

### Method of Estimating

The estimates of population since the Census of 1931 were made by the following method: An upper limit to each year's increase in Canada as a whole was struck by summing the natural increase and the immigration including returning Canadians and deducting the known emigration, viz. that to the United Kingdom and the United States. The share of the different provinces in the natural increase and the immigration is known. The emigration is apportioned among the provinces according to the size of their population. As just mentioned this estimate is regarded as the upper limit to the year's increase and will now be referred to as "the maximum". Corrections are then made so as to effect a reconciliation of the rates of birth, death, marriage and school attendance in each province, and in Canada as a whole. For example according to "the maximum" in 1936, the index with 1931 rates as a base of the rates in each of the Maritime Provinces and British Columbia (compounded by taking the geometric mean) would be over 100. Since this is illogical a correction is added to "the maximum" of these provinces to bring the compounded index down to 100. On the other hand "the maximum" of Canada as a whole is corrected to leave the birth rate of Canada in 1936 no lower than that of Ontario in 1931. The logistic is also used in determining limits. It was particularly useful in the 1936 estimate of the Prairie Provinces. However, the 1936 figures for the Prairie Provinces shown in this bulletin are the preliminary census figures. The corrections mentioned are felt to be in the right direction and minimize the margin of error. In view of these corrections it is manifest that the increases from year to year shown for provinces cannot be expected to coincide with the natural increase.

It may be of interest to show how the estimates for the Prairie Provinces in 1936 computed and officially submitted but not published before the Census figures were known, compared with the census results.

Province	Estimated Population 1936 (000's)	Preliminary Census Results (000's)	Percentage of Error
Manitoba	726	711	2.07
Saskatchewan	966	931	3.62
Alberta	773	772	0.13
Prairie Provinces	2,465	2,414	2.07

It will be seen that even in the case of Saskatchewan the error was less than 4 p.c., and it may be recalled that in a footnote to last year's bulletin of estimates it was indicated that the estimate was probably high. It will be interesting to compare the results with those obtained by methods which are much in vogue such as (1) Geometric increase according to 1926-31 rates of increase; (2) Arithmetic increase according to 1926-31 increments; (3) aggregating natural increase and immigration.

Province	Estimates by Different Methods (000's omitted)			Percentage Error: of Estimates		
	Geometric	Arithmetic	Aggregate Natural Increase and Immigration <sup>1/</sup>	Geometric	Arithmetic	Aggregate Natural Increase and Immigration <sup>1/</sup>
Manitoba	767	761	770	7.30	6.57	7.66
Saskatchewan	1,035	1,023	1,027	10.05	8.99	9.35
Alberta	881	856	824	12.37	9.81	6.31
Prairie Provinces	2,683	2,640	2,621	10.03	8.56	7.90

In the light of this comparison it is contended that the estimates as officially submitted were very close indeed.

<sup>1/</sup> Approximate, since the totals for immigration and natural increase up to June 1, 1936 are not yet known.

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