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WORKING PAPER

A Note Concerning
The Demographic Sub-Model
Within a Regionalized CANDIDE Model

by

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EXPANSION ÉCONOMIQUE RÉGIONALE CANADA**

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The CANDIDE¹ model is an annual large-scale econometric model of the Canadian economy suitable for projection purposes and impact analysis of changes in instrument variables and a number of important government policy parameters. The regionalization of this national model has been the preoccupation of the General Models Section of the Economic Analysis Branch. The regionalization of the model will involve the disaggregation of some of its constituent blocks, the replacement of some others and the construction of totally new sub-models in some sectors. At this time, the areas of labour supply, employment, industry output, wages and income have already received some attention and the regionalization is proceeding on schedule. This note reports the completion of one particular sub-model - the demographic block.

The demographic sub-model, will be an integral part of a regionalized CANDIDE model both deriving a number of its inputs from other blocks and feeding its outputs into other blocks, in particular a regionalized labour supply block. However, the sub-model can be considered apart from the CANDIDE model as a forecasting instrument which can be used extensively for disaggregated medium-term population projections. This note provides potential users with a non-technical outline of its workings, a specific description of its output and its required inputs for projection and simulation purposes and the results of some simulations.

1 Canadian Disaggregated Inter-Departmental Econometric

The Present CANDIDE Model

The present national version of CANDIDE uses an exogenous set of population projections to 1980 and distinguishes 18 age-sex breakdowns. It was selected from 20 projections made by the Statistics Canada Census Division. (It assumes low fertility and net immigration of 100,000 persons a year). A regional disaggregation of these projections would have involved an implicit set of assumptions concerning interprovincial migration. While it is recognized that the measurement of regional job gaps should be framed not only in terms of unemployment and participation rates but also in terms of migration flows, there is a widespread evidence that the medium term evolution of the labour market will be characterized by a change in the mix of the labour force population in favour of those age groups which show high participation rates. Consequently, both migration flows and the age-sex structure of the population have been specifically taken into consideration in the regionalization of the model.

The Development of the Demographic Sub-Model

Standard demographic studies usually yield various sets of projections made on a wide range of assumptions concerning fertility and migration. In the past, the model builder had simply picked one of them and considered it as exogenous even though migration could be made endogenous to his economic system. Once a procedure has been designed to filter the migration flows into the appropriate age-sex

group, the projection algorithm can be expressed as a simple but large recursive system of equations. To develop the demographic sub-model we have modified the projection algorithm devised by Leroy Stone (Statistics Canada) for the Institute for Quantitative Analysis to fit our needs² and used the software associated with the development and utilization of the CANDIDE model. The demographic sub-model is divided into six blocks, one for each of the five major regions and a block which computes a number of useful aggregations. In all, there are 173 equations, an equal number of endogenous variables and 11 exogenous variables.

The Working of the Demographic Model

The model utilizes the standard cohort method for its projections. Essentially, the population of each five-years-of-age group goes through an aging process in which the number of deaths is subtracted and the net migrants are added or subtracted. The number of births is also computed using a fertility ratio for the base fertile females and half of the ratio for the migrant fertile females. The migrants are distributed in the appropriate age-sex group through a fixed array of weights based on the age-sex structure of inter-provincial migrants in the period 1966 to 1969. The model gives five-year projections for each year and proceeds iteratively on the calculated values. In other words, the population of 1969 gives the population of 1974 which in turn gives the

2 A technical account of the algorithm is given in "Population Projection for CANDIDE" June 26, 1972 by Ghislain Fortin.

population of 1979, and so on; the population of 1970 gives 1975, which in turn gives 1980 etc. In principle, there is no upward limit to the length of the projections, but the forecasting error could be assumed to grow exponentially with each five year period.

Inputs to the Model

At present, a set of projections can be computed after specifying two time series per region, namely a specific fertility ratio and a net total migration³ for the forecast period. Ultimately, migration will become endogenous to the regionalized CANDIDE, and only the fertility rate will have to be forecasted and assumed exogenous to the model.

Output of the Model

For each of the five regions and for each of the years requested, the male and female population of each five-year-age group will be computed. Twenty-eight basic population groups will be calculated with the population 65 and over aggregated into one group per sex. Other aggregations can be made on the basis of the twenty-eight basic population groups. The model will compute in all regions the primary labour force population (males 25 to 54) and the secondary (or residual) labour force population together with total population. Similar aggregates are computed at the national level.

3 The net migration series is the one given by Table 1.3 of the Major Economic Indicators.

Illustration of the Demographic Model

In order to illustrate the main features of the model we have run three sets of regional population estimates to 1980 based on a single set of fertility rates and three different net migration hypotheses. The hypotheses are for illustrative purposes only as the next stage of development of the demographic sub-model involves, among other things, the endogenization of regional net migration. The net migration hypotheses are: 1) no net immigration to Canada and no inter-regional migration - an unrealistic hypothesis, 2) net immigration - Canada of 77 thousand per year which together with inter-regional migration results in net increases in Quebec, Ontario and British Columbia and decreases in the Atlantic and Prairie regions - a more realistic hypothesis, 3) net immigration to Canada of 127 thousand per year which together with inter-regional migration results in net increases in the Atlantic Region and Quebec (a rather high mobility assumption). The three net migration hypotheses and the present CANDIDE assumption are given below.

TABLE I

Net Migration, Each Year Between 1970 and 1980
('000 of Persons)

| | <u>Hypothesis 1</u> | <u>Hypothesis 2</u> | <u>Hypothesis 3</u> | <u>CANDIDE</u> |
|---------------------|---------------------|---------------------|---------------------|----------------|
| ATLANTIC | 0 | -20 | -8 | - |
| QUEBEC | 0 | 12 | -20 | - |
| ONTARIO | 0 | 60 | 100 | - |
| PRAIRIES | 0 | -15 | 5 | - |
| BRITISH COLUMBIA | 0 | 40 | 50 | - |
| CANADA | 0 | 77 | 127 | 100 |

Even though the exercise should not be considered as a true set of population projections, but rather as a test for the dynamic properties of the model, the system turned out to be quite sensitive in general, and the results were exceedingly accurate when compared with other sets of projections. Selected portions of the population estimates are presented in Tables II and III below while the more detailed regional population estimates to 1980 are presented in Appendix I.

TABLE II

Canadian Population Under Various Hypotheses
('000 of Persons)

| <u>Year</u> | <u>Hypothesis 1</u> | <u>Hypothesis 2</u> | <u>Hypothesis 3</u> | <u>CANDIDE</u> |
|-------------|---------------------|---------------------|---------------------|----------------|
| 1970 | 21,385 | 21,385 | 21,385 | 21,375 |
| 1972 | 21,877 | 22,031 | 21,131 | 22,030 |
| 1974 | 22,357 | 22,665 | 22,865 | 22,720 |
| 1976 | 22,875 | 23,349 | 23,656 | 23,443 |
| 1978 | 23,417 | 24,059 | 24,477 | 24,205 |
| 1980 | 23,978 | 24,790 | 25,316 | 25,001 |

The CANDIDE projections, assuming a 100,000 net immigration a year, as expected fell between our hypotheses 2 and 3. Since our national total is not computed directly, but as the sum of the five regions, this is a measuring result. Even more important, however, is the sensitivity in the age mix of the projected population. The trend toward a declining portion of the population in the primary labour force population stops and even reverses at the end of the period under the expected influence of natural increase. Further the model reacted very well to the change in the migration pattern, as shown by the comparison of hypotheses 1 and 3 on Table III, and the age mix structure was altered in the expected direction in all cases.

TABLE III

Percentage of the Labour Force Population
in the Primary Group (Male 25-54) (1)

| <u>YEAR</u> | <u>ATLANTIC</u> | <u>QUEBEC</u> | <u>ONTARIO</u> | <u>PRAIRIES</u> | <u>B.C.</u> | <u>CANADA</u> |
|-------------|-----------------|---------------|----------------|-----------------|-------------|---------------|
| 1961 | 26.08 | 27.87 | 28.70 | 27.82 | 28.58 | 28.04 |
| 1965 | 24.54 | 26.72 | 27.53 | 26.72 | 27.16 | 26.84 |
| 1970 | 23.02 | 25.83 | 26.20 | 24.87 | 26.33 | 25.60 |
| 1975 Hyp.1 | 23.21 | 25.84 | 26.06 | 24.26 | 26.10 | 25.45 |
| Hyp.3 | 22.98 | 25.67 | 26.46 | 24.32 | 27.07 | 25.66 |
| 1980 Hyp.1 | 24.50 | 26.29 | 25.81 | 24.69 | 26.03 | 25.66 |
| Hyp.3 | 24.06 | 25.96 | 26.61 | 24.81 | 27.86 | 26.11 |

(1) The percentage of LFP in the secondary group is obtained by subtracting the above figures from 100.

The model should prove to be quite accurate in forecasting the number of jobs to be created in each region under various migration assumptions for medium term periods. An example of the type of calculation and results the present demographic sub-model makes possible is given below. The figures are based on the assumption that the unemployment rate is the same under the three migration hypotheses and that the participation rates in 1980 are the same as in 1970.

TABLE IV

Difference in the Number of Jobs to be Created in 1980
Between Hypotheses 2 and 3 and Hypothesis 1
('000 of Persons)

| | <u>Hypothesis 2</u> | | | <u>Hypothesis 3</u> | | |
|----------|-------------------------|---------------------------|--------------|-------------------------|---------------------------|--------------|
| | <u>Primary Jobs</u> | <u>Secondary Jobs</u> | <u>Total</u> | <u>Primary Jobs</u> | <u>Secondary Jobs</u> | <u>Total</u> |
| ATLANTIC | -50 | -35 | -85 | -20 | -14 | -34 |
| QUEBEC | 33 | 23 | 56 | -54 | -39 | -93 |
| ONTARIO | 149 | 136 | 285 | 247 | 226 | 473 |
| PRAIRIES | -37 | -33 | -70 | 12 | 11 | 23 |
| B.C. | 107 | 84 | 191 | 134 | 105 | 239 |
| CANADA | 202 | 175 | 377 | 319 | 289 | 608 |

In most instances the difference in the number of jobs to be created is quite large and the model appears to respond surprisingly well to the different hypotheses.

Summary

The demographic sub-model when considered apart from CANDIDE can be used as a forecasting instrument for disaggregated medium-term population projections. The above results, which were tentatively framed up in terms of employment, are based on four sets of major assumptions concerning fertility, migration, participation rates and unemployment rates. Within the next few months the last three major assumptions will be made endogenous to the system and the demographic sub-model will form an integral part of a regional peripheral model connected to the CANDIDE model, capable of projecting regional labour demand and labour supply and unemployment rates and simulating the impact of a number of different government policies.

APPENDIX I

POPULATION PROJECTION TO 1980

** ATLANTIC **

| YEAR | PRIMARY LABOUR FORCE POPULATION | | | SECONDARY LABOUR FORCE POPULATION | | | TOTAL POPULATION | | |
|------|------------------------------------|-------|-------|--------------------------------------|-------|-------|------------------|-------|-------|
| | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 |
| 1961 | 312. | 312. | 312. | 885. | 885. | 885. | 1906. | 1906. | 1906. |
| 1962 | 315. | 315. | 315. | 903. | 903. | 903. | 1932. | 1932. | 1932. |
| 1963 | 314. | 314. | 314. | 919. | 919. | 919. | 1951. | 1951. | 1951. |
| 1964 | 311. | 311. | 311. | 934. | 934. | 934. | 1962. | 1962. | 1962. |
| 1965 | 309. | 309. | 309. | 949. | 949. | 949. | 1969. | 1969. | 1969. |
| 1966 | 305. | 305. | 305. | 964. | 964. | 964. | 1973. | 1973. | 1973. |
| 1967 | 306. | 306. | 306. | 981. | 981. | 981. | 1983. | 1983. | 1983. |
| 1968 | 309. | 309. | 309. | 1000. | 1000. | 1000. | 1997. | 1997. | 1997. |
| 1969 | 311. | 311. | 311. | 1018. | 1018. | 1018. | 2009. | 2009. | 2009. |
| 1970 | 310. | 310. | 310. | 1036. | 1036. | 1036. | 2016. | 2016. | 2016. |
| 1971 | 315. | 310. | 313. | 1063. | 1054. | 1059. | 2042. | 2022. | 2034. |
| 1972 | 321. | 312. | 317. | 1088. | 1069. | 1080. | 2068. | 2028. | 2052. |
| 1973 | 329. | 315. | 324. | 1111. | 1083. | 1100. | 2092. | 2032. | 2068. |
| 1974 | 340. | 320. | 332. | 1135. | 1097. | 1120. | 2116. | 2036. | 2084. |
| 1975 | 350. | 325. | 340. | 1157. | 1110. | 1138. | 2139. | 2039. | 2099. |
| 1976 | 360. | 329. | 348. | 1180. | 1124. | 1158. | 2166. | 2043. | 2117. |
| 1977 | 372. | 335. | 357. | 1200. | 1134. | 1174. | 2193. | 2047. | 2135. |
| 1978 | 383. | 340. | 366. | 1219. | 1143. | 1189. | 2217. | 2050. | 2150. |
| 1979 | 396. | 347. | 376. | 1239. | 1152. | 1204. | 2242. | 2053. | 2166. |
| 1980 | 408. | 353. | 386. | 1256. | 1158. | 1217. | 2265. | 2055. | 2181. |

POPULATION PROJECTION TO 1980

** QUEBEC **

| YEAR | PRIMARY LABOUR FORCE POPULATION | | | SECONDARY LABOUR FORCE POPULATION | | | TOTAL POPULATION | | |
|------|------------------------------------|-------|-------|--------------------------------------|-------|-------|------------------|-------|-------|
| | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 |
| 1961 | 952. | 952. | 952. | 2463. | 2463. | 2463. | 5290. | 5290. | 5290. |
| 1962 | 966. | 966. | 966. | 2535. | 2535. | 2535. | 5398. | 5398. | 5398. |
| 1963 | 979. | 979. | 979. | 2598. | 2598. | 2598. | 5502. | 5502. | 5502. |
| 1964 | 992. | 992. | 992. | 2673. | 2673. | 2673. | 5599. | 5599. | 5599. |
| 1965 | 1003. | 1003. | 1003. | 2750. | 2750. | 2750. | 5692. | 5692. | 5692. |
| 1966 | 1017. | 1017. | 1017. | 2832. | 2832. | 2832. | 5782. | 5782. | 5782. |
| 1967 | 1035. | 1035. | 1035. | 2911. | 2911. | 2911. | 5862. | 5862. | 5862. |
| 1968 | 1050. | 1050. | 1050. | 2980. | 2980. | 2980. | 5918. | 5918. | 5918. |
| 1969 | 1067. | 1067. | 1067. | 3049. | 3049. | 3049. | 5972. | 5972. | 5972. |
| 1970 | 1083. | 1083. | 1083. | 3108. | 3108. | 3108. | 6010. | 6010. | 6010. |
| 1971 | 1103. | 1106. | 1099. | 3178. | 3183. | 3169. | 6083. | 6095. | 6063. |
| 1972 | 1130. | 1135. | 1120. | 3249. | 3260. | 3232. | 6158. | 6181. | 6118. |
| 1973 | 1155. | 1164. | 1140. | 3319. | 3335. | 3293. | 6225. | 6261. | 6165. |
| 1974 | 1180. | 1192. | 1159. | 3390. | 3412. | 3354. | 6293. | 6341. | 6213. |
| 1975 | 1205. | 1221. | 1179. | 3457. | 3485. | 3412. | 6354. | 6415. | 6252. |
| 1976 | 1226. | 1245. | 1194. | 3529. | 3562. | 3474. | 6440. | 6514. | 6316. |
| 1977 | 1256. | 1278. | 1218. | 3587. | 3626. | 3522. | 6528. | 6616. | 6383. |
| 1978 | 1284. | 1310. | 1240. | 3644. | 3689. | 3569. | 6615. | 6715. | 6448. |
| 1979 | 1310. | 1339. | 1260. | 3699. | 3750. | 3614. | 6703. | 6816. | 6514. |
| 1980 | 1336. | 1370. | 1280. | 3746. | 3804. | 3650. | 6786. | 6913. | 6574. |

POPULATION PROJECTION TO 1980

** ONTARIO **

| YEAR | PRIMARY LABOUR FORCE POPULATION | | | SECONDARY LABOUR FORCE POPULATION | | | TOTAL POPULATION | | |
|------|---------------------------------|-------|-------|-----------------------------------|-------|-------|------------------|-------|-------|
| | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 |
| 1961 | 1213. | 1213. | 1213. | 3013. | 3013. | 3013. | 6270. | 6270. | 6270. |
| 1962 | 1228. | 1228. | 1228. | 3079. | 3079. | 3079. | 6388. | 6388. | 6388. |
| 1963 | 1237. | 1237. | 1237. | 3151. | 3151. | 3151. | 6511. | 6511. | 6511. |
| 1964 | 1254. | 1254. | 1254. | 3241. | 3241. | 3241. | 6650. | 6650. | 6650. |
| 1965 | 1270. | 1270. | 1270. | 3342. | 3342. | 3342. | 6795. | 6795. | 6795. |
| 1966 | 1291. | 1291. | 1291. | 3460. | 3460. | 3460. | 6961. | 6961. | 6961. |
| 1967 | 1319. | 1319. | 1319. | 3591. | 3591. | 3591. | 7144. | 7144. | 7144. |
| 1968 | 1341. | 1341. | 1341. | 3709. | 3709. | 3709. | 7302. | 7302. | 7302. |
| 1969 | 1367. | 1367. | 1367. | 3826. | 3826. | 3826. | 7451. | 7451. | 7451. |
| 1970 | 1405. | 1405. | 1405. | 3956. | 3956. | 3956. | 7644. | 7644. | 7644. |
| 1971 | 1424. | 1437. | 1446. | 4034. | 4062. | 4081. | 7729. | 7789. | 7829. |
| 1972 | 1451. | 1477. | 1495. | 4113. | 4169. | 4207. | 7810. | 7930. | 8010. |
| 1973 | 1477. | 1518. | 1545. | 4193. | 4278. | 4335. | 7887. | 8067. | 8187. |
| 1974 | 1506. | 1562. | 1599. | 4270. | 4385. | 4461. | 7977. | 8217. | 8377. |
| 1975 | 1534. | 1605. | 1652. | 4350. | 4494. | 4591. | 8075. | 8374. | 8574. |
| 1976 | 1531. | 1617. | 1675. | 4443. | 4617. | 4734. | 8164. | 8534. | 8780. |
| 1977 | 1560. | 1663. | 1731. | 4516. | 4721. | 4858. | 8256. | 8691. | 8982. |
| 1978 | 1587. | 1706. | 1785. | 4590. | 4827. | 4985. | 8344. | 8846. | 9180. |
| 1979 | 1614. | 1750. | 1840. | 4659. | 4930. | 5110. | 8441. | 9009. | 9388. |
| 1980 | 1643. | 1795. | 1896. | 4720. | 5026. | 5229. | 8545. | 9179. | 9602. |

POPULATION PROJECTION TO 1980

** PRAIRIES **

| YEAR | PRIMARY LABOUR FORCE POPULATION | | | SECONDARY LABOUR FORCE POPULATION | | | TOTAL POPULATION | | |
|------|------------------------------------|-------|-------|--------------------------------------|-------|-------|------------------|-------|-------|
| | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 |
| 1961 | 582. | 582. | 582. | 1509. | 1509. | 1509. | 3185. | 3185. | 3185. |
| 1962 | 587. | 587. | 587. | 1537. | 1537. | 1537. | 3241. | 3241. | 3241. |
| 1963 | 589. | 589. | 589. | 1566. | 1566. | 1566. | 3292. | 3292. | 3292. |
| 1964 | 592. | 592. | 592. | 1596. | 1596. | 1596. | 3331. | 3331. | 3331. |
| 1965 | 593. | 593. | 593. | 1626. | 1626. | 1626. | 3361. | 3361. | 3361. |
| 1966 | 592. | 592. | 592. | 1651. | 1651. | 1651. | 3373. | 3373. | 3373. |
| 1967 | 591. | 591. | 591. | 1689. | 1689. | 1689. | 3401. | 3401. | 3401. |
| 1968 | 596. | 596. | 596. | 1733. | 1733. | 1733. | 3448. | 3448. | 3448. |
| 1969 | 600. | 600. | 600. | 1778. | 1778. | 1778. | 3493. | 3493. | 3493. |
| 1970 | 601. | 601. | 601. | 1815. | 1815. | 1815. | 3520. | 3520. | 3520. |
| 1971 | 606. | 603. | 607. | 1861. | 1854. | 1863. | 3561. | 3546. | 3566. |
| 1972 | 615. | 608. | 618. | 1904. | 1890. | 1908. | 3603. | 3573. | 3613. |
| 1973 | 625. | 615. | 629. | 1946. | 1925. | 1953. | 3645. | 3600. | 3660. |
| 1974 | 638. | 623. | 643. | 1988. | 1960. | 1997. | 3687. | 3627. | 3707. |
| 1975 | 650. | 631. | 656. | 2028. | 1993. | 2040. | 3725. | 3650. | 3750. |
| 1976 | 659. | 636. | 667. | 2070. | 2027. | 2084. | 3767. | 3674. | 3797. |
| 1977 | 674. | 647. | 683. | 2107. | 2057. | 2124. | 3810. | 3702. | 3847. |
| 1978 | 689. | 658. | 699. | 2143. | 2085. | 2162. | 3853. | 3728. | 3895. |
| 1979 | 706. | 671. | 718. | 2177. | 2110. | 2199. | 3897. | 3755. | 3944. |
| 1980 | 723. | 684. | 736. | 2204. | 2130. | 2229. | 3939. | 3780. | 3991. |

POPULATION PROJECTION TO 1980

** BRITISH COLUMBIA **

| YEAR | PRIMARY LABOUR FORCE POPULATION | | | SECONDARY LABOUR FORCE POPULATION | | | TOTAL POPULATION | | |
|------|---------------------------------|-------|-------|-----------------------------------|-------|-------|------------------|-------|-------|
| | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 |
| 1961 | 319. | 319. | 319. | 797. | 797. | 797. | 1637. | 1637. | 1637. |
| 1962 | 320. | 320. | 320. | 819. | 819. | 819. | 1667. | 1667. | 1667. |
| 1963 | 324. | 324. | 324. | 842. | 842. | 842. | 1703. | 1703. | 1703. |
| 1964 | 331. | 331. | 331. | 870. | 870. | 870. | 1746. | 1746. | 1746. |
| 1965 | 337. | 337. | 337. | 904. | 904. | 904. | 1798. | 1798. | 1798. |
| 1966 | 350. | 350. | 350. | 951. | 951. | 951. | 1876. | 1876. | 1876. |
| 1967 | 363. | 363. | 363. | 997. | 997. | 997. | 1949. | 1949. | 1949. |
| 1968 | 374. | 374. | 374. | 1038. | 1038. | 1038. | 2011. | 2011. | 2011. |
| 1969 | 386. | 386. | 386. | 1080. | 1080. | 1080. | 2074. | 2074. | 2074. |
| 1970 | 401. | 401. | 401. | 1123. | 1123. | 1123. | 2147. | 2147. | 2147. |
| 1971 | 406. | 416. | 418. | 1141. | 1159. | 1163. | 2166. | 2206. | 2216. |
| 1972 | 413. | 432. | 437. | 1163. | 1199. | 1208. | 2186. | 2266. | 2286. |
| 1973 | 419. | 449. | 456. | 1185. | 1239. | 1253. | 2206. | 2326. | 2356. |
| 1974 | 426. | 467. | 477. | 1206. | 1278. | 1297. | 2229. | 2389. | 2429. |
| 1975 | 434. | 485. | 498. | 1227. | 1319. | 1342. | 2255. | 2455. | 2505. |
| 1976 | 435. | 498. | 514. | 1249. | 1360. | 1387. | 2281. | 2526. | 2587. |
| 1977 | 443. | 517. | 536. | 1270. | 1400. | 1433. | 2304. | 2593. | 2665. |
| 1978 | 450. | 536. | 558. | 1290. | 1440. | 1478. | 2327. | 2660. | 2743. |
| 1979 | 457. | 555. | 580. | 1307. | 1478. | 1520. | 2351. | 2727. | 2821. |
| 1980 | 465. | 575. | 603. | 1320. | 1513. | 1561. | 2379. | 2798. | 2903. |

POPULATION PROJECTION TO 1980

** CANADA **

| YEAR | PRIMARY LABOUR FORCE POPULATION | | | SECONDARY LABOUR FORCE POPULATION | | | TOTAL POPULATION | | |
|------|------------------------------------|-------|-------|--------------------------------------|--------|--------|------------------|--------|--------|
| | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 | HYP 1 | HYP 2 | HYP 3 |
| 1961 | 3378. | 3378. | 3378. | 8667. | 8667. | 8667. | 18324. | 18324. | 18324. |
| 1962 | 3416. | 3416. | 3416. | 8873. | 8873. | 8873. | 18666. | 18666. | 18666. |
| 1963 | 3444. | 3444. | 3444. | 9075. | 9075. | 9075. | 18999. | 18999. | 18999. |
| 1964 | 3480. | 3480. | 3480. | 9314. | 9314. | 9314. | 19331. | 19331. | 19331. |
| 1965 | 3512. | 3512. | 3512. | 9571. | 9571. | 9571. | 19655. | 19655. | 19655. |
| 1966 | 3555. | 3555. | 3555. | 9859. | 9859. | 9859. | 20008. | 20008. | 20008. |
| 1967 | 3614. | 3614. | 3614. | 10170. | 10170. | 10170. | 20383. | 20383. | 20383. |
| 1968 | 3670. | 3670. | 3670. | 10460. | 10460. | 10460. | 20721. | 20721. | 20721. |
| 1969 | 3731. | 3731. | 3731. | 10750. | 10750. | 10750. | 21046. | 21046. | 21046. |
| 1970 | 3800. | 3800. | 3800. | 11039. | 11039. | 11039. | 21385. | 21385. | 21385. |
| 1971 | 3855. | 3872. | 3883. | 11276. | 11311. | 11335. | 21631. | 21708. | 21758. |
| 1972 | 3930. | 3965. | 3987. | 11516. | 11587. | 11635. | 21877. | 22031. | 22131. |
| 1973 | 4005. | 4060. | 4093. | 11754. | 11861. | 11933. | 22109. | 22340. | 22490. |
| 1974 | 4090. | 4165. | 4210. | 11988. | 12132. | 12229. | 22357. | 22665. | 22865. |
| 1975 | 4172. | 4267. | 4325. | 12220. | 12401. | 12523. | 22604. | 22990. | 23237. |
| 1976 | 4211. | 4326. | 4397. | 12471. | 12690. | 12837. | 22875. | 23349. | 23656. |
| 1977 | 4304. | 4440. | 4524. | 12680. | 12937. | 13110. | 23150. | 23708. | 24070. |
| 1978 | 4393. | 4551. | 4648. | 12886. | 13183. | 13383. | 23417. | 24059. | 24477. |
| 1979 | 4483. | 4663. | 4774. | 13080. | 13420. | 13647. | 23697. | 24424. | 24897. |
| 1980 | 4574. | 4777. | 4901. | 13247. | 13630. | 13887. | 23978. | 24790. | 25316. |

