mobility. In

^{8/} Yoshiko Kasahara (1965) Internal Migration and the Family Life Cycle: Canadian Experience over the 1956-61 Period, paper presented at the United Nations World Population Conference, Belgrade, Yugoslavia, Sept. 1965.

any case in 1961 as compared with 1956, one out of three families with only pre-school children had moved, a rate almost as high as that of young families with no children. The tendency to migrate dropped sharply among families with older children.

Growth of employment

44. In any study of labour mobility and economic or industrial growth, great care must be taken with the cause and effect relationship. Does mobility cause an increase in economic activity and employment or does the growth of the latter attract workers from other provinces? No definitive answer is possible. However if we assume a one-way causation, that is, that provincial or regional growth in employment attracts migrants, a very close correlation is evident in figure 4, taken conveniently from the Economic Council of Canada and thereby sparing us the need of making the necessary statistical calculations.

45. Figure 4 shows that of the seven provinces to the left of the Canada bar, that is, the seven with below average growth in employment, precisely these seven were the losing provinces during 1956 to 1961 on a net migration basis. Similarly of the three provinces with above-average growth in employment, these are the three with a net gain. However the high degree of correlation must be regarded as somewhat suspect due to the previously mentioned cause and effect relationship.

Level of unemployment

46. Logically, continued unemployment in one region should cause workers to leave for another region where unemployment is either less significant or possibly where overemployment prevails. Since migration is a serious decision for the typical worker, unemployment ratios over a considerable period of time should be used rather than at one particular time. Table 22 contains the regional unemployment ratios for the post-war period as compared with net migration during 1956 to 1961. The correlation is not as close as might have been expected. The push effect is evident in two of the three regions which lost workers and the pull effect can be observed in the high income, migrant gaining region of Ontario but not in British Columbia where a high unemployment ratio did not seem to deter migrants from other regions.

Table 21

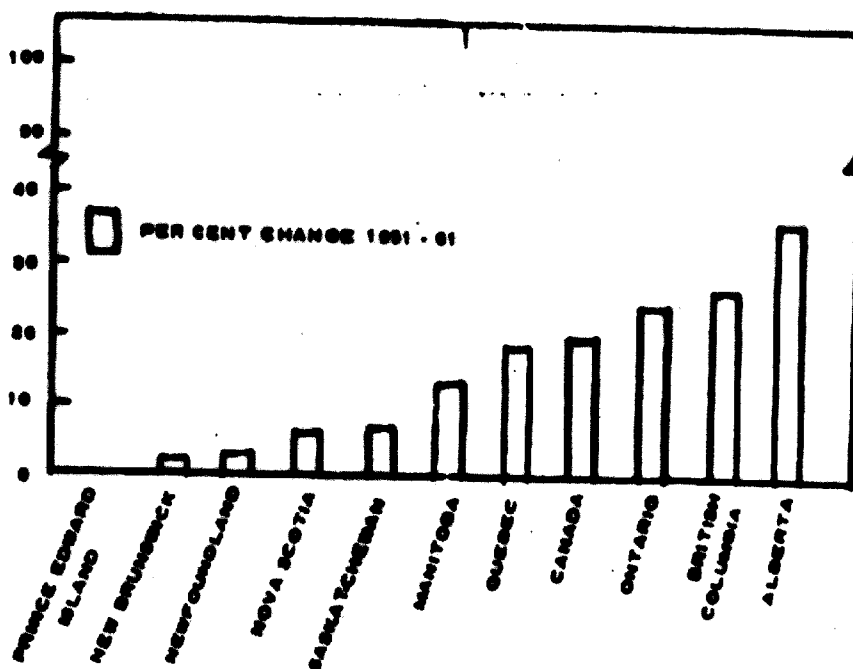
Labour mobility and population age distribution

<u>Province</u>	<u>% of population in age group 15-64 1961</u>	<u>Relative to national average</u>		<u>Migration 1956-61</u>		<u>Push effect evident</u>	<u>Pull effect evident</u>
		<u>below</u>	<u>above</u>	<u>in</u>	<u>out</u>		
Newfoundland	52	X			X	X	
Prince Edward Island	54	X			X	X	
Nova Scotia	57	X			X	X	
New Brunswick	54	X			X	X	
Quebec	59		X		X		
Ontario	60		X	X			X
Manitoba	58		X		X		X
Saskatchewan	57	X			X	X	
Alberta	58		X	X			X
British Columbia	59		X	X			X
Canada	58						X

Source: Economic Council of Canada (1965) Towards Sustained and Balanced Economic Growth, Second Annual Report, Queen's Printer, Ottawa, p.115, and tables 6 and 8.

Figure 4

Growth in employment during 1951 to 1961, by province
(based on data from the Dominion Bureau of Statistics in Economic Council of Canada (1965) Towards Sustained and Balanced Economic Growth)



Wages

47. It might be of interest to investigate briefly any relationships which may exist between wage levels and changes in wage levels and interprovincial movements of the labour force. The data in table 23 show first of all that labour mobility does not seem to have a marked influence on the level of wage rates. The three provinces which had the highest levels of average weekly wages and salaries in 1956 were in the same position in 1961, yet these three were the net gainers of migrants.

48. But salary levels do seem to be related directly to labour mobility. It will be recalled that in 1961 as compared with 1956, three provinces - Ontario, Alberta and British Columbia - took in more members of the labour force from other provinces than left, while the other seven provinces suffered a net migration loss. These three provinces had the highest wage and salaries levels in 1956 and 1961. Thus a pull effect on labour mobility of high wage levels is evident. So is a push effect for the seven losing provinces had lower wage levels on the average than the gaining provinces.

49. The rate of increase in wage levels seems to have little impact on interprovincial movements of the labour force. The highest rate of increase during 1956 to 1961 occurred in Quebec, a losing province, the next highest in Alberta, a gaining province, and the third highest in Manitoba, a province which like Quebec had a net migration loss (table 23).

Urban-rural population ratio

50. In most countries a high ratio of urban to total population is another indicator of an advanced stage of industrial growth. We would expect then that those Canadian regions which had a considerable proportion of their population living either on farms or in small towns in 1956 would lose labour force to more urbanized and industrialized provinces, in view of the long run decline in agriculture as a source of employment in this country. Table 24 indicates that this is indeed the case, with the losing regions - Atlantic, Quebec, and Prairies - having substantial rural farm and rural non-farm populations in 1956, the reverse of the situation in the two gaining regions - Ontario and British Columbia.

51. However table 25 shows that too much emphasis should not be placed on the urban-rural population ratio because regional figures tend to obscure

Table 22

Relationships between labour mobility and regional unemployment levels

	<u>Post-war unemployment ratio</u>	<u>Relative to national average below</u>	<u>above</u>	<u>Migration 1956-61 in</u>	<u>out</u>	<u>Push effect evident</u>	<u>Full effect evident</u>
Atlantic	7.6			X	X	X	
Quebec	5.6			X	X	X	
Ontario	3.2	X			X		X
Prairies	2.7	X			X		
British Columbia	5.1			X	X		
Canada	4.4						

Source: Economic Council of Canada (1965) Towards Sustained and Balanced Economic Growth, Second Annual Report, Queen's Printer, Ottawa, p.116, and table 8.

Table 23

Rate of increase in wage levels from 1956 to 1961, by province

	<u>1956 average weekly wages and salaries (in Can. \$)</u>	<u>Ranking in 1956</u>	<u>1961 average weekly wages and salaries</u>	<u>Ranking in 1961</u>	<u>Increase 1956-61 (in percentage)</u>
Newfoundland	58.86	5	71.41	7	21.3
Prince Edward Island	47.27	10	57.03	10	20.6
Nova Scotia	56.65	8	63.55	9	12.2
New Brunswick	54.48	9	63.98	8	17.4
Quebec	57.61	7	75.54	4	31.1
Ontario	64.96	2	81.14	2	24.9
Manitoba	57.96	6	73.45	6	26.7
Saskatchewan	62.56	4	74.19	5	18.6
Alberta	62.60	3	80.45	3	28.5
British Columbia	68.99	1	85.20	1	23.5

Source: Canada Year Book (annual).

Table 24
1956 urban-rural ratios, by region

	<u>Total</u>	<u>Urban</u>	<u>non-farm</u>	<u>Rural</u> <u>farm</u>
Alberta	1,763,692	869,106	620,944	273,642
	100	49.3	35.2	15.5
Quebec	4,628,378	3,240,838	647,153	740,387
	100	70.0	14.0	16.0
Ontario	5,404,933	4,102,919	669,861	632,153
	100	75.9	12.4	11.7
Prairies	2,853,821	1,468,410	495,396	890,015
	100	51.5	17.4	31.1
British Columbia	1,398,464	1,026,467	276,659	95,338
	100	73.4	19.8	6.8
Canada ^{a/}	16,080,791	10,714,855	2,734,349	2,631,587
	100	66.6	17.0	16.4

Source: Canada Year Book (annual).

a/ The Canada figures include the Yukon and the North West territories.

discrepancies in the relationship at provincial levels. In 1956 two thirds of the Canadian population lived in urban centres. Three provinces - Ontario, British Columbia and Quebec - had higher ratios, indicating, if urbanization is the guide, a high degree of industrialization. But in the ensuing five years, Quebec lost rather than gained migrants on a net basis, and Alberta, later a gaining province in terms of migrants, had a below average degree of urbanization in 1956. Thus, the presence of a substantial rural population in a region at the beginning of the period covered need not necessarily indicate that an exodus of the labour force is likely in the years immediately ahead.

Population density

52. The hypothesis could be put forward that regions of low population density would attract an inflow of workers from other provinces with a shortage in land or, conversely, high density areas would lose in population. Table 26 shows that this applies only to a limited extent in Canada. The high density Atlantic provinces conform with the hypothesis but two western provinces do not. Alberta and British Columbia, both of which enjoyed a net labour force inflow by 1961 had very low population densities in 1956, but Ontario with an above average population density still attracted workers. On a regional basis, no adequate foundation can be established for a relationship between population density and labour mobility.

Multiple correlation analysis

53. Although the data have definite limitations, correlation analysis was used to ascertain the push and pull effects on internal migration of differing personal income per capita levels in the provinces and of varying birth rates.

54. First, with respect to the push effect on migration of income per head, a correlation of .49 was found.^{9/} A somewhat lower correlation of .38 existed with regard to the pull effect.^{10/} Hence, we may conclude that the levels of personal incomes per capita in the various provinces do influence labour mobility, exerting rather more of an outward than an inward effect. This would seem logical. Workers residing in a less wealthy region have a decided incentive to leave for other regions generally known to be richer.

55. Second, we turn to the relationship of interprovincial migration on the one hand and the levels of birth rate in the provinces on the other. Very little push effect is evident, a correlation of .10 being achieved.^{11/}

^{9/} Independent variable is provincial personal per capita income (average 1956-1961 adjusted for farm inventory changes), correlated with emigration from the province to other provinces. Push effect: equation is $Y' = -.0000416 X + .11488$.

^{10/} Independent variable is provincial personal per capita income, correlated with immigration into the province from other provinces. Pull effect: equation is $Y' = .0000264 X + .01112$.

^{11/} Independent variable is provincial birth rates. Correlated with emigration from the province. Push effect: equation is $Y' = -.0010385M + .090560$.

Table 25
1956 urban-rural ratios, by province

	<u>Total</u>	<u>Urban</u>	<u>Rural</u>	
			<u>non-farm</u>	<u>farm</u>
Newfoundland	415,074	185,252	219,684	10,138
	100	44.6	52.9	2.5
Prince Edward Island	99,285	30,470	25,703	43,112
	100	30.7	25.9	43.4
Nova Scotia	694,717	399,094	200,242	95,381
	100	57.5	28.8	13.7
New Brunswick	554,616	254,290	175,315	125,011
	100	45.9	31.6	22.5
Quebec	4,628,378	3,240,838	647,153	740,387
	100	70.0	14.0	16.0
Ontario	5,404,933	4,102,919	669,861	632,153
	100	75.9	12.4	11.7
Manitoba	850,040	510,583	137,294	202,163
	100	60.1	16.2	23.7
Saskatchewan	880,665	322,003	198,011	360,651
	100	36.6	22.5	40.9
Alberta	1,123,116	635,824	160,091	327,201
	100	56.6	14.3	29.1
British Columbia	1,398,464	1,026,467	276,659	95,338
	100	73.4	19.8	6.8
Canada ^{a/}	16,080,791	10,714,855	2,734,349	2,631,587
	100	66.6	17.0	16.4

Source: Canada Year Book (annual).

a/ The Canada figures include Yukon and the Northwestern territories.

Table 26
1956 population density, by province and region

<u>Province</u>	<u>Population per mile²</u>	<u>Region</u>	<u>Population per mile²</u>
Newfoundland	2.9		
Prince Edward Island	45.5	Atlantic	9.1
Nova Scotia	34.1		
New Brunswick	19.9		
Quebec	8.8	Quebec	8.8
Ontario	15.7	Ontario	15.7
Manitoba	4.0		
Saskatchewan	4.0	Prairies	4.2
Alberta	4.5		
British Columbia	3.9	British Columbia	3.9
Canada	7.6		

Source: Canada Year Book (annual).

However the pull effect of regions with lower birth rates attracting workers from high birth rate regions is considerably greater, the correlation amounting to .45.^{12/} Hence it may be concluded that birth rates do influence labour mobility, more in the sense of lower rates attracting migrants than higher rates pushing out members of the labour force.

^{12/} Independent variable is provincial birth rates. Correlated with immigration into the province from other provinces. Full effect: equation is $Y' = +.003641M + .14593$.

IV. MOBILITY, LABOUR FORCE OCCUPATION GROUPS AND LABOUR MARKET DIVISIONS

56. In this section, a number of relationships between the labour force on the one hand and the labour force on the other are investigated. As many of the data are preliminary, based on sample surveys instead of census, too much reliance should not be placed on these figures.

Labour force occupations and mobility.

57. Table 27 shows the Canadian labour force broken down by occupation together with ratios of those workers who in 1961 indicated they had moved their place of residence within the same municipality, the same province or interprovincially since 1956. As might be expected the service and recreational group shows the greatest mobility, one out of two workers moving, and farmers the least mobility, less than one out of ten moving. Unfortunately similar information is not readily available on a provincial or regional basis.

58. More significant perhaps is table 28 with the type of move made by the mobile members of each occupational group in the labour force. Most workers move only a short distance, that is within the same municipality. Next come shifts in residence within the province while interprovincial moves account for only 8.5 per cent of moves by all occupations. The greatest interprovincial mobility is evident in the service and recreational group while least mobile are the craftsmen and labourers. Professional people evidently move considerable distances with ease thereby indicating that levels of educational attainment are an important factor in mobility particularly since neither craftsmen nor labourers are likely to have above average educational levels. However, members of the most mobile group, i.e. service and recreational, have in all probability only average formal education and hence too much weight should not be placed on the relationship of education and mobility.

59. This study has gone to some lengths to analyse labour mobility with the exclusion of persons migrating from abroad during the period under analysis. Foreign migrants do not necessarily move to a region for the same reason as migrants already resident in another region of the country and hence should properly be excluded from a study of interregional mobility. Table 29 shows the relative importance for each occupational group of interprovincial movers and migrants from abroad. It is interesting to note that foreign immigrants in 1961 formed a greater proportion of every occupation group than did interprovincial migrants.

Table 27

Labour force occupation groups and mobility during 1961

<u>Occupation</u>	<u>Total</u>	<u>Movers as a percentage of total</u>	<u>Migrants from abroad as a ratio of the total labour force</u>
Managerial	100.0	43.6	6.9
Professional	100.0	49.4	11.5
Sales	100.0	49.6	8.1
Clerical	100.0	46.1	9.1
Service and recreational	100.0	50.9	12.4
Transportation and communication	100.0	49.3	7.0
Farmers	100.0	12.5	5.0
Other primary occupations	100.0	37.2	7.7
Craftsmen	100.0	44.7	9.4
Labourers	100.0	42.3	11.6
Not stated	100.0	30.1	38.9
All occupations	100.0	42.4	9.2

Source: An unpublished D.B.S. sample survey based on the 1961 Census.

Table 28

Labour force occupation groups and mobility during 1961, by distance of move

	<u>Total movers</u>	<u>Distance</u>			<u>Not stated</u>
		<u>Short</u>	<u>Medium</u>	<u>Long</u>	
Managerial	100.0	56.5	33.3	9.9	0.3
Professional	100.0	48.7	38.5	12.4	0.4
Sales	100.0	57.6	33.0	9.0	0.4
Clerical	100.0	62.9	29.2	7.5	0.4
Service and recreational	100.0	53.5	26.4	19.6	0.5
Transportation and communication	100.0	63.7	29.8	6.0	0.5
Farmers	100.0	55.0	37.6	6.4	1.0
Other primary occupations	100.0	57.9	33.3	8.2	0.6
Craftsmen	100.0	63.6	30.5	5.5	0.5
Labourers	100.0	64.5	28.3	6.5	0.7
Not stated	100.0	61.8	29.8	7.6	0.8
All occupations	100.0	59.5	31.5	8.5	0.5

Source: An unpublished D.B.S. sample survey based on the 1961 Census.

Figure 5
Labour force occupation groups and mobility during 1961,
by distance of move

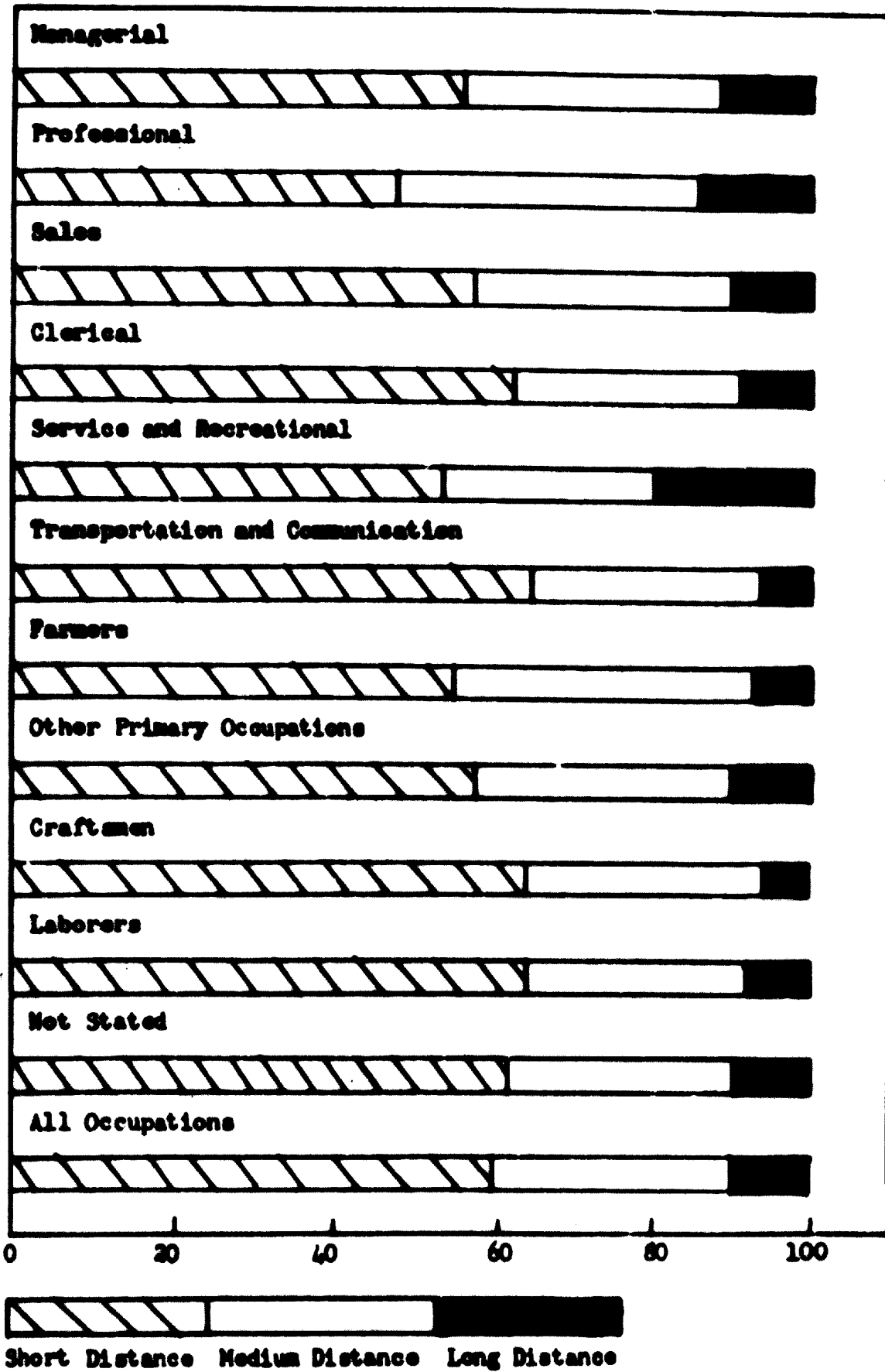


Table 29

Relative importance of interprovincial migrants and migrants from abroad in labour force occupations during 1961, expressed as a ratio of total employed persons

Occupation	Migrants	
	Interprovincial	From abroad
Managerial	4.3	6.9
Professional	6.4	11.5
Sales	4.4	8.1
Clerical	3.4	9.1
Service and recreational	10.0	12.4
Transportation and communication	3.0	7.0
Farmers	1.2	5.0
Other primary occupations	3.1	7.7
Craftsmen	2.6	9.4
Labourers	2.8	11.6
Not stated	2.3	38.9 ^{2/}
All occupations	3.6	9.2

Source: An unpublished D.B.S. sample survey based on the 1961 Census.

60. Table 30 shows for each province and each labour force occupational group the significance of migrants from other provinces in the 1961 labour force. In the highly populated regions of the geographical centre of the country, migrants form a very small percentage of the labour force even in the highly mobile service and recreational group. Further from the centre, both east and west, movers from the provinces form a more significant proportion of the labour force. There is evidently no relationship between the ratio of migrants from a different province to the labour force of the province in 1961 and the fact that a province has lost or gained in net migration during the period 1956 to 1961. In Alberta and British Columbia, for example, migrants formed a much more important component of almost every labour force

^{2/} The large percentage in this group probably results from foreign migrants' misinterpretation of the census questionnaire.

occupational group than was the case in Ontario, yet all three provinces were net gainers from migration. Of course, lengthening the period of analysis would increase the relative importance of the labour force of interprovincial moves. The rather negligible importance of interprovincial migration is confirmed if the figures are placed on a major industry division basis rather than a labour force occupation basis. In table 31, migrants from other provinces are calculated as a ratio of the 1961 labour force by the ten major industry divisions as defined by the Dominion Bureau of Statistics (D.B.S.). The mining category shows the greatest mobility as might be expected but rather surprisingly workers in finance, insurance and real estate also exhibited well above average mobility. The services category as defined here has about average mobility. Workers in the primary occupations like agriculture, forestry, fishing and trapping show little tendency to migrate. It is surprising that most of the workers in the manufacturing category are not interprovincial movers. Again, marked differences are evident among the provinces in the relative importance of migrants in the labour force, and the trends evident for the occupational groups apply in the case of the major industry divisions.

V. LABOUR MOBILITY AND INDUSTRIAL LOCATION

61. The first hypothesis to be investigated here is that the export industries of a region - the engines of economic growth - tend to attract workers from other regions while import industries will have less mobile labour forces. Much of the analysis is based upon unpublished D.B.S. information and there are fairly severe limitations in the data. In table 32, row 1 contains the ratios of interprovincial movers to the labour force. Row 2 consists of the location quotient by region for the particular industry. It will be recalled from para.13 that an L.Q. above one identifies an export industry and an L.Q. below one an import industry so far as the region is concerned. A dozen of the Canadian major industry groups, accounting annually for most of the national manufacturing output, are analysed. Three regions are taken into account (a) Ontario, the richest, most heavily populated and most highly industrialized, a net gainer in migration during 1956 to 1961, (b) British Columbia, also a wealthy province, less highly industrialized, and a net gainer in terms of interprovincial movers, (c) the Prairie region, a resource based economy, in an early stage of industrialization, and a net loser of migrants.

Table 30
Labour force occupations and movers during 1961
(ratio of movers from a different province to the labour force of the province in 1961)

Occupation	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Managerial	4.3	3.7	9.0	4.2	7.0	2.5	2.8	8.4	8.1	9.0	6.4
Professional	6.4	4.7	16.5	8.8	10.3	1.1	4.8	9.3	11.2	12.9	8.1
Sales	4.4	2.3	8.1	4.8	6.2	2.0	2.8	8.0	8.2	12.0	8.3
Clerical	3.4	2.2	6.8	2.8	4.4	2.0	2.6	4.7	5.8	9.8	6.3
Service and recreational	10.0	10.0	24.7	18.4	24.3	3.7	7.9	18.3	11.8	17.9	12.2
Transportation and communication	3.0	1.8	3.5	2.6	3.6	1.3	2.2	5.5	5.1	7.3	5.0
Farmers	1.2	0.7	2.0	1.2	1.0	0.2	0.7	1.5	1.2	2.2	4.6
Other primary occupations	3.1	0.5	1.6	1.5	1.2	1.2	5.3	7.2	10.9	8.7	3.6
Craftsmen	2.6	1.4	4.1	2.1	3.2	1.1	1.8	3.9	5.0	6.8	5.2
Labourers	2.6	0.8	3.0	2.0	2.4	1.0	2.5	3.4	4.7	7.7	5.9
Not stated	2.3	1.9	8.0	1.7	5.0	1.1	2.0	2.4	4.5	3.9	4.0
All occupations	3.6	2.2	5.6	4.6	5.5	1.7	2.8	1.4	4.4	7.6	6.4

Source: Census of Canada, 1961, Vol. IV, Catalogue No. 98-510 (unpublished at the time this study was prepared).

Table 31

Major industry divisions and movers during 1961
(ratio of movers from a different province to the labour force of the province in 1961)

Industry division	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Agriculture	1.1	1 ^{a/}	2.1	1.3	1.0	N	0.7	1.4	1.1	2.0	4.7
Forestry	2.0	N	7.4	1.6	1.6	0.6	4.3	3.4	4.5	7.5	3.0
Fishing and trapping	1.0	N	1.7	1.6	0.9	N	1.0	N	N	3.3	2.0
Mining (total)	6.7	3.8	N	1.1	1.8	3.6	5.4	11.2	19.6	11.7	8.2
Manufacturing (total)	2.3	1.1	4.2	2.4	3.7	1.4	1.9	4.1	6.0	7.8	5.0
Construction (total)	3.3	1.6	5.1	3.8	3.3	1.4	2.5	5.1	6.5	8.2	6.0
Transportation, communication and utilities	3.5	1.7	4.2	2.1	3.8	2.0	2.2	4.7	4.7	7.3	5.7
Trade	3.7	1.3	4.2	3.2	4.7	1.5	2.5	5.8	5.8	9.2	6.5
Finance	5.2	8.7	15.3	8.5	11.0	3.0	3.4	7.9	8.4	13.3	9.0
Services	4.0	2.1	6.0	3.9	4.6	1.7	2.9	5.9	5.4	8.9	7.1
Grand total	3.8	2.1	5.0	4.3	5.1	1.7	2.7	5.4	4.2	7.6	5.4

Source: Based on unpublished preliminary D.B.S. data from the 1961 Census.

a/ '1' means that the ratios in these cases were so small as to be negligible.

Table 32

Ratio of interprovincial shipments to the 1961 labour force, location quotients and localization coefficients, by industry group and province

Industry	Canada	Newfoundland and Labrador	Prince Edward Island	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Food and beverages	2.4 (1) (2) (3)	0.9	2.2 2.3	2.5	2.8	1.0 0.8	3.2	4.8 2.0	7.0	4.7 1.1
Textiles	1.6 (1) (2) (3)	3.0	0.4	2.3	7.3	0.7 1.8	8.6	4.3 0.2	17.1	6.6 0.2
Wood	2.8 (1) (2) (3)	0.4	5.7 1.6	1.7	2.0	0.8 0.6	2.6	6.5 0.9	5.7	4.0 5.8
Paper and allied industries	2.8 (1) (2) (3)	0.5	2.0	1.7	2.5	1.5 1.1	3.7	11.1 0.4	18.1	6.9 1.5
Printing, publishing and allied industries	2.9 (1) (2) (3)	2.1	16.7 0.8	2.0	4.3	1.4 0.8	5.7	6.1 1.5	7.8	4.5 0.8
Primary metals	2.8 (1) (2) (3)	0.14	9.9	7.9	1.6 0.7	1.3 1.3	5.6	16.2 0.8	12.4	5.3 1.0

Table 32 (continued)

Industry group	Canada	Newfoundland and Island	Prince Edward Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Metal fabricating (except machinery and transportation equipment)	2.3 (1) 0.10	2.2 (2)	5.9 0.6	2.1	7.3	1.5 0.8	4.2	8.9 1.1	7.7	5.2 0.7
Machinery (except electrical machinery)	2.0 (1) 0.26	0.2 (2)	6.9	8.8	2.3 0.5	1.5 1.6	5.9	0.5	10.4	4.5 0.5
Transportation equipment	1.7 (1) 0.09	1.3 (2)	18.8 1.3	4.2	2.1 0.8	0.8 1.1	3.1	1.1	8.0	3.2 0.5
Electrical products	2.7 (1) 0.20	20.0 (2)	0.2	2.7	2.7 0.9	2.1 1.4	8.3	15.0 0.3	19.5	10.1 0.2
Non-metallic mineral products	3.0 (1) 0.08	0.6 (2)	4.7	3.9	2.1 0.9	2.0 1.0	5.3	6.8 1.8	8.1	8.3 0.6
Chemicals	3.9 (1) 0.09	10.0 (2)	6.9 0.2	4.1	3.5 1.1	3.3 1.1	8.9	12.2 0.7	7.2	7.2 0.6

Source: Unpublished D.B.S. data based on a sample survey in the 1961 Census.

a/ Ratio interprovincial migrants to labour force.

b/ Location quotient.

c/ Localization coefficient.

62. Tables 33 to 35 show for these three regions, the 12 major industry groups divided as between export and import industries, and as to whether the labour force in that industry in 1961 had a higher than the natural average ratio of interprovincial migrants. A higher ratio is deemed to indicate a **high** degree of labour mobility. In Ontario (table 33), of the 12 major industries, seven were exporters, four importers and one neither an exporter nor an importer. Only one industry, textiles, showed above average mobility and was an importer. In British Columbia, three industries were exporters, eight importers and one neither an exporter nor an importer. But all 12 industry groups showed mobility above the natural average. In the Prairie region, five industries were exporters and seven importers but again all 12 industries had greater than average labour mobility. Thus there appears to be little relationship between the export-import status of industries and labour mobility. The hypothesis that export industries attract workers is therefore not proved.

63. A second hypothesis would be that industries which tend to disperse geographically, i.e. do not concentrate in any one region of the country, tend to attract interprovincial migrants or - **put another way** - will have above average proportions of migrants among their workers. The localization coefficients are found in row 3 of table 32. The coefficients in Canada tend on the whole to be lower than those of comparable industries in the United States of America and the United Kingdom meaning that Canadian industry tends to be relatively less concentrated and more evenly distributed across the country. From table 36 it would seem that the lower the localization coefficient, the higher the mobility of labour in the industry concerned. Of the four industry groups with the lowest coefficients - chemicals, transportation equipment, printing and publishing, and the non-metallic mineral products - three have the highest ratios of interprovincial migrants. The relationship is not without its exceptions: for example, the wood products industry tends to concentrate geographically in terms of industrial location and yet has a high mobility ratio. Still, there does seem a measure of support for the hypothesis that the tendency of an industry to locate widely across the nation will encourage labour mobility.



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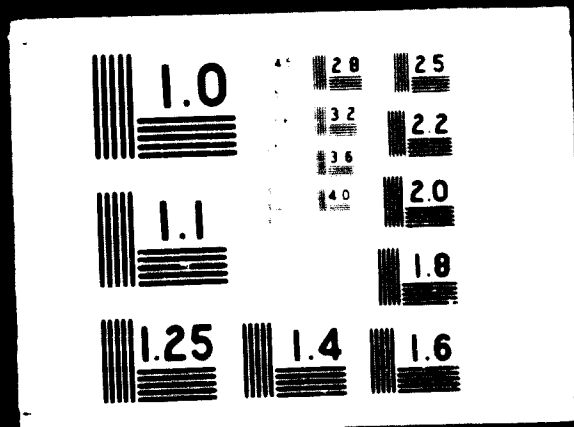
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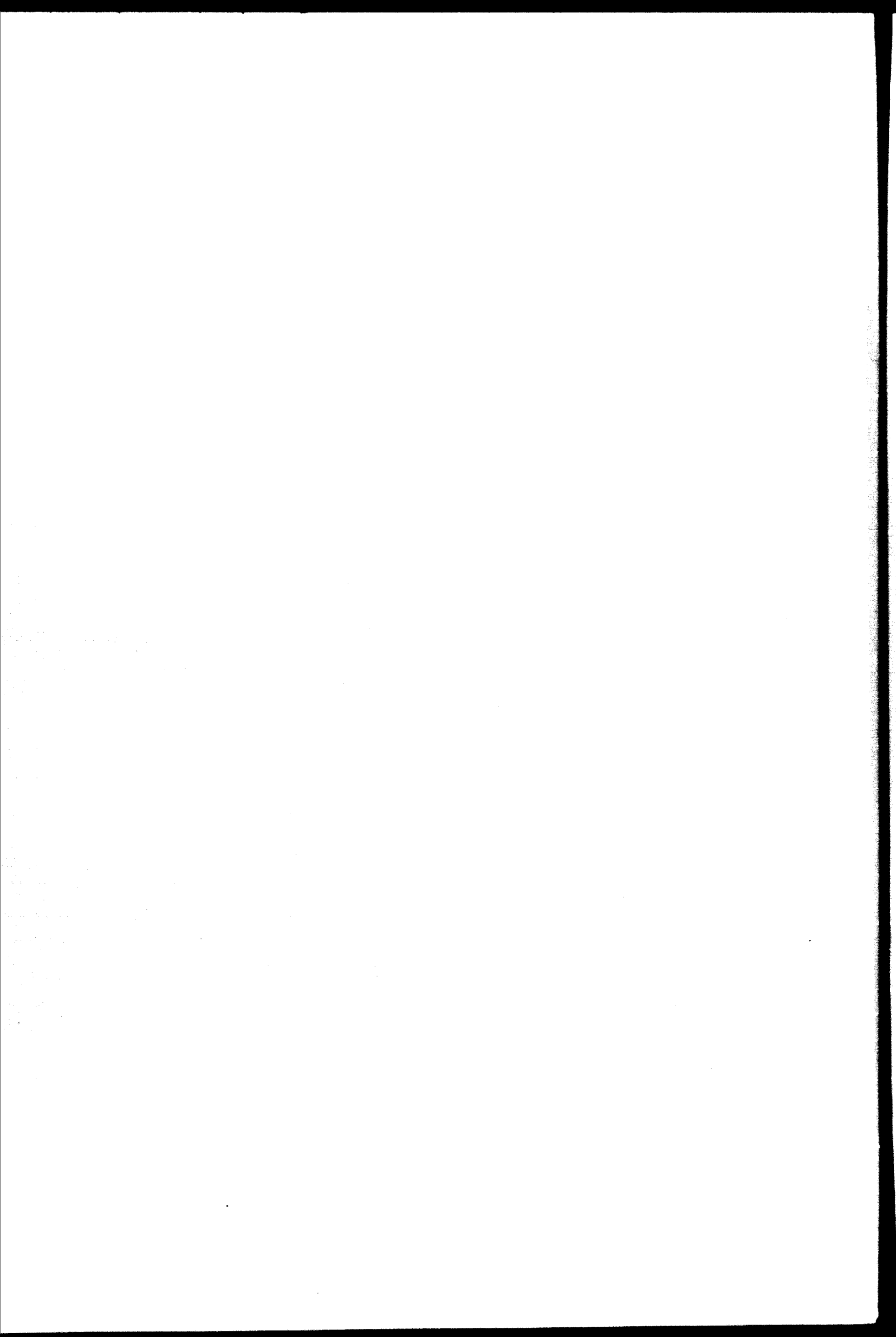


Table 33

Relationships between labour mobility and export or import status
of major industry groups, Ontario, 1961

	Defined by location quotient as		Compared to national ratio of interprovincial movers in labour force	
	<u>exporter</u>	<u>importer</u>	<u>above average</u>	<u>below average</u>
Food and beverages		X		X
Textiles		X	X	
Wood		X		neither
Paper		X		
Printing, publishing etc.	X			X
Primary metals	X			X
Metal fabricating	X			X
Machinery	X			X
Transportation equipment				..
Electrical products	X			X
Non-metallic mineral products		neither		X
Chemicals	X			X

Source: Unpublished D.B.S. data based on a sample survey in the 1961 Census.

Table 34

Relationships between labour mobility and export or import status
of major industry groups, British Columbia, 1961

	Defined by location quotient as		Compared to national ratio of interprovincial movers in labour force	
	<u>exporter</u>	<u>importer</u>	<u>above average</u>	<u>below average</u>
Food and beverages	X		X	
Textiles		X	X	
Wood	X		X	
Paper	X		X	
Printing, publishing etc.		X	X	
Primary metals		neither	X	
Metal fabricating		X	X	
Machinery		X	X	
Transportation equipment		X	X	
Electrical products		X	X	
Non-metallic mineral products		X	X	
Chemicals		X	X	

Source: Unpublished D.B.S. data based on a sample survey in the 1961 Census.

Table 35

Relationships between labour mobility and export or import status of major industry groups, Prairie region, 1961

	Defined by location quotient as		Compared to national ratio of interprovincial movers in labour force	
	<u>exporter</u>	<u>importer</u>	<u>above average</u>	<u>below average</u>
Food and beverages	X		X	
Textiles		X	X	
Wood		X	X	
Paper		X	X	
Printing, publishing etc.	X		X	
Primary metals		X	X	
Metal fabricating	X		X	
Machinery		X	X	
Transportation equipment	X		X	
Electrical products		X	X	
Non-metallic mineral products	X		X	
Chemicals		X	X	

Source: Unpublished D.B.S. data based on a sample survey in the 1961 Census.

Table 36

Relationships between labour mobility and industrial location during 1961

Industry group	Localization coefficients	Ranking in descending order	Ratio of inter-	Ranking in descending order
			provincial movers to labour force (in percentage)	
Wood	.40	1	2.8	4
Textiles	.28	2	1.6	10
Machinery	.26	3	2.0	8
Electrical products	.20	4	2.7	5
Primary metals	.14	5	2.0	8
Food and beverages	.14	5	2.4	6
Paper	.13	6	2.8	4
Metal fabricating	.10	7	2.3	7
Chemicals	.09	8	3.9	1
Transportation equipment	.09	8	1.7	9
Printing, publishing etc.	.08	9	2.9	3
Non-metallic mineral products	.08	9	3.0	2

Source: Table 32.

64. A third hypothesis relating labour mobility and industrial location is that the more labour intensive an industry is, the greater will be labour mobility in the industry. Labour intensive industries presumably attract interprovincial migrants to a greater extent than do capital intensive industries. At first glance table 27 might appear to substantiate this hypothesis: total manufacturing ranks about ninth by descending order of labour intensity and has much the same rank in terms of labour mobility. Actually the relationship is limited if individual industries are examined. Of the six most labour intensive industries, only two also show a high degree of labour mobility. Of the six less labour intensive industries, three show a well below average mobility among their workers. Hence the hypothesis is not proved.
65. Fourthly, is there any relationship evident between labour mobility and raw materials oriented industries? Since such industries are often located in more remote places at the source of raw materials rather than at the market centre, possibly the labour force is less mobile. In table 38 material oriented or resource based industries are defined as those with a high ratio of raw material power and fuel costs to total costs. We would assume that the higher this ratio is, the less mobile is the labour force. Table 38 shows a considerable degree of negative correlation between labour mobility and raw material oriented industries; in other words, any relationship becomes evident only when we compare resource oriented industries in descending order of the ratio of raw materials cost to total cost with the same industries ranked in ascending order according to degree of labour mobility. The industry with the greatest raw material cost is compared with the industry with the least labour mobility. On this basis, four out of the six most highly raw material oriented industries are among the six with the lowest mobility. Again, of the half dozen less highly raw material oriented industries, four are among the six more mobile industries. It would appear therefore that industries which are raw material or resource oriented do not tend to attract interprovincial migrants.
66. For the fifth hypothesis, the analysis changes somewhat. Taking the poorest region in Canada - the Atlantic provinces - and the wealthiest - Ontario - the question is asked whether differences in relative industrial efficiency have any influence on the mobility of labour. Calculating efficiency is always difficult and therefore this part of the study is even more tentative than other parts. Value added per worker is often taken as an indicator

Table 37

Relationships between labour mobility and labour intensity
of manufacturing operations during 1961

<u>Industry group</u>	<u>Ratio interprovincial movers to labour force (in percentage)</u>	<u>Ratio labour cost to total cost (in percentage)</u>	<u>Mobility in descending order</u>	<u>Labour intensity in descending order</u>
Food and beverages	2.4	14.0	chemicals	printing
Textiles	1.6	24.3	non-metallic	machinery
Wood	2.0	27.1	printing	electrical
Paper	2.8	21.4	wood or	metal fabricating
Printing, publishing etc.	2.9	37.6	paper	Wood
Primary metals	2.0	16.3	electrical	transportation equipment
Metal fabricating	2.3	28.3	food and beverages	non-metallic
Machinery	2.0	30.6	metal fabricating	textiles
Transportation equipment	1.7	26.6	machinery or	paper
Electrical products	2.7	29.3	primary metals	chemicals
Non-metallic mineral products	3.0	25.8	transportation eq.	primary metals
Chemicals	3.9	17.7	textiles	food and beverages
Total	2.3	21.6		

Source: The migrant ratio was calculated from table 32. Labour cost as a ratio of total cost was calculated from Dominion Bureau of Statistics (1961) Manufacturing Industries of Canada, Ottawa.

Table 38

Relationships between labour mobility and raw material oriented industries during 1961

<u>Industry group</u>	<u>Ratio interprovincial movers to labour force (in percentage)</u>	<u>Ratio raw materials cost to total cost (in percentage)</u>	<u>Materials orientation in descending order</u>	<u>Mobility in ascending order</u>
Food and beverages	2.4	65.6	food and beverages	textiles
Textiles	1.6	55.2	primary metals	transportation equipment
Wood	2.8	58.5	transportation eq.	primary metals or
Paper	2.8	51.9	wood	machinery
Printing	2.9	32.4	textiles	metal fabricating
Primary metals	2.0	59.9	paper	food and beverages
Metal fabricating	2.3	50.5	metal fabricating	electrical
Machinery	2.0	48.9	electrical	wood or
Transportation equipment	1.7	58.7	machinery	paper
Electrical products	2.7	49.5	chemicals	printing
Non-metallic mineral products	3.0	43.9	non-metallic	non-metallic
Chemicals	3.9	47.3	printing	chemicals
Total	2.3	56.3		

Source: The migrant ratio was calculated from table 32. Labour cost as a ratio of total cost was calculated from Dominion Bureau of Statistics (1961) Manufacturing Industries of Canada, Ottawa.

Table 32
Value added per worker in the Atlantic and Ontario regions during 1961, by major industry group ^{a/}

Industry group	Value added		Interprovincial movers		Atlantic value added to employment (Ontario value = 100)
	Ontario (in Can. \$)	Atlantic	Ontario	Atlantic	
Food and beverages	9,851	5,481	1.9	2.1	55.6
Textiles	7,190	4,617	2.3	3.1	64.2
Wood	5,281	4,010	2.8	2.4	75.9
Paper	9,951	11,297	2.7	1.2	113.5
Printing, publishing etc.	8,240	6,287	2.4	6.3	76.3
Primary metals	14,045	-	1.3	.7	-
Metal fabricating	8,142	6,095	1.7	4.4	71.9
Machinery	7,962	5,775	1.5	3.9	72.5
Transportation equipment	9,266	4,114	0.8	6.4	44.4
Electrical apparatus	7,997	-	2.1	7.9	-
Non-metallic mineral products	9,407	7,145	2.0	2.2	76.0
Chemical products	16,031	12,730	3.3	7.0	79.4
Total	9,181	6,528	1.9	2.8	71.1

Source: The migrant ratio was calculated from table 32. Labour cost was calculated from Dominion Bureau of Statistics (1961) Manufacturing Industries of Canada, Ottawa.

^{a/} No data are available for the primary metals and electrical apparatus industries in the Atlantic region.

of efficiency. If the dollar value of the variable in an industry in one region is above that of the same industry in another region, then the industry in the first region is regarded as being more efficient. As table 39 indicates, total manufacturing in the Atlantic region is about 71 per cent as efficient as in Ontario. Only in the paper industry are the four Atlantic provinces more efficient. It is interesting to note that that particular industry is one of the two industries in which the Atlantic labour force was less mobile than the Ontario counterpart. In the case of the top five Atlantic industries ranked in comparison with Ontario, in two cases, paper and wood, the Atlantic labour force was less mobile, in two cases more mobile and in one case mobility was much the same in both regions as can be seen in table 40. Taking the five industries in which the Atlantic provinces come off worst in terms of relative efficiency, in three industries, the workers were more mobile and in two industries labour mobility was hardly different from Ontario. No conclusion can be reached on these scanty data but it is striking that some evidence exists to the effect that more efficient industries may well not attract interprovincial migrants while less efficient industries do.

Table 40
Relationships between labour mobility and industrial efficiency,
Atlantic and Ontario regions, 1961

Industries ranked in descending order of efficiency	Labour mobility Atlantic as compared to Ontario		
	<u>less</u>	<u>similar</u>	<u>greater^{a/}</u>
Paper	X		
Chemicals			X
Printing			X
Non-metallic		X	
Wood	X		
Metal fabricating			X
Machinery			X
Total manufacturing		X	
Textiles		X	
Foods and beverages		X	
Transportation equipment			X

^{a/} Since the Atlantic labour force in 1961 in the case of most industry groups had a higher ratio of interprovincial migrants than was the case in Ontario, the column "greater" means twice as high a ratio or more Atlantic to Ontario.

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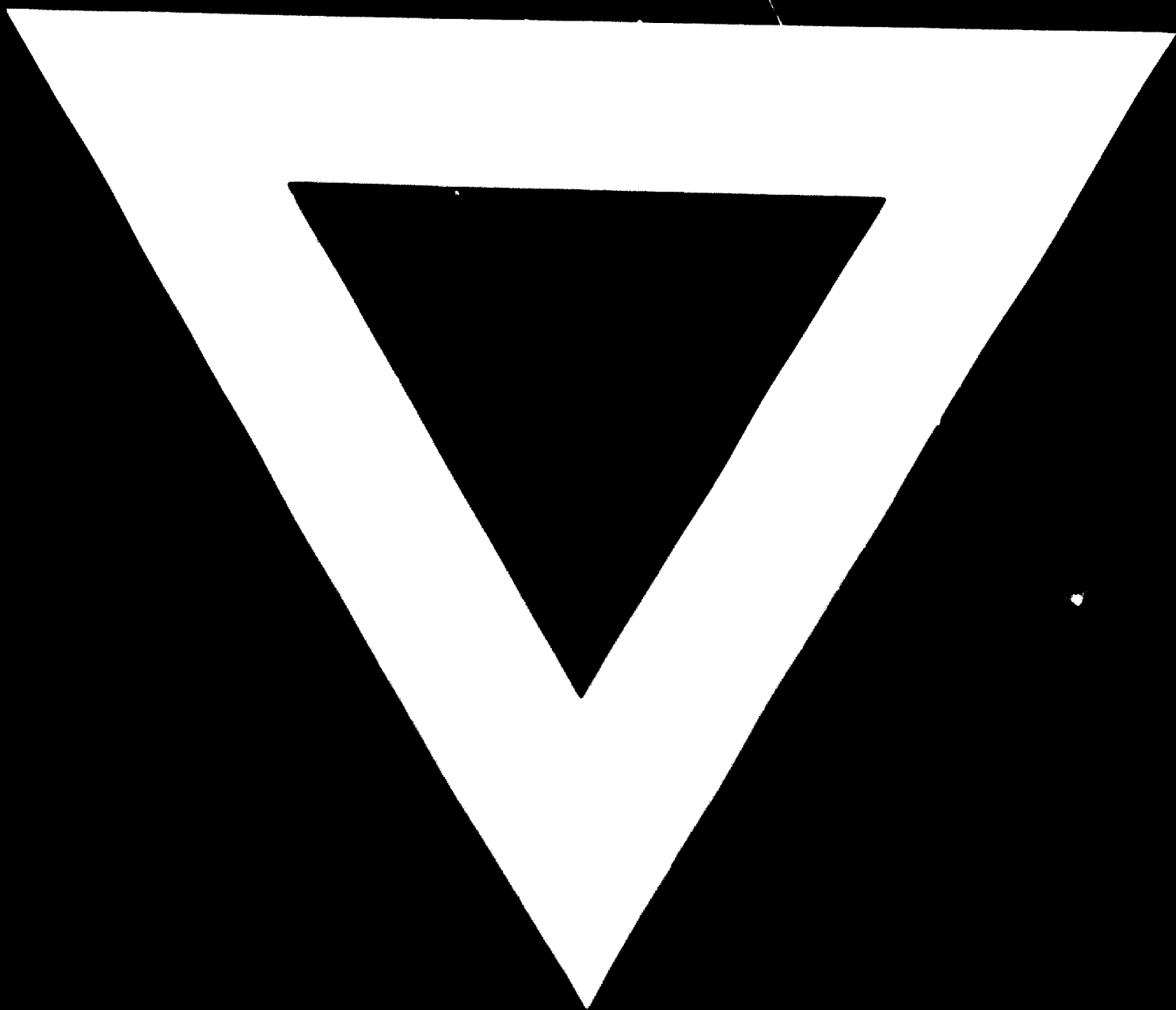
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