CALCULATING INCIDENCE, PREVALENCE AND MORTALITY RATES FOR OLMSTED COUNTY, MINNESOTA: AN UPDATE

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I. INTRODUCTION

This is an update of the original technical report[1] written by Schroeder and Offord that describes the methodology for calculating incidence, prevalence and mortality rates for population-based studies in Rochester and Olmsted County, Minnesota. The primary purpose for the update is to incorporate the 1990 census data. Another change is the use of linear (as opposed to high-order polynomial) interpolation for intercensus year population estimates. Also, the macro code has been rewritten to allow for easier execution and the creation of an output data set. Finally, an option to calculate "corrected" incidence rates (by removing the estimated prevalence cases in the denominator) has been added. For completeness, parts of the Definitions (pp. 3-7) and Data Description (pp. 10-13) Sections are presented essentially unchanged from the original report.

II. DEFINITIONS

An **incidence rate**, for our purpose, is the number of new cases of a disease or event in a given period of time divided by the number at risk.[2] Typically, the denominator, or base, takes the form of person-years when the specified period extends beyond one year or if the duration of observation is unequal for various members of the base population. It should be noted that the populations referred to throughout this report are census populations, which are not necessarily the population actually at risk. Diseases for which a substantial proportion of the census population is not at risk can be dealt with by making appropriate corrections to the denominator, and an approach for doing this is also described.

A **point prevalence rate** is the number of persons manifesting a disease at a specified point in time divided by the total population at that time.[2] This point prevalence rate is in contrast to a **period prevalence rate** which covers some specified period of time.[3] The numerator for the latter is the number of persons manifesting the disease in the period. This includes those already showing it at the beginning (point prevalence), plus new cases and relapses which occur subsequently in the period. The denominator for period prevalence is the appropriate person-years.

The **mortality** or **death rate** is the proportion of the population at risk dying from a particular disease or from 'all causes' during a given time period.[2] The numerator is the number of persons dying and the denominator is the appropriate person-years. For a single year, the denominator is simply the mid-year population.

Incidence, prevalence, and mortality rates can all be expressed per 100, per 1000, per 10,000, per 100,000, or per million of the population per year.

The choice of units is made arbitrarily, usually so that the rates fall between 0 and 999, but some fields of study may have an established convention which should be followed.

Incidence rates calculated for a specific sex and age group are referred to as **sex- and age-specific incidence rates**. The same is true for prevalence or mortality rates but, for clarity, calculations will be described only for incidence rates.

Notationally, the calculations can be summarized quite simply as follows:

Let i index sex, 1=female, 2=male, and

j index the age group = 1, 2, . . . , J.

Let C_{ij} = number of incidence cases for sex i and age group j in a specified period of time.

Let P_{ij} = number of person-years for sex i and age group j in the same specified period of time from which the incidence cases came.

Then,

R_{ij} = the age (j) and sex (i) specific incidence rate;

= $(C_{ij}/P_{ij}) * K$, where K is a constant multiplier usually taken to be 100,000; 1,000,000; or 1,000.

The overall sex-specific rates (called crude sex-specific rates) would simply be $\frac{C_{i.}}{P_{i.}} * K$ with the dot notation implying the variable has been summed over that subscript. Additionally, the age-specific incidence rates across sexes would be $\frac{C_{.j}}{P_{.j}} * K$. The overall crude rate is $\frac{C_{..}}{P_{..}} * K$.

Adjustment of rates is usually done for three purposes, which are discussed below, with a general goal of standardization and comparability. To compare the frequency of disease in populations with differing age and sex structures, it is necessary to adjust the age- and sex-specific rates to a reference population. The method of "direct" (as opposed to "indirect") adjustment is used throughout this report. The adjusted rates take the form of a weighted average of the age- and sex-specific rates where the sum of the weights is unity.

1) Sex-specific, age-adjusted rates. One is often interested in the question of whether or not the sexes would have comparable overall incidence rates if the age distributions were the same for each. To this end, the observed incidence rates for men and women are adjusted to the same age distribution. This is done separately for each sex by multiplying the age-specific incidence rates by the proportions in some common (reference population) age distribution for both sexes combined. These proportions form the weights for the sex-specific, age-adjusted rates.

Let N_{ij} = number of persons of sex i in age group j in the reference population to which the rates for each sex are to be age adjusted.

Then, the sex-specific, age-adjusted rates may be written notationally as:

$$S_i = \sum_{j=1}^{J} \frac{N_{.j}}{N_{..}} * R_{ij} \qquad i=1,2 \ .$$

2) Age-adjusted rates. Secondly, one may wish to age adjust the age-specific incidence rates to a reference population to allow for a comparison with another study. This would proceed by multiplying the age-specific incidence rates by the weights which are the proportions from the reference population in the respective age groups. This may be written notationally as:

$$A = \sum_{j=1}^{J} \frac{N_{.j}}{N_{..}} * \frac{C_{.j}}{P_{.j}} * K \ .$$

3) Overall age- and sex-adjusted rate. A third type of adjusting is done for the purpose of estimating the overall incidence where the age and sex breakdown in the study population corresponds to that in the reference population. The overall age- and sex-adjusted incidence rate is obtained by multiplying the age- and sex-specific incidence rates by the age- and sex-specific proportions in the reference (adjusting) population and summing over all sex and age groups to get the overall age- and sex-adjusted incidence rate. These proportions are the weights. This may be written notationally as:

$$T = \sum_{i=1}^{2} \sum_{j=1}^{J} \frac{N_{ij}}{N_{..}} * R_{ij} \ .$$

Assuming that the incidence cases follow a Poisson distribution, **standard errors** of adjusted rates can be estimated in general as follows. The summation will be either over age (j), or sex (i) and age (j) as appropriate for the rate under consideration.

Let w_{ij} = weight or "adjusting fraction," where $\sum_{i=1}^{2} \sum_{j=1}^{J} w_{ij} = 1$.

Then, the "adjusted" rate

$$r = \Sigma w_{ij} R_{ij} = \Sigma w_{ij} \frac{C_{ij}}{P_{ij}} * K ,$$

where Σ refers to summation over both subscripts i and j.

The estimated variance of the adjusted rate is

$$v(\text{Poisson}) = \text{var}(r) = \Sigma \frac{w_{ij}^2 * C_{ij} * K^2}{P_{ij}^2} = \Sigma \frac{w_{ij}^2 R_{ij}^2}{C_{ij}} = \Sigma \frac{w_{ij}^2 R_{ij}}{P_{ij}} * K$$

and

$\sqrt{v(\text{Poisson})}$ = estimated standard error of the adjusted rate assuming a Poisson distribution of cases. The 95% confidence interval is calculated as the adjusted rate plus and minus 1.96 times the standard error. Negative lower limits of the 95% confidence interval are set equal to zero in the macro.

For prevalence determinations, where the denominator is fixed and the rates may be large, it may be more reasonable to assume that the number of cases is a binomial random variable with parameters $p = R_{ij}/K$ and $n = P_{ij}$. In this case, the variance of the adjusted rate is $v(\text{binomial}) = \Sigma w_{ij}^2 R_{ij} (K-R_{ij}) / P_{ij}$.

Corrected incidence rates: The census population is not strictly the population at risk for the disease in many instances. This is not a serious problem unless a substantial proportion of the census population is **not** at risk. Persons may not be at risk (or have a different risk) to develop the disease for at least two reasons. One, it may be physically impossible for them to acquire the disease (e.g., ovarian cancer in women who had a bilateral oophorectomy for a benign condition). Two, they

may have already experienced the disease (e.g., prostate cancer) and are considered prevalence cases. For most chronic diseases, prevalence cases are usually excluded from the denominator and numerator either because they are no longer considered at risk or because it can be problematic to distinguish recurrence from new disease, respectively. The techniques for corrected incidence rates programmed for this report are only concerned with the problem of removing the prevalence cases from the denominator.

Corrected incidence rates may be calculated, by removing the prevalence cases from the denominators, provided the following assumptions are reasonable:

i) the disease is not associated with any excess mortality;

ii) there are no important calendar time trends (in which case a cohort method should be considered, see Lyon and Gardner)[4]; and

iii) migration, in or out of the census population, is independent of disease status.

To calculate corrected incidence rates requires that one first determine the prevalence of the condition (estimated by cumulative incidence) at the **end** of the j^{th} age interval (CI_{ij}) . We calculated CI_{ij} using the method of Kleinbaum, Kupper and Morgenstern[5] with a slight modification (O'Fallon and Fleming, personal communication[6]) to remove the prevalence cases from the uncorrected rates, as follows:

$CI_{1,j} = 1 - e^{-x}$, where

$$x = \sum_{g=0}^{j-1} \{\Delta_{g+1} R_{1,g+1} / (1-CI_{1,g})\} ,$$

and Δ_g = width of the age interval in years, $CI_{1,0} \equiv 0$ and

'K', the rate multiplier, is assumed to be 1.

The cumulative incidence at the **midpoint** of the j^{th} age interval is defined as:

$$MCI_{i,j} = (CI_{i,j-1} + CI_{i,j}) / 2 .$$

If not specified, the upper limit of the highest age interval is assumed to be 99.

The corrected incidence rate, removing the proportion of the census population who would have already experienced the disease, is then calculated as:

$$R^{c}_{ij} = R_{ij} / (1 - MCI_{1,j}) .$$

Corrected rates can then be adjusted in an analogous fashion to the uncorrected rates. The variance of the adjusted corrected rates can be approximated by using the formula for the variance of the uncorrected rates, replacing w_{ij} with

$$w_{ij} / (1-MCI_{1,j}) .$$

III. DATA DESCRIPTION

Census data were obtained for Rochester, Olmsted County, U.S. white, and U.S. total populations for the seven decade years from 1930 to 1990 and were subdivided by sex and five-year age groups. The first age group was further subdivided into those persons less than one year of age and those one to four years of age. The oldest group includes all persons 85 years of age and older. The data for Olmsted County, exclusive of Rochester (hereafter referred to as Olmsted County balance) was computed as the difference between the Olmsted County total population and the Rochester population.

For local populations (i.e., Rochester, Olmsted County total, and Olmsted County balance), the data set contains both corrected and uncorrected data. In contrast to Section II, use of the word "corrected" in this section refers to the removal (from the census data) of those people who were not truly residents of the population in question. The **uncorrected** data are the values obtained directly from the Census for Minnesota and U.S. (see Appendix A, Tables A1-A3). Prior to 1990, the **corrected** values were obtained by subtracting from the uncorrected data those persons in the Rochester State Hospital and those attending Rochester Community College and Rochester Bible College who were not residents of the local population of interest. In 1990, the only correction needed was to exclude from the Rochester population those living in the Federal Medical Center. (A list of corrections to the data for the Rochester and Olmsted County total populations can be found in Appendix A, Tables A4 and A5. The number of corrections for the Olmsted County balance was obtained by subtraction.) A table of the data for each population can be found in Appendix B. These corrections have little influence on the ultimate incidence rates.

Appendix C contains plots of the Rochester uncorrected, Olmsted County total uncorrected, and Olmsted County balance uncorrected populations versus calendar year for each age group and sex. It also contains plots of the U.S. white and U.S. total populations versus calendar year for each age group and sex. Plots of the corrected populations were not made, since they differ minimally from the uncorrected populations.

For each sex and age subgroup, **linear interpolation** was used to estimate the population for the intercensus years. This interpolation was done for the four populations (Olmsted and Rochester, corrected and uncorrected) by fitting a unique regression line between each pair of population counts for adjacent census times. Values for the balance of Olmsted County were obtained by subtraction. Using these regression equations, predicted estimates for the years 1931-1939, 1941-1949, etc. were obtained. The observed census figures were used for 1930, 1940, . . . , 1990. This is in contrast to our earlier report[1] where high-order polynomials were used to obtain intercensus predicted populations. The primary advantages of linear interpolation between census years include simplicity of calculation and the fact that previous estimates remain unchanged as new census data become available. Plots (by sex and age group) of the linear and polynomial intercensus population estimates versus calendar time indicated close agreement. When evident, differences were more likely to occur in the youngest ages and at the beginning (1930-39) and ending (1970-79) time periods. Of course, both methods use the actual census data for the census years 1930, 1940, . . . , 1990.

A SAS data set was created containing the population information. It is stored on the IBM under SR.KPO.S12117.SAS (member name = S1211700) and in the HSR/UNIX under ~chu/consult/s12117/sasdata. The data and programs for creating this data set are stored under study number 1-2117. An abbreviated listing of the contents (including a list of the variables by position on the data set) can be found in Appendix D.

There are 38 observations (2 sexes × 19 age groups) in the data set with each observation identified by sex and age group. There are 380 variables corresponding to the six local populations for the 61 calendar years 1930-1990 and the two U.S. populations for the seven-decade calendar years.

In this data set, sex appears as a character variable of length '1' named SEX. It takes on the value 'M' for males and 'F' for females. The variable name for the numeric variable identifying age group is AGE_GRP. It is coded as follows:

AGE_GRP	Corresponding Age Interval	AGE_GRP	Corresponding Age Interval
0	0	45	45-49
1	1-4	50	50-54
5	5-9	55	55-59
10	10-14	60	60-64
15	15-19	65	65-69
20	20-24	70	70-74
25	25-29	75	75-79
30	30-34	80	80-84
35	35-39	85	85+
40	40-44		

The 380 variable names associated with the six local populations for the 61 calendar years 1930-1990 and the two U.S. populations for the seven decade calendar years consist of eight characters. The first six characters contain the abbreviated population name and the last two characters indicate the calendar year.

ROCHRC30, 31, 32, ... , 90 = Rochester Corrected
ROCHRU30, 31, 32, ... , 90 = Rochester Uncorrected
OLTOTC30, 31, 32, ... , 90 = Olmsted County Total Corrected
OLTOTU30, 31, 32, ... , 90 = Olmsted County Total Uncorrected
OLBALC30, 31, 32, ... , 90 = Olmsted County Balance Corrected
OLBALU30, 31, 32, ... , 90 = Olmsted County Balance Uncorrected
USWHT_30, 40, 50, 60, 70, 80, 90 = U.S. White
USTOT_30, 40, 50, 60, 70, 80, 90 = U.S. Total

IV. MACRO USE AND EXAMPLES

A SAS macro (%irate) to perform incidence rate type analyses is available on the IBM and UNIX macro autocall library. (See Appendix E for a complete listing.) It calculates age- and sex-specific incidence, prevalence, or mortality rates along with various summary rates (overall crude rates, age-adjusted rates, and age-sex-adjusted rates). For the adjusted rates, the estimated standard error and a 95% confidence interval are also given. Optionally, one can request that all of the above types of incidence rates also be calculated with the estimated number of prevalence cases removed from the denominator. This is only reasonable if the aforementioned assumptions are met. One can restrict both the cases (numerators) and the population (denominators) to specified age ranges (using B_AGE and MAXAGE options). Additionally, all of the calculated rates can be output to a data set for further processing.

The macro call statement is given below:

```
%irate(CDATA,AGEVAR,B_AGE,IPOPN,MAXAGE= ,ADJU_POP= ,OUTDATA= ,
    PRINT= ,CORRIN= ,OUTDATAC= ,INCLUDE= , ERROR=) :
```

CDATA is the name of the SAS data set containing one observation for each incidence case. This data set must have a character variable named SEX with levels 'M' and 'F' and also the age variable to be described next.

AGEVAR is the variable name defining the integer age at time of diagnosis (onset), prevalence, or death as appropriate for the cases.

B_AGE is the string of ordered numbers 'a1 a2 a3 etc' used to formulate the desired age groupings for the incidence rates. These "beginning" age values must be in ascending order and chosen from 0,1,5,10,15,..,75 80,85; corresponding to the age groupings available in the population (denominator) data sets. Specifying '0 30 40 50 60' implies age intervals of 0-29,30-39,40-49,50-59 and 60 to MAXAGE, where MAXAGE is defined below. Note that if the smallest age in the string is greater than zero, then any cases

and denominator populations less than that age will be excluded from all rate and adjusted rate and corrected rate calculations. Users must exercise caution in interpreting findings when certain ages have been excluded.

IPOPN is the variable name or expression defining the population (denominator) to be used for the incidence rates. This would typically be some combination of variables from the SAS data set S1211700 representing the Rochester, Olmsted County or Olmsted County Balance populations. If one wanted the Rochester corrected population for 1980-89, then the IPOPN expression would be as follows: 'sum (of ROCHRC80-ROCHRC89)'. User defined populations, created by modifying the %irate macro at 'Comment 3', may also be used in the IPOPN definition.

The following parameters are optional and are specified using the "keyword = value" style. Omitting the parameter implies the default.

MAXAGE is the maximum integer age to use for the incidence analysis. MAXAGE should end in a 0 (age zero only), 4 or 9 (corresponding to the population age groups). Values of MAXAGE at or above 85 imply no upper limit on age. The minimum age is the lowest value of the B_AGE string. This is an optional parameter with default value of 120.

ADJU_POP is the name of the population to be used for calculating adjusted rates. This would typically be one of variables corresponding to the U.S. total or white census year populations, e.g., USTOT_80. Omit this parameter if adjusted rates are not desired.

OUTDATA is the name of output SAS data set containing the incidence rates. Note that this can be a two-level(permanent) name. Default name is _RATES.

PRINT = N if no printed output is desired. The default is to print.

CORRIN = Y if corrected incidence rates are desired. One should omit this parameter unless such rates are appropriate.

OUTDATAC = Name of output SAS data set containing the corrected incidence rates, if so requested with the CORRIN option. Default name is _CRATES.

INCLUDE = F or M indicates that only females (F) or males (M) are to be included in the analysis, respectively. This option affects the case data, the denominator data and the adjusting population. This may be of use for sex-specific diseases such as prostate cancer. It is a necessary option if one wants rates to be adjusted to only the female or only the male age distribution. Default is to include both sexes.

ERROR = B indicates that the number of cases is assumed to follow the binomial distribution with parameter p and variance p(1-p)/n. This is in contrast to the default which assumes a Poisson distribution with variance p/n. The binomial option may be desirable when the actual rates are high (>.10 say), as may be the case with prevalence rates. This option does not apply to corrected incidence calculations.

Example 1: Say one wishes to calculate the incidence of stroke in the Rochester population among persons age 45 or older for the period 1975-79. If the Rochester incidence stroke cases for this period are contained in a SAS data set named STK (containing a character variable named SEX and a numeric one named AGE, corresponding to the age at stroke onset) and one wishes the rates to be adjusted to the US 1980 white population of persons age 45 and above, then the following statement would be required:

```
%irate(stk,age,45 55 65 75 85,sum(of rochrc75-rochrc79),OUTDATA=adjrates,
 ADJU_POP=uswht_80);
```

In the above statement, the use of upper case letters is optional as they were used only to emphasize the macro variable names. Note that the output data set is given the name 'adjrates' with the single page of output from the above example is given in Table 1. This output includes:

1. A breakdown of incidence cases by SEX and AGE_GP. These appear in columns (A), (B) and (C).

2. A breakdown by SEX and AGE_GP of the population person-years from which the cases came. These appear in columns (D), (E) and (F).

3. The age-, sex- and age-sex-specific incidence rates(x100,000) in columns (G), (H) and (I). The rates in the margins represent crude incidence rates.

4. The adjusting populations in columns (J), (K) and (L).

Incidence Rates: Case Dataset=stk, Incidence Population=sum(of rochrc75-rochrc79)
Adjusting population= uswht_80(U.S. popns are in 1000's)

	INCIDENCE			INCIDENCE POPULATION			INCIDENCE RATES (X 100,000)			ADJUSTING POPULATION		
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
AGE_GP	F	M	TOT	F	M	TOT	F	M	TOT	F	M	TOT
45-54	9	8	17	12835	11785	24620	70 1208	67.8829	69.0496	10055	9556	19611
55-64	13	26	39	11563	9331	20894	112.4276	278.6411	186 6565	10185	9024	19209
65-74	48	41	89	9937	5642	15579	483.0432	726.6927	571.2819	7871	6032	13903
75-84	69	48	117	7027	3040	10067	981.9269	1578.9474	1162.2132	4420	2572	6992
85+	30	8	38	2668	801	3469	1124.4378	998.7516	1095.4165	1430	614	2044
TOTAL	169	131	300	44030	30599	74629	383.8292	428.1186	401.9885	33961	27798	61759

SUMMARY RATES	INCIDENCE RATE PER 100,000	S.E. (Poisson)	95 PERCENT C.I. LOWER	UPPER
AGE ADJUSTED------FEMALES	314.3589	24.915191	265.5251	363.1927
AGE ADJUSTED--------MALES	483.6271	42.450019	400.4250	566.8291
AGE ADJUSTED--------TOTAL	376.4208	21.979568	333.3408	419.5008
AGE & SEX ADJUSTED--TOTAL	385.7102	22.734797	341.1500	430.2704

Table 1.

5. Summary rates. At the bottom of the page is a sub-table presenting various adjusted incidence rates (per 100,000 person-years), the estimated standard error of the rate and a 95% confidence interval(estimate +/- 1.96 x standard error) for the true rate. The first three rates are age-adjusted using the total(over sex) age distribution of the adjusting population. The age-sex-adjusted rate is derived as the weighted sum of the age- and sex-specific incidence rates, where the weights are the proportion of the total adjusting population in a given age and sex subgroup.

Example 2: Say one wishes to study the occurrence of bilateral oophorectomy in Olmsted County. The time period is 1950-59, and it was necessary to age adjust our rates to the 1980 U.S. white female population for comparison with another study. As bilateral oophorectomy was a rather common procedure usually not associated with excess mortality (commonly done for elective reasons or for benign conditions), it was decided to also calculate corrected incidence rates. If the case data set is named OOPH, then the call statement is as follows:

```
%irate(ooph,age,0 15 25 35 45 55 65 75 85,sum(of oltotc50-oltotc59),
 ADJU_POP=uswht_80, CORRIN=y, INCLUDE=f);
```

The two pages of output from this example are given in Table 2. The first page is the same layout as for Example 1. The **second** page is a result of the request for corrected incidence rates. Included on this page are the following:

1. Crude age- and sex-specific uncorrected incidence rates. This is just a repeat of columns (G), (H) and (I) from the first page.

2. The estimated cumulative incidence at the END of each age interval for females, males, and total is given in columns M, N and O, respectively.

3. The corrected incidence rates in columns (P), (Q) and (R). These rates are the uncorrected rates divided by '1-MCI', where MCI is the cumulative incidence at the mid-point of the age interval. MCI is the arithmetic average of CI at the beginning and CI at the end of the age interval.

4. Summary corrected rates. At the bottom of the second page is a sub-table presenting a set of ajusted rates based on the corrected age- and sex-specific incidence rates.

Incidence Rates: Case Dataset=ooph, Incidence Population=sum(of oltotc50-oltotc59)
Adjusting population= uswht_80(U.S. popns are in 1000's)
Include=f option in effect MALES EXCLUDED.

	INCIDENCE			INCIDENCE POPULATION			INCIDENCE RATES (X 100,000)			ADJUSTING POPULATION		
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
AGE_GP	F	M	TOT	F	M	TOT	F	M	TOT	F	M	TOT
0-14	0		0	81886		81886	0.0000		0.0000	19546		19546
15-24	2		2	49634		49634	4.0295		4.0295	16929		16929
25-34	15		15	41493		41493	36.1507		36.1507	15322		15322
35-44	64		64	34654		34654	184.6829		184.6829	10904		10904
45-54	95		95	30071		30071	315.9190		315.9190	10055		10055
55-64	40		40	23490		23490	170.2852		170.2852	10185		10185
65-74	11		11	15840		15840	69.4444		69.4444	7871		7871
75-84	7		7	7816		7816	89.5599		89.5599	4420		4420
85+	1		1	1868		1868	53.5332		53.5332	1430		1430
TOTAL	235		235	286752		286752	81.9523		81.9523	96662		96662

SUMMARY RATES	INCIDENCE RATE PER 100,000	S.E. (Poisson)	95 PERCENT C I LOWER	UPPER
AGE ADJUSTED------FEMALES	88.6162	5.879276	77.0929	100 1396
AGE ADJUSTED--------MALES				
AGE ADJUSTED--------TOTAL	88.6162	5.879276	77.0929	100 1396
AGE & SEX ADJUSTED--TOTAL				

CUMULATIVE and CORRECTED INCIDENCE: Population= IPOPN
Adjusting popn.= uswht_80

Age Int.	Int. Width	Incidence (x100,000) Female (G)	Male (H)	Total (I)	Cumulative Incidence (end of int., x100) Female (M)	Male (N)	Total (O)	Corrected Incidence (x100,000) Female (P)	Male (Q)	Total (R)
0-14	15	0.00		0.00	0.00		0.00	0.00		0.00
15-24	10	4.03		4.03	0.04		0.04	4.03		4.03
25-34	10	36.15		36.15	0.40		0.40	36.23		36.23
35-44	10	184.68		184.68	2.23		2.23	187.15		187.15
45-54	10	315.92		315.92	5.34		5.34	328.35		328.35
55-64	10	170.29		170.29	7.03		7.03	181.51		181.51
65-74	10	69 44		69.44	7.72		7.72	74.97		74.97
75-84	10	89.56		89.56	8.61		8.61	97.52		97.52
85+	15	53.53		53.53	9.41		9.41	58.83		58.83

Summary Corrected Rates	Incidence (x100,000)	S.E. (Poisson)	95% C.I Lower	Upper
Age adjusted ------Females	92.28	6.1500	80.22	104.33
Age adjusted --------Males				
Age adjusted --------Total	92.28	6.1500	80.22	104.33
Age & sex adjusted --Total				

NOTE: Corrected incidence assumes no disease-related mortality or migration and no important calendar time trends

V. REFERENCES

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VI. APPENDICES

A. Data Sources

B. Tables of Population Counts

C. Plots of Population Counts

D. Contents of Population Dataset

E. Listing of Macro Code

Appendix A: Data Sources and Corrections

Table A1.

Population: Rochester Uncorrected

Year	Age Groups	Description of Data Source
1930	0-30	1930 data from 1940 U.S. Census.[7]
	35-70	The 1930 data were given in the 1940 U.S. Census[7] in 10-year age groups. It was broken down into 5-year age groups by using the percentage from the 1940 Rochester population for the corresponding age group and sex.
	75+	The 1930 data were given in the 1940 U.S. Census[7] in one group. It was broken down into ages 75-84 and 85+ using the percentage from the 1950 Rochester population for the corresponding age group and sex. It was further subdivided into ages 75-79 and 80-84 using the percentage from the 1960 Olmsted County total population for corresponding sex and age group.
1940	0-70	1940 U.S. Census.[7]
	75+	The data were given in the 1940 U.S. Census[7] in one group. It was broken down into ages 75-84 and 85+ using the percentage from the 1950 Rochester population for corresponding age and sex group. It was further subdivided into ages 75-79 and 80-84 using the percentage from the 1960 Rochester population for corresponding sex and age group.
1950	0-70, 85+	1950 Census of Population, Minnesota.[8]
	75-84	Given in 1950 Census of Population, Minnesota[8] in one group. It was broken down using the percentage from the 1960 Rochester population for corresponding age group and sex.
1960	All	1960 Census of Population, Minnesota.[10]
1970	All	1970 Census of Population, Minnesota.[11]
1980	All	1980 Census of Population.[13]
1990	All	1990 Census of Population.[14]

Table A2.

Population: Olmsted County Total Uncorrected

Year	Age Groups	Description of Data Source
1930	0-30	1930 data from 1940 U.S. Census.[7]
	35-70	The 1930 data were given in the 1940 U.S. Census[7] in 10-year age groups. It was broken down into 5-year age groups by using the percentage from the 1940 Olmsted County total population for the corresponding age group and sex.
	75+	The 1930 data were given in the 1940 U.S. Census[7] as one age group. It was broken down into ages 75-84 and 85+ using the percentage from the 1950 Olmsted County total population for the corresponding age group and sex. It was further subdivided into ages 75-79 and 80-84 using the percentage from the 1960 Olmsted County total population for corresponding sex and age group.
1940	0-70	1940 U.S. Census.[7]
	75+	The data were given in the 1940 U.S. Census[7] in one group. It was broken down into ages 75-84 and 85+ using the percentage from the 1950 Olmsted County total population for corresponding age and sex group. It was further subdivided into ages 75-79 and 80-84 using the percentage from the 1960 Olmsted County population for corresponding sex and age group.
1950	0-70, 85+	1950 Census of Population, Minnesota.[8]
	75-84	The data were given in the 1950 Census of Population for Minnesota[8] as one group. It was broken down using the percentage from the 1960 Olmsted County total population for corresponding age group and sex.
1960	All	1960 Census of Population, Minnesota.[10]
1970	All	1970 Census of Population, Minnesota.[11]
1980	All	1980 Census of Population.[13]
1990	All	1990 Census of Population.[14]

Table A3.

Populations: U.S. Total and U.S. White

Year	Age Groups	Description of Data Source
1930	All	1930 data from 1940 U.S. Census.[7]
1940	All	1940 U.S. Census.[7]
1950	5-70	1950 data from 1970 U.S. Census.[12]
	0,1,75,80,85	1950 U.S. Census.[9]
1960	0-5	The 1960 data were given in the 1970 U.S. Census[12] in one age group. It was broken down using the average percentage of the 1950 and 1970 U.S. Total (White) populations for corresponding age group and sex.
	5-70	1960 data from 1970 U.S. Census.[12]
	75+	The 1960 data were given in the 1970 U.S. Census[12] in one age group. It was broken down using the average percentage of the 1950 and 1970 U.S. Total (White) population for corresponding age group and sex.
1970	All	1970 U.S. Census.[12]
1980	5-85	1980 U.S. Census.[13]
	0-5	The data were given in the 1980 U.S. Census[13] in one group. It was broken down using the percentage of the 1970 U.S. Total (White) population for corresponding age group and sex.
1990	All	1990 U.S. Census.[14]

Table A4.

Rochester Corrections

SEX	AGE_GP	1930	1940	1950	1960	1970	1980	1990
F	0	0	0	0	0	0	1	0
F	1-4	0	0	0	0	0	0	0
F	5-9	2	0	1	0	2	2	0
F	10-14	1	1	0	0	3	6	0
F	15-19	11	6	6	38	262	272	0
F	20-24	23	32	22	17	122	351	0
F	25-29	57	43	36	24	20	91	0
F	30-34	70	45	66	38	9	52	0
F	35-39	113	88	77	49	15	32	0
F	40-44	116	94	69	61	17	17	0
F	45-49	98	105	79	72	18	16	0
F	50-54	95	93	86	65	28	11	0
F	55-59	94	109	84	74	21	15	0
F	60-64	68	81	105	83	21	15	0
F	65-69	62	73	97	81	21	11	0
F	70-74	33	61	78	110	13	8	0
F	75-79	27	53	59	82	14	5	0
F	80-84	20	27	28	55	11	3	0
F	85+	1	1	30	45	6	0	0
M	0	0	0	0	0	0	1	0
M	1-4	0	0	0	0	0	0	0
M	5-9	0	0	0	0	1	1	0
M	10-14	2	0	1	0	6	4	0
M	15-19	11	2	10	47	158	125	7
M	20-24	33	29	16	35	111	214	93
M	25-29	43	30	27	25	24	74	113
M	30-34	51	58	39	13	12	36	165
M	35-39	64	57	49	39	10	17	152
M	40-44	117	36	67	51	12	13	90
M	45-49	102	43	77	60	17	12	71
M	50-54	87	80	52	78	38	4	12
M	55-59	93	92	69	83	33	5	11
M	60-64	67	64	85	59	38	7	10
M	65-69	51	60	81	70	25	1	9
M	70-74	42	37	56	82	20	8	7
M	75-79	8	25	47	52	9	7	5
M	80-84	3	6	27	35	13	4	3
M	85+	12	27	18	27	7	2	2

Table A5.

Olmsted County Total Corrections

SEX	AGE_GP	1930	1940	1950	1960	1970	1980	1990
F	0	0	0	0	0	0	1	0
F	1-4	0	0	0	0	0	0	0
F	5-9	2	0	1	0	2	2	0
F	10-14	1	1	0	0	3	6	0
F	15-19	10	5	6	37	259	272	0
F	20-24	33	31	21	15	121	351	0
F	25-29	56	41	33	24	20	91	0
F	30-34	67	43	64	36	9	52	0
F	35-39	113	86	73	46	15	32	0
F	40-44	109	90	67	59	17	17	0
F	45-49	91	102	78	67	18	16	0
F	50-54	93	92	85	62	28	11	0
F	55-59	90	101	82	72	21	15	0
F	60-64	62	81	101	82	21	15	0
F	65-69	82	68	93	79	21	11	0
F	70-74	9	3	76	105	13	8	0
F	75-79	40	76	57	78	14	5	0
F	80-84	18	23	24	53	11	3	0
F	85+	8	20	28	44	6	0	0
M	0	0	0	0	0	0	1	0
M	1-4	0	0	0	0	0	0	0
M	5-9	0	0	0	0	1	1	0
M	10-14	2	0	1	0	6	4	0
M	15-19	11	2	10	47	163	125	7
M	20-24	27	29	16	35	122	214	93
M	25-29	40	28	26	24	24	74	113
M	30-34	49	56	39	12	12	36	165
M	35-39	65	55	48	39	10	17	152
M	40-44	108	30	64	51	12	13	90
M	45-49	101	42	76	59	17	12	71
M	50-54	82	77	47	75	38	4	12
M	55-59	82	92	68	82	33	5	11
M	60-64	55	63	82	54	38	7	10
M	65-69	48	56	72	68	25	1	9
M	70-74	40	32	53	80	20	8	7
M	75-79	30	44	46	49	9	7	5
M	80-84	9	6	24	32	13	4	3
M	85+	4	3	17	23	7	2	2

APPENDIX B: Population Listings

Index (Table Numbers)

Population	Year 1930-44	1945-59	1960-74	1975-90
Corrected:				
(1) Rochester	1a	1b	1c	1d
(2) Olmsted County Total	2a	2b	2c	2d
(3) Olmsted County Balance	3a	3b	3c	3d
Uncorrected:				
(4) Rochester	4a	4b	4c	4d
(5) Olmsted County Total	5a	5b	5c	5d
(6) Olmsted County Balance	6a	6b	6c	6d
(7) U.S. Total	7*			
(8) U.S. White	8*			

* Census years 1930, 40, 50, 60, 70, 80, 90.

APPENDIX B: POPULATIONS 1930-1990

Table 1A

Rochester Corrected

		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	E	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	182	181	179	178	176	175	174	172	171	169	168	183	199	214	230
FEMALE	1	611	622	632	643	653	664	675	685	696	706	717	763	808	854	899
FEMALE	5	771	778	786	793	800	808	815	822	829	837	844	860	876	891	907
FEMALE	10	735	748	760	773	785	798	811	823	836	848	861	852	844	835	826
FEMALE	15	978	998	1019	1039	1059	1080	1100	1120	1140	1161	1181	1200	1220	1239	1258
FEMALE	20	1518	1552	1585	1619	1652	1686	1720	1753	1787	1820	1854	1848	1842	1836	1830
FEMALE	25	1162	1205	1248	1291	1334	1378	1421	1464	1507	1550	1593	1571	1548	1526	1503
FEMALE	30	945	982	1018	1055	1091	1128	1165	1201	1238	1274	1311	1297	1284	1270	1256
FEMALE	35	773	796	819	842	865	888	910	933	956	979	1002	1011	1020	1030	1039
FEMALE	40	710	731	752	773	794	816	837	858	879	900	921	932	942	953	963
FEMALE	45	578	602	625	649	672	696	720	743	767	790	814	832	851	869	887
FEMALE	50	430	449	468	487	506	526	545	564	583	602	621	649	677	705	733
FEMALE	55	370	391	412	433	454	476	497	518	539	560	581	604	626	649	671
FEMALE	60	266	281	296	311	326	341	356	371	386	401	416	438	460	481	503
FEMALE	65	209	224	239	253	268	283	298	313	327	342	357	378	400	421	443
FEMALE	70	179	189	198	208	217	227	236	246	255	265	274	285	296	306	317
FEMALE	75	73	79	85	91	97	103	108	114	120	126	132	146	159	173	186
FEMALE	80	39	43	48	52	57	61	65	70	74	79	83	91	99	108	116
FEMALE	85	40	44	47	51	54	58	62	65	69	72	76	78	80	81	83
TOTAL(F)		10569	10895	11216	11541	11860	12192	12515	12835	13159	13481	13806	14018	14231	14441	14650
MALE	0	146	151	156	160	165	170	175	180	184	189	194	211	227	244	260
MALE	1	631	649	666	684	702	720	737	755	773	790	808	845	881	918	954
MALE	5	804	807	810	814	817	820	823	826	830	833	836	850	864	878	892
MALE	10	710	722	733	745	757	769	780	792	804	815	827	829	830	832	833
MALE	15	653	674	695	717	738	759	780	801	823	844	865	854	843	832	821
MALE	20	702	725	747	770	793	816	838	861	884	906	929	917	905	894	882
MALE	25	800	826	853	879	905	932	958	984	1010	1037	1063	1067	1071	1076	1080
MALE	30	767	794	821	849	876	903	930	957	985	1012	1039	1042	1046	1049	1053
MALE	35	709	722	734	747	760	773	785	798	811	823	836	834	833	831	829
MALE	40	593	612	631	651	670	689	708	727	747	766	785	790	794	799	804
MALE	45	452	479	506	533	560	587	613	640	667	694	721	721	721	722	722
MALE	50	388	407	425	444	463	482	500	519	538	556	575	589	602	616	630
MALE	55	298	312	327	341	356	370	384	399	413	428	442	462	481	501	520
MALE	60	222	233	244	255	266	277	287	298	309	320	331	353	375	397	419
MALE	65	206	211	217	222	227	233	238	243	248	254	259	271	283	296	308
MALE	70	148	153	158	163	168	174	179	184	189	194	199	206	213	220	227
MALE	75	73	79	84	90	95	101	106	112	117	123	128	132	136	140	144
MALE	80	41	45	48	52	56	60	63	67	71	74	78	79	80	82	83
MALE	85	19	20	22	23	25	26	27	29	30	32	33	34	36	37	39
TOTAL(M)		8362	8621	8877	9139	9399	9661	9911	10172	10433	10690	10948	11086	11221	11364	11500
TOTAL		18931	19516	20093	20680	21259	21853	22426	23007	23592	24171	24754	25104	25452	25805	26150

APPENDIX B: POPULATIONS 1930-1990

Table 1B

Rochester Corrected

		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	E	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
FEMALE	0	245	260	276	291	307	322	341	359	378	396	415	433	452	470	489
FEMALE	1	945	991	1036	1082	1127	1173	1247	1320	1394	1468	1542	1615	1689	1763	1836
FEMALE	5	923	939	955	970	986	1002	1095	1188	1281	1374	1467	1560	1653	1746	1839
FEMALE	10	818	809	800	791	783	774	855	936	1017	1098	1180	1261	1342	1423	1504
FEMALE	15	1278	1297	1316	1335	1355	1374	1432	1489	1547	1605	1663	1720	1778	1836	1893
FEMALE	20	1825	1819	1813	1807	1801	1795	1827	1858	1890	1921	1953	1984	2016	2047	2079
FEMALE	25	1481	1458	1436	1413	1391	1368	1381	1394	1406	1419	1432	1445	1458	1470	1483
FEMALE	30	1243	1229	1215	1201	1188	1174	1194	1214	1234	1254	1274	1294	1314	1334	1354
FEMALE	35	1048	1057	1066	1076	1085	1094	1108	1122	1137	1151	1165	1179	1193	1208	1222
FEMALE	40	974	984	995	1005	1016	1026	1036	1047	1057	1068	1078	1088	1099	1109	1120
FEMALE	45	906	924	942	960	979	997	1013	1028	1044	1059	1075	1090	1106	1121	1137
FEMALE	50	761	788	816	844	872	900	912	924	936	948	960	972	984	996	1008
FEMALE	55	694	717	739	762	784	807	824	841	859	876	893	910	927	945	962
FEMALE	60	525	547	569	590	612	634	661	688	714	741	768	795	822	848	875
FEMALE	65	464	485	507	528	550	571	589	607	625	643	661	679	697	715	733
FEMALE	70	328	339	350	360	371	382	402	422	442	462	483	503	523	543	563
FEMALE	75	200	213	227	240	254	267	285	303	321	339	358	376	394	412	430
FEMALE	80	124	132	140	149	157	165	174	184	193	203	212	221	231	240	250
FEMALE	85	85	87	89	90	92	94	102	110	118	126	135	143	151	159	167
TOTAL(F)		14867	15075	15287	15494	15710	15919	16478	17034	17593	18151	18714	19268	19829	20385	20944
MALE	0	277	293	310	326	343	359	381	403	424	446	468	490	512	533	555
MALE	1	991	1027	1064	1100	1137	1173	1255	1338	1420	1503	1585	1667	1750	1832	1915
MALE	5	906	919	933	947	961	975	1080	1185	1290	1395	1500	1605	1710	1815	1920
MALE	10	835	836	838	839	841	842	919	996	1073	1150	1228	1305	1382	1459	1536
MALE	15	811	800	789	778	767	756	785	814	843	872	901	930	959	988	1017
MALE	20	870	858	846	835	823	811	823	835	847	859	871	883	895	907	919
MALE	25	1084	1088	1092	1097	1101	1105	1127	1148	1170	1191	1213	1235	1256	1278	1299
MALE	30	1056	1059	1063	1066	1070	1073	1106	1138	1171	1204	1237	1269	1302	1335	1367
MALE	35	828	826	824	822	821	819	852	885	917	950	983	1016	1049	1081	1114
MALE	40	809	813	818	823	827	832	853	874	895	916	937	958	979	1000	1021
MALE	45	722	722	722	723	723	723	742	760	779	797	816	834	853	871	890
MALE	50	644	657	671	685	698	712	724	737	749	761	774	786	798	810	823
MALE	55	540	559	579	598	618	637	642	647	652	657	662	666	671	676	681
MALE	60	441	463	485	507	529	551	558	564	571	577	584	590	597	603	610
MALE	65	320	332	344	357	369	381	396	411	426	441	456	470	485	500	515
MALE	70	234	241	248	255	262	269	283	297	310	324	338	352	366	379	393
MALE	75	148	151	155	159	163	167	173	180	186	192	199	205	211	217	224
MALE	80	84	85	86	88	89	90	93	96	99	102	105	107	110	113	116
MALE	85	40	41	43	44	46	47	51	54	58	61	65	69	72	76	79
TOTAL(M)		11640	11770	11910	12049	12188	12322	12843	13362	13880	14398	14922	15437	15957	16473	16994
TOTAL		26507	26845	27197	27543	27898	28241	29321	30396	31473	32549	33636	34705	35786	36858	37938

APPENDIX B: POPULATIONS 1930-1990

Table 1C

Rochester Corrected

		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	E	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	507	506	504	503	501	500	498	497	495	494	492	490	488	486	484
FEMALE	1	1910	1915	1920	1925	1930	1935	1939	1944	1949	1954	1959	1924	1889	1854	1819
FEMALE	5	1932	2015	2098	2182	2265	2348	2431	2514	2598	2681	2764	2679	2593	2508	2422
FEMALE	10	1585	1676	1766	1857	1947	2038	2128	2219	2309	2400	2490	2444	2398	2351	2305
FEMALE	15	1951	2008	2066	2123	2181	2238	2295	2353	2410	2468	2525	2538	2551	2564	2577
FEMALE	20	2110	2214	2317	2421	2524	2628	2732	2835	2939	3042	3146	3220	3293	3367	3441
FEMALE	25	1496	1591	1686	1781	1876	1971	2066	2161	2256	2351	2446	2514	2582	2650	2718
FEMALE	30	1374	1430	1485	1541	1596	1652	1708	1763	1819	1874	1930	1984	2039	2093	2148
FEMALE	35	1236	1252	1268	1285	1301	1317	1333	1349	1366	1382	1398	1444	1490	1536	1582
FEMALE	40	1130	1156	1183	1209	1235	1262	1288	1314	1340	1367	1393	1409	1425	1442	1458
FEMALE	45	1152	1168	1183	1199	1215	1231	1246	1262	1278	1293	1309	1307	1305	1303	1301
FEMALE	50	1020	1040	1061	1081	1101	1122	1142	1162	1182	1203	1223	1230	1237	1244	1251
FEMALE	55	979	1004	1029	1054	1079	1104	1128	1153	1178	1203	1228	1227	1227	1226	1225
FEMALE	60	902	920	938	956	974	992	1009	1027	1045	1063	1081	1082	1083	1085	1086
FEMALE	65	751	773	795	817	839	861	883	905	927	949	971	978	985	992	999
FEMALE	70	583	611	638	666	693	721	749	776	804	831	859	875	890	906	921
FEMALE	75	448	473	498	524	549	574	599	624	650	675	700	716	731	747	763
FEMALE	80	259	281	302	324	345	367	389	410	432	453	475	492	509	527	544
FEMALE	85	175	194	213	233	252	271	290	309	329	348	367	391	415	438	462
TOTAL(F)		21500	22227	22950	23681	24403	25132	25853	26577	27306	28031	28756	28944	29130	29319	29506
MALE	0	577	577	578	578	578	579	579	579	579	580	580	574	567	561	554
MALE	1	1997	2001	2006	2010	2014	2019	2023	2027	2031	2036	2040	2002	1965	1927	1890
MALE	5	2025	2116	2206	2297	2387	2478	2568	2659	2749	2840	2930	2828	2726	2625	2523
MALE	10	1613	1710	1806	1903	1999	2096	2193	2289	2386	2482	2579	2534	2489	2445	2400
MALE	15	1046	1131	1217	1302	1388	1473	1558	1644	1729	1815	1900	1947	1993	2040	2086
MALE	20	931	983	1035	1087	1139	1191	1242	1294	1346	1398	1450	1555	1661	1766	1871
MALE	25	1321	1393	1464	1536	1607	1679	1751	1822	1894	1965	2037	2120	2203	2286	2369
MALE	30	1400	1456	1513	1569	1625	1682	1738	1794	1850	1907	1963	1995	2028	2060	2093
MALE	35	1147	1180	1213	1247	1280	1313	1346	1379	1413	1446	1479	1509	1538	1568	1597
MALE	40	1042	1067	1092	1118	1143	1168	1193	1218	1244	1269	1294	1311	1328	1346	1363
MALE	45	908	934	959	985	1010	1036	1061	1087	1112	1138	1163	1174	1186	1197	1209
MALE	50	835	858	882	905	928	952	975	998	1021	1045	1068	1075	1081	1088	1094
MALE	55	686	704	722	740	758	776	794	812	830	848	866	886	905	925	944
MALE	60	616	633	650	667	684	701	718	735	752	769	786	797	808	819	830
MALE	65	530	534	538	542	546	550	553	557	561	565	569	578	586	595	603
MALE	70	407	413	419	425	431	437	442	448	454	460	466	471	476	480	485
MALE	75	230	242	253	265	276	288	300	311	323	334	346	351	356	361	366
MALE	80	119	130	140	151	161	172	182	193	203	214	224	225	225	226	226
MALE	85	83	88	93	98	103	108	113	118	123	128	133	137	141	145	149
TOTAL(M)		17513	18150	18786	19425	20057	20698	21329	21964	22600	23239	23873	24069	24262	24460	24652
TOTAL		39013	40377	41736	43106	44460	45830	47182	48541	49906	51270	52629	53013	53392	53779	54158

APPENDIX B: POPULATIONS 1930-1990

Table 1D

Rochester Corrected

		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	E	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
FEMALE	0	482	479	477	475	473	471	476	482	487	492	498	503	508	513	519	524
FEMALE	1	1784	1748	1713	1678	1643	1608	1694	1780	1867	1953	2039	2125	2211	2298	2384	2470
FEMALE	5	2337	2252	2166	2081	1995	1910	1982	2054	2126	2198	2270	2341	2413	2485	2557	2629
FEMALE	10	2259	2213	2167	2120	2074	2028	2041	2055	2068	2082	2095	2108	2122	2135	2149	2162
FEMALE	15	2590	2602	2615	2628	2641	2654	2605	2555	2506	2456	2407	2358	2308	2259	2209	2160
FEMALE	20	3515	3588	3662	3736	3809	3883	3774	3665	3557	3448	3339	3230	3121	3013	2904	2795
FEMALE	25	2786	2854	2922	2990	3058	3126	3204	3282	3361	3439	3517	3595	3673	3752	3830	3908
FEMALE	30	2202	2256	2311	2365	2420	2474	2619	2764	2908	3053	3198	3343	3488	3632	3777	3922
FEMALE	35	1629	1675	1721	1767	1813	1859	1972	2085	2197	2310	2423	2536	2649	2761	2874	2987
FEMALE	40	1474	1490	1506	1523	1539	1555	1643	1731	1819	1907	1996	2084	2172	2260	2348	2436
FEMALE	45	1299	1297	1295	1293	1291	1289	1348	1407	1466	1525	1584	1642	1701	1760	1819	1878
FEMALE	50	1258	1265	1272	1279	1286	1293	1317	1342	1366	1391	1415	1439	1464	1488	1513	1537
FEMALE	55	1225	1224	1223	1222	1222	1221	1231	1240	1250	1260	1270	1279	1289	1299	1308	1318
FEMALE	60	1087	1088	1089	1091	1092	1093	1108	1124	1139	1154	1170	1185	1200	1215	1231	1246
FEMALE	65	1006	1012	1019	1026	1033	1040	1052	1063	1075	1087	1099	1110	1122	1134	1145	1157
FEMALE	70	937	953	968	984	999	1015	1019	1022	1026	1030	1034	1037	1041	1045	1048	1052
FEMALE	75	779	794	810	826	841	857	872	886	901	915	930	944	959	973	988	1002
FEMALE	80	561	578	595	613	630	647	667	686	706	725	745	765	784	804	823	843
FEMALE	85	486	510	534	557	581	605	641	677	713	749	785	821	857	893	929	965
TOTAL(F)		29696	29878	30065	30254	30440	30628	31265	31900	32538	33174	33814	34445	35082	35719	36355	36991
MALE	0	548	541	535	528	522	515	522	530	537	545	552	559	567	574	582	589
MALE	1	1852	1814	1777	1739	1702	1664	1752	1840	1929	2017	2105	2193	2281	2370	2458	2546
MALE	5	2421	2319	2217	2116	2014	1912	2008	2103	2199	2294	2390	2485	2581	2676	2772	2867
MALE	10	2355	2310	2265	2221	2176	2131	2147	2163	2179	2195	2212	2228	2244	2260	2276	2292
MALE	15	2133	2180	2226	2273	2319	2366	2327	2288	2249	2210	2171	2131	2092	2053	2014	1975
MALE	20	1977	2082	2187	2292	2398	2503	2479	2455	2431	2407	2383	2359	2335	2311	2287	2263
MALE	25	2453	2536	2619	2702	2785	2868	2939	3009	3080	3150	3221	3291	3362	3432	3503	3573
MALE	30	2125	2157	2190	2222	2255	2287	2427	2567	2707	2847	2988	3128	3268	3408	3548	3688
MALE	35	1627	1656	1686	1715	1745	1774	1881	1987	2094	2201	2308	2414	2521	2628	2734	2841
MALE	40	1380	1397	1414	1432	1449	1466	1537	1609	1680	1752	1823	1894	1966	2037	2109	2180
MALE	45	1220	1231	1243	1254	1266	1277	1322	1367	1412	1457	1502	1546	1591	1636	1681	1726
MALE	50	1101	1108	1114	1121	1127	1134	1167	1200	1234	1267	1300	1333	1366	1400	1433	1466
MALE	55	964	984	1003	1023	1042	1062	1084	1105	1127	1148	1170	1192	1213	1235	1256	1278
MALE	60	841	852	863	874	885	896	908	920	932	944	956	967	979	991	1003	1015
MALE	65	612	620	629	637	646	654	680	707	733	759	786	812	838	864	891	917
MALE	70	490	495	500	504	509	514	533	552	571	590	609	627	646	665	684	703
MALE	75	371	375	380	385	390	395	406	417	428	439	450	461	472	483	494	505
MALE	80	227	227	228	228	229	229	237	245	253	261	269	277	285	293	301	309
MALE	85	153	156	160	164	168	172	182	192	202	212	222	231	241	251	261	271
TOTAL(M)		24850	25040	25236	25430	25627	25819	26538	27256	27977	28695	29417	30128	30848	31567	32287	33004
TOTAL		54546	54918	55301	55684	56067	56447	57803	59156	60515	61869	63231	64573	65930	67286	68642	69995

APPENDIX B: POPULATIONS 1930-1990

Table 2A

Olmsted Total Corrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
S	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	325	324	323	321	320	319	318	317	315	314	313	338	364	389	415
FEMALE	1	1215	1226	1236	1247	1257	1268	1279	1289	1300	1310	1321	1402	1484	1565	1646
FEMALE	5	1585	1588	1590	1593	1595	1598	1600	1603	1605	1608	1610	1642	1674	1706	1738
FEMALE	10	1484	1497	1511	1524	1538	1551	1564	1578	1591	1605	1618	1613	1608	1604	1599
FEMALE	15	1583	1617	1650	1684	1717	1751	1785	1818	1852	1885	1919	1923	1927	1931	1935
FEMALE	20	1980	2031	2081	2132	2182	2233	2284	2334	2385	2435	2486	2475	2465	2454	2443
FEMALE	25	1637	1686	1736	1785	1835	1884	1933	1983	2032	2082	2131	2122	2113	2104	2095
FEMALE	30	1438	1476	1514	1552	1590	1628	1665	1703	1741	1779	1817	1815	1813	1811	1809
FEMALE	35	1187	1216	1245	1273	1302	1331	1360	1389	1417	1446	1475	1495	1514	1534	1553
FEMALE	40	1142	1169	1196	1223	1250	1278	1305	1332	1359	1386	1413	1426	1440	1453	1466
FEMALE	45	928	960	992	1024	1056	1088	1120	1152	1184	1216	1248	1269	1290	1310	1331
FEMALE	50	745	772	799	827	854	881	908	935	963	990	1017	1051	1085	1119	1153
FEMALE	55	640	664	688	712	736	761	785	809	833	857	881	909	936	964	991
FEMALE	60	514	532	550	568	586	604	621	639	657	675	693	716	738	761	783
FEMALE	65	401	418	435	452	469	486	503	520	537	554	571	595	618	642	665
FEMALE	70	323	334	346	357	368	380	391	402	413	425	436	450	464	478	492
FEMALE	75	133	142	150	159	168	177	185	194	203	211	220	237	254	271	288
FEMALE	80	85	92	98	105	112	119	125	132	139	145	152	161	170	178	187
FEMALE	85	61	69	77	84	92	100	108	116	123	131	139	140	141	142	143
TOTAL(F)		17406	17813	18217	18622	19027	19437	19839	20245	20649	21054	21460	21779	22098	22416	22732
MALE	0	308	312	316	320	324	329	333	337	341	345	349	375	400	426	451
MALE	1	1281	1305	1330	1354	1378	1403	1427	1451	1475	1500	1524	1590	1656	1723	1789
MALE	5	1652	1650	1648	1647	1645	1643	1641	1639	1638	1636	1634	1675	1716	1757	1798
MALE	10	1533	1544	1556	1567	1579	1590	1601	1613	1624	1636	1647	1659	1671	1683	1695
MALE	15	1406	1432	1458	1484	1510	1537	1563	1589	1615	1641	1667	1650	1632	1615	1598
MALE	20	1299	1336	1373	1410	1447	1484	1521	1558	1595	1632	1669	1642	1614	1587	1560
MALE	25	1303	1342	1381	1420	1459	1498	1536	1575	1614	1653	1692	1698	1705	1711	1718
MALE	30	1318	1345	1373	1400	1427	1455	1482	1509	1536	1564	1591	1606	1621	1636	1651
MALE	35	1248	1263	1279	1294	1309	1325	1340	1355	1370	1386	1401	1406	1411	1416	1421
MALE	40	1093	1114	1135	1156	1177	1198	1218	1239	1260	1281	1302	1311	1321	1330	1340
MALE	45	897	933	970	1006	1042	1079	1115	1151	1187	1224	1260	1258	1256	1254	1252
MALE	50	772	799	825	852	878	905	931	958	984	1011	1037	1054	1072	1089	1106
MALE	55	658	677	695	714	732	751	769	788	806	825	843	866	889	911	934
MALE	60	526	541	555	570	584	599	614	628	643	657	672	694	717	739	762
MALE	65	441	450	459	468	477	486	495	504	513	522	531	547	563	579	595
MALE	70	339	347	356	364	372	381	389	397	405	414	422	427	432	438	443
MALE	75	153	161	169	176	184	192	200	208	215	223	231	240	250	259	269
MALE	80	87	92	97	103	108	113	118	123	129	134	139	142	146	149	152
MALE	85	61	64	68	71	75	78	81	85	88	92	95	95	95	95	95
TOTAL(M)		16375	16707	17043	17376	17707	18046	18374	18707	19038	19376	19706	19935	20167	20397	20629
TOTAL		33781	34520	35260	35998	36734	37483	38213	38952	39687	40430	41166	41714	42265	42813	43361

APPENDIX B: POPULATIONS 1930-1990

Table 2B

Olmsted Total Corrected

SEX	AGE GROUP	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
FEMALE	0	440	465	491	516	542	567	600	633	665	698	731	764	797	829	862
FEMALE	1	1728	1809	1890	1971	2053	2134	2263	2393	2522	2651	2781	2910	3039	3168	3298
FEMALE	5	1770	1801	1833	1865	1897	1929	2082	2235	2387	2540	2693	2846	2999	3151	3304
FEMALE	10	1594	1589	1584	1580	1575	1570	1697	1824	1951	2078	2205	2332	2459	2586	2713
FEMALE	15	1939	1942	1946	1950	1954	1958	2039	2120	2200	2281	2362	2443	2524	2604	2685
FEMALE	20	2433	2422	2411	2400	2390	2379	2437	2496	2554	2613	2671	2729	2788	2846	2905
FEMALE	25	2086	2077	2068	2059	2050	2041	2071	2100	2130	2159	2189	2218	2248	2277	2307
FEMALE	30	1808	1806	1804	1802	1800	1798	1837	1877	1916	1956	1995	2034	2074	2113	2153
FEMALE	35	1573	1593	1612	1632	1651	1671	1703	1736	1768	1801	1833	1865	1898	1930	1963
FEMALE	40	1480	1493	1506	1519	1533	1546	1569	1592	1614	1637	1660	1683	1706	1728	1751
FEMALE	45	1352	1373	1394	1414	1435	1456	1484	1511	1539	1566	1594	1622	1649	1677	1704
FEMALE	50	1188	1222	1256	1290	1324	1358	1373	1389	1404	1419	1435	1450	1465	1480	1496
FEMALE	55	1019	1046	1074	1101	1129	1156	1181	1207	1232	1258	1283	1308	1334	1359	1385
FEMALE	60	806	828	851	873	896	918	954	989	1025	1061	1097	1132	1168	1204	1239
FEMALE	65	689	713	736	760	783	807	828	849	870	891	913	934	955	976	997
FEMALE	70	506	520	534	548	562	576	600	623	647	670	694	717	741	764	788
FEMALE	75	305	321	338	355	372	389	411	434	456	478	501	523	545	567	590
FEMALE	80	196	205	214	222	231	240	252	263	275	286	298	310	321	333	344
FEMALE	85	144	145	146	147	148	149	157	166	174	183	191	199	208	216	225
TOTAL(F)		23056	23370	23688	24004	24325	24642	25538	26437	27329	28226	29126	30019	30918	31808	32709
MALE	0	477	502	528	553	579	604	644	684	724	764	804	843	883	923	963
MALE	1	1855	1921	1987	2054	2120	2186	2322	2458	2594	2730	2866	3001	3137	3273	3409
MALE	5	1840	1881	1922	1963	2004	2045	2209	2373	2537	2701	2865	3029	3193	3357	3521
MALE	10	1707	1718	1730	1742	1754	1766	1883	2000	2117	2234	2352	2469	2586	2703	2820
MALE	15	1581	1563	1546	1529	1511	1494	1542	1591	1639	1688	1736	1784	1833	1881	1930
MALE	20	1533	1505	1478	1451	1423	1396	1425	1453	1482	1510	1539	1567	1596	1624	1653
MALE	25	1724	1730	1737	1743	1750	1756	1800	1843	1887	1931	1975	2018	2062	2106	2149
MALE	30	1666	1680	1695	1710	1725	1740	1787	1834	1881	1928	1976	2023	2070	2117	2164
MALE	35	1426	1431	1436	1441	1446	1451	1500	1549	1599	1648	1697	1746	1795	1845	1894
MALE	40	1349	1358	1368	1377	1387	1396	1431	1467	1502	1538	1573	1608	1644	1679	1715
MALE	45	1250	1248	1246	1244	1242	1240	1274	1307	1341	1374	1408	1441	1475	1508	1542
MALE	50	1124	1141	1158	1175	1193	1210	1227	1244	1261	1278	1295	1312	1329	1346	1363
MALE	55	957	980	1003	1025	1048	1071	1080	1088	1097	1105	1114	1123	1131	1140	1148
MALE	60	784	806	829	851	874	896	912	928	943	959	975	991	1007	1022	1038
MALE	65	611	627	643	659	675	691	706	722	737	753	768	783	799	814	830
MALE	70	448	453	458	464	469	474	489	505	520	535	551	566	581	596	612
MALE	75	278	287	297	306	316	325	334	344	353	362	372	381	390	399	409
MALE	80	156	159	162	165	169	172	176	180	185	189	193	197	201	206	210
MALE	85	95	95	95	95	95	95	100	105	110	115	120	124	129	134	139
TOTAL(M)		20861	21085	21318	21547	21780	22008	22841	23675	24509	25342	26179	27006	27841	28673	29509
TOTAL		43917	44455	45006	45551	46105	46650	48379	50112	51838	53568	55305	57025	58759	60481	62218

APPENDIX B: POPULATIONS 1930-1990

Table 2C

Olmsted Total Corrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
S	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	895	888	881	873	866	859	852	845	837	830	823	819	815	811	807
FEMALE	1	3427	3410	3392	3375	3357	3340	3322	3305	3287	3270	3252	3197	3142	3087	3032
FEMALE	5	3457	3592	3728	3863	3998	4134	4269	4404	4539	4675	4810	4674	4538	4402	4266
FEMALE	10	2840	2986	3133	3279	3426	3572	3718	3865	4011	4158	4304	4243	4182	4121	4060
FEMALE	15	2766	2865	2963	3062	3161	3260	3358	3457	3556	3654	3753	3816	3878	3941	4003
FEMALE	20	2963	3086	3210	3333	3456	3580	3703	3826	3949	4073	4196	4287	4378	4469	4560
FEMALE	25	2336	2472	2608	2743	2879	3015	3151	3287	3422	3558	3694	3779	3864	3948	4033
FEMALE	30	2192	2273	2354	2435	2516	2597	2678	2759	2840	2921	3002	3088	3174	3260	3346
FEMALE	35	1995	2022	2049	2076	2103	2130	2157	2184	2211	2238	2265	2357	2450	2542	2635
FEMALE	40	1774	1812	1850	1888	1926	1965	2003	2041	2079	2117	2155	2207	2258	2310	2362
FEMALE	45	1732	1761	1790	1818	1847	1876	1905	1934	1962	1991	2020	2029	2038	2047	2056
FEMALE	50	1511	1540	1569	1597	1626	1655	1684	1713	1741	1770	1799	1820	1840	1861	1881
FEMALE	55	1410	1443	1476	1509	1542	1575	1607	1640	1673	1706	1739	1754	1768	1783	1797
FEMALE	60	1275	1299	1322	1346	1370	1394	1417	1441	1465	1488	1512	1521	1529	1538	1546
FEMALE	65	1018	1047	1076	1105	1134	1164	1193	1222	1251	1280	1309	1323	1336	1350	1364
FEMALE	70	811	842	874	905	937	968	999	1031	1062	1094	1125	1145	1166	1186	1206
FEMALE	75	612	638	664	691	717	743	769	795	822	848	874	897	919	942	965
FEMALE	80	356	378	400	422	444	466	488	510	532	554	576	598	620	642	664
FEMALE	85	233	253	274	294	314	335	355	375	395	416	436	469	501	534	567
TOTAL(F)		33603	34607	35613	36614	37619	38628	39628	40634	41634	42641	43644	44023	44396	44774	45150
MALE	0	1003	996	989	982	975	969	962	955	948	941	934	925	916	908	899
MALE	1	3545	3536	3527	3519	3510	3501	3492	3483	3475	3466	3457	3397	3336	3276	3215
MALE	5	3685	3824	3963	4102	4241	4380	4519	4658	4797	4936	5075	4917	4759	4602	4444
MALE	10	2937	3100	3263	3426	3589	3753	3916	4079	4242	4405	4568	4503	4437	4372	4306
MALE	15	1978	2112	2246	2380	2514	2648	2781	2915	3049	3183	3317	3411	3506	3600	3694
MALE	20	1681	1731	1781	1830	1880	1930	1980	2030	2079	2129	2179	2345	2510	2676	2842
MALE	25	2193	2294	2395	2496	2597	2699	2800	2901	3002	3103	3204	3308	3411	3515	3619
MALE	30	2211	2297	2384	2470	2557	2643	2729	2816	2902	2989	3075	3125	3175	3225	3275
MALE	35	1943	1989	2034	2080	2125	2171	2216	2262	2307	2353	2398	2468	2538	2609	2679
MALE	40	1750	1785	1820	1856	1891	1926	1961	1996	2032	2067	2102	2156	2209	2263	2317
MALE	45	1575	1610	1644	1679	1713	1748	1782	1817	1851	1886	1920	1949	1979	2008	2037
MALE	50	1380	1410	1440	1469	1499	1529	1559	1589	1618	1648	1678	1702	1727	1751	1776
MALE	55	1157	1186	1215	1245	1274	1303	1332	1361	1391	1420	1449	1481	1512	1544	1576
MALE	60	1054	1071	1088	1104	1121	1138	1155	1172	1188	1205	1222	1239	1257	1274	1292
MALE	65	845	854	863	872	881	890	898	907	916	925	934	951	968	985	1002
MALE	70	627	639	651	663	675	687	698	710	722	734	746	751	756	761	766
MALE	75	418	428	438	448	458	468	477	487	497	507	517	525	532	540	548
MALE	80	214	226	237	249	260	272	284	295	307	318	330	333	336	340	343
MALE	85	144	150	156	163	169	175	181	187	194	200	206	209	212	215	218
TOTAL(M)		30340	31238	32134	33033	33929	34830	35722	36620	37517	38415	39311	39695	40076	40464	40848
TOTAL		63943	65845	67747	69647	71548	73458	75350	77254	79151	81056	82955	83718	84472	85238	85998

APPENDIX B: POPULATIONS 1930-1990

Table 2D

Olmsted Total Corrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
S	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
FEMALE	0	804	800	796	792	788	784	780	777	773	769	766	762	758	754	751	747
FEMALE	1	2977	2921	2866	2811	2756	2701	2808	2914	3021	3127	3234	3341	3447	3554	3660	3767
FEMALE	5	4131	3995	3859	3723	3587	3451	3532	3613	3694	3775	3856	3936	4017	4098	4179	4260
FEMALE	10	4000	3939	3878	3817	3756	3695	3689	3683	3677	3671	3665	3659	3653	3647	3641	3635
FEMALE	15	4066	4129	4191	4254	4316	4379	4287	4196	4104	4013	3921	3829	3738	3646	3555	3463
FEMALE	20	4652	4743	4834	4925	5016	5107	4965	4824	4682	4541	4399	4257	4116	3974	3833	3691
FEMALE	25	4118	4203	4288	4372	4457	4542	4619	4696	4773	4850	4927	5003	5080	5157	5234	5311
FEMALE	30	3432	3518	3604	3690	3776	3862	4035	4208	4382	4555	4728	4901	5074	5248	5421	5594
FEMALE	35	2727	2819	2912	3004	3097	3189	3322	3455	3587	3720	3853	3986	4119	4251	4384	4517
FEMALE	40	2414	2465	2517	2569	2620	2672	2783	2895	3006	3118	3229	3340	3452	3563	3675	3786
FEMALE	45	2066	2075	2084	2093	2102	2111	2213	2315	2418	2520	2622	2724	2826	2929	3031	3133
FEMALE	50	1902	1922	1943	1963	1984	2004	2053	2103	2152	2202	2251	2300	2350	2399	2449	2498
FEMALE	55	1812	1827	1841	1856	1870	1885	1896	1906	1917	1927	1938	1948	1959	1969	1980	1990
FEMALE	60	1555	1564	1572	1581	1589	1598	1620	1642	1664	1686	1708	1729	1751	1773	1795	1817
FEMALE	65	1378	1391	1405	1419	1432	1446	1468	1490	1513	1535	1557	1579	1601	1624	1646	1668
FEMALE	70	1227	1247	1267	1287	1308	1328	1341	1353	1366	1378	1391	1404	1416	1429	1441	1454
FEMALE	75	988	1010	1033	1056	1078	1101	1119	1137	1155	1173	1191	1208	1226	1244	1262	1280
FEMALE	80	686	708	730	752	774	796	820	844	869	893	917	941	965	990	1014	1038
FEMALE	85	600	632	665	698	730	763	800	838	875	912	950	987	1024	1061	1099	1136
TOTAL(F)		45535	45908	46285	46662	47036	47414	48150	48889	49628	50365	51103	51834	52572	53310	54050	54785
MALE	0	890	881	872	864	855	846	850	853	857	861	865	868	872	876	879	883
MALE	1	3155	3094	3034	2973	2913	2852	2943	3034	3125	3216	3308	3399	3490	3581	3672	3763
MALE	5	4286	4128	3970	3813	3655	3497	3605	3714	3822	3931	4039	4147	4256	4364	4473	4581
MALE	10	4241	4176	4110	4045	3979	3914	3909	3905	3900	3895	3891	3886	3881	3876	3872	3867
MALE	15	3789	3883	3977	4071	4166	4260	4170	4081	3991	3902	3812	3722	3633	3543	3454	3364
MALE	20	3008	3173	3339	3505	3670	3836	3773	3709	3646	3583	3520	3456	3393	3330	3266	3203
MALE	25	3723	3826	3930	4034	4137	4241	4307	4373	4438	4504	4570	4636	4702	4767	4833	4899
MALE	30	3326	3376	3426	3476	3526	3576	3751	3926	4101	4276	4452	4627	4802	4977	5152	5327
MALE	35	2749	2819	2889	2960	3030	3100	3225	3350	3474	3599	3724	3849	3974	4098	4223	4348
MALE	40	2371	2424	2478	2532	2585	2639	2724	2809	2895	2980	3065	3150	3235	3321	3406	3491
MALE	45	2067	2096	2125	2154	2184	2213	2292	2372	2451	2531	2610	2689	2769	2848	2928	3007
MALE	50	1800	1824	1849	1873	1898	1922	1978	2033	2089	2145	2201	2256	2312	2368	2423	2479
MALE	55	1608	1639	1671	1703	1734	1766	1797	1828	1859	1890	1922	1953	1984	2015	2046	2077
MALE	60	1309	1326	1344	1361	1379	1396	1421	1446	1470	1495	1520	1545	1570	1594	1619	1644
MALE	65	1019	1035	1052	1069	1086	1103	1134	1165	1197	1228	1259	1290	1321	1353	1384	1415
MALE	70	772	777	782	787	792	797	821	846	870	894	919	943	967	991	1016	1040
MALE	75	556	563	571	579	586	594	609	625	640	656	671	686	702	717	733	748
MALE	80	346	349	352	356	359	362	370	378	386	394	403	411	419	427	435	443
MALE	85	221	223	226	229	232	235	247	259	271	283	296	308	320	332	344	356
TOTAL(M)		41236	41612	41997	42384	42766	43149	43926	44706	45482	46263	47047	47821	48602	49378	50158	50935
TOTAL		86771	87520	88282	89046	89802	90563	92076	93595	95110	96628	98150	99655	101174	102688	104208	105720

APPENDIX B: POPULATIONS 1930-1990

Table 3A

Olmsted Balance Corrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
S	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	143	143	144	143	144	144	144	145	144	145	145	155	165	175	185
FEMALE	1	604	604	604	604	604	604	604	604	604	604	604	639	676	711	747
FEMALE	5	814	810	804	800	795	790	785	781	776	771	766	782	798	815	831
FEMALE	10	749	749	751	751	753	753	753	755	755	757	757	761	764	769	773
FEMALE	15	605	619	631	645	658	671	685	698	712	724	738	723	707	692	677
FEMALE	20	462	479	496	513	530	547	564	581	598	615	632	627	623	618	613
FEMALE	25	475	481	488	494	501	506	512	519	525	532	538	551	565	578	592
FEMALE	30	493	494	496	497	499	500	500	502	503	505	506	518	529	541	553
FEMALE	35	414	420	426	431	437	443	450	456	461	467	473	484	494	504	514
FEMALE	40	432	438	444	450	456	462	468	474	480	486	492	494	498	500	503
FEMALE	45	350	358	367	375	384	392	400	409	417	426	434	437	439	441	444
FEMALE	50	315	323	331	340	348	355	363	371	380	388	396	402	408	414	420
FEMALE	55	270	273	276	279	282	285	288	291	294	297	300	305	310	315	320
FEMALE	60	248	251	254	257	260	263	265	268	271	274	277	278	278	280	280
FEMALE	65	192	194	196	199	201	203	205	207	210	212	214	217	218	221	222
FEMALE	70	144	145	148	149	151	153	155	156	158	160	162	165	168	172	175
FEMALE	75	60	63	65	68	71	74	77	80	83	85	88	91	95	98	102
FEMALE	80	46	49	50	53	55	58	60	62	65	66	69	70	71	70	71
FEMALE	85	21	25	30	33	38	42	46	51	54	59	63	62	61	61	60
TOTAL(F)		6837	6918	7001	7081	7167	7245	7324	7410	7490	7573	7654	7761	7867	7975	8082
MALE	0	162	161	160	160	159	159	158	157	157	156	155	164	173	182	191
MALE	1	650	656	664	670	676	683	690	696	702	710	716	745	775	805	835
MALE	5	848	843	838	833	828	823	818	813	808	803	798	825	852	879	906
MALE	10	823	822	823	822	822	821	821	821	820	821	820	830	841	851	862
MALE	15	753	758	763	767	772	778	783	788	792	797	802	796	789	783	777
MALE	20	597	611	626	640	654	668	683	697	711	726	740	725	709	693	678
MALE	25	503	516	528	541	554	566	578	591	604	616	629	631	634	635	638
MALE	30	551	551	552	551	551	552	552	552	551	552	552	564	575	587	598
MALE	35	539	541	545	547	549	552	555	557	559	563	565	572	578	585	592
MALE	40	500	502	504	505	507	509	510	512	513	515	517	521	527	531	536
MALE	45	445	454	464	473	482	492	502	511	520	530	539	537	535	532	530
MALE	50	384	392	400	408	415	423	431	439	446	455	462	465	470	473	476
MALE	55	360	365	368	373	376	381	385	389	393	397	401	404	408	410	414
MALE	60	304	308	311	315	318	322	327	330	334	337	341	341	342	342	343
MALE	65	235	239	242	246	250	253	257	261	265	268	272	276	280	283	287
MALE	70	191	194	198	201	204	207	210	213	216	220	223	221	219	218	216
MALE	75	80	82	85	86	89	91	94	96	98	100	103	108	114	119	125
MALE	80	46	47	49	51	52	53	55	56	58	60	61	63	66	67	69
MALE	85	42	44	46	48	50	52	54	56	58	60	62	61	59	58	56
TOTAL(M)		8013	8086	8166	8237	8308	8385	8463	8535	8605	8686	8758	8849	8946	9033	9129
TOTAL		14850	15004	15167	15318	15475	15630	15787	15945	16095	16259	16412	16610	16813	17008	17211

APPENDIX B: POPULATIONS 1930-1990

Table 3B

Olmsted Balance Corrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
S	$\bar{G}$	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
FEMALE	0	195	205	215	225	235	245	259	274	287	302	316	331	345	359	373
FEMALE	1	783	818	854	889	926	961	1016	1073	1128	1183	1239	1295	1350	1405	1462
FEMALE	5	847	862	878	895	911	927	987	1047	1106	1166	1226	1286	1346	1405	1465
FEMALE	10	776	780	784	789	792	796	842	888	934	980	1025	1071	1117	1163	1209
FEMALE	15	661	645	630	615	599	584	607	631	653	676	699	723	746	768	792
FEMALE	20	608	603	598	593	589	584	610	638	664	692	718	745	772	799	826
FEMALE	25	605	619	632	646	659	673	690	706	724	740	757	773	790	807	824
FEMALE	30	565	577	589	601	612	624	643	663	682	702	721	740	760	779	799
FEMALE	35	525	536	546	556	566	577	595	614	631	650	668	686	705	722	741
FEMALE	40	506	509	511	514	517	520	533	545	557	569	582	595	607	619	631
FEMALE	45	446	449	452	454	456	459	471	483	495	507	519	532	543	556	567
FEMALE	50	427	434	440	446	452	458	461	465	468	471	475	478	481	484	488
FEMALE	55	325	329	335	339	345	349	357	366	373	382	390	398	407	414	423
FEMALE	60	281	281	282	283	284	284	293	301	311	320	329	337	346	356	364
FEMALE	65	225	228	229	232	233	236	239	242	245	248	252	255	258	261	264
FEMALE	70	178	181	184	188	191	194	198	201	205	208	211	214	218	221	225
FEMALE	75	105	108	111	115	118	122	126	131	135	139	143	147	151	155	160
FEMALE	80	72	73	74	73	74	75	78	79	82	83	86	89	90	93	94
FEMALE	85	59	58	57	57	56	55	55	56	56	57	56	56	57	57	58
TOTAL(F)		8189	8295	8401	8510	8615	8723	9060	9403	9736	10075	10412	10751	11089	11423	11765
MALE	0	200	209	218	227	236	245	263	281	300	318	336	353	371	390	408
MALE	1	864	894	923	954	983	1013	1067	1120	1174	1227	1281	1334	1387	1441	1494
MALE	5	934	962	989	1016	1043	1070	1129	1188	1247	1306	1365	1424	1483	1542	1601
MALE	10	872	882	892	903	913	924	964	1004	1044	1084	1124	1164	1204	1244	1284
MALE	15	770	763	757	751	744	738	757	777	796	816	835	854	874	893	913
MALE	20	663	647	632	616	600	585	602	618	635	651	668	684	701	717	734
MALE	25	640	642	645	646	649	651	673	695	717	740	762	783	806	828	850
MALE	30	610	621	632	644	655	667	681	696	710	724	739	754	768	782	797
MALE	35	598	605	612	619	625	632	648	664	682	698	714	730	746	764	780
MALE	40	540	545	550	554	560	564	578	593	607	622	636	650	665	679	694
MALE	45	528	526	524	521	519	517	532	547	562	577	592	607	622	637	652
MALE	50	480	484	487	490	495	498	503	507	512	517	521	526	531	536	540
MALE	55	417	421	424	427	430	434	438	441	445	448	452	457	460	464	467
MALE	60	343	343	344	344	345	345	354	364	372	382	391	401	410	419	428
MALE	65	291	295	299	302	306	310	310	311	311	312	312	313	314	314	315
MALE	70	214	212	210	209	207	205	206	208	210	211	213	214	215	217	219
MALE	75	130	136	142	147	153	158	161	164	167	170	173	176	179	182	185
MALE	80	72	74	76	77	80	82	83	84	86	87	88	90	91	93	94
MALE	85	55	54	52	51	49	48	49	51	52	54	55	55	57	58	60
TOTAL(M)		9221	9315	9408	9498	9592	9686	9998	10313	10629	10944	11257	11569	11884	12200	12515
TOTAL		17410	17610	17809	18008	18207	18409	19058	19716	20365	21019	21669	22320	22973	23623	24280

APPENDIX B: POPULATIONS 1930-1990

Table 3C

Olmsted Balance Corrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
S	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	388	382	377	370	365	359	354	348	342	336	331	329	327	325	323
FEMALE	1	1517	1495	1472	1450	1427	1405	1383	1361	1338	1316	1293	1273	1253	1233	1213
FEMALE	5	1525	1577	1630	1681	1733	1786	1838	1890	1941	1994	2046	1995	1945	1894	1844
FEMALE	10	1255	1310	1367	1422	1479	1534	1590	1646	1702	1758	1814	1799	1784	1770	1755
FEMALE	15	815	857	897	939	980	1022	1063	1104	1146	1186	1228	1278	1327	1377	1426
FEMALE	20	853	872	893	912	932	952	971	991	1010	1031	1050	1067	1085	1102	1119
FEMALE	25	840	881	922	962	1003	1044	1085	1126	1166	1207	1248	1265	1282	1298	1315
FEMALE	30	818	843	869	894	920	945	970	996	1021	1047	1072	1104	1135	1167	1198
FEMALE	35	759	770	781	791	802	813	824	835	845	856	867	913	960	1006	1053
FEMALE	40	644	656	667	679	691	703	715	727	739	750	762	798	833	868	904
FEMALE	45	580	593	607	619	632	645	659	672	684	698	711	722	733	744	755
FEMALE	50	491	500	508	516	525	533	542	551	559	567	576	590	603	617	630
FEMALE	55	431	439	447	455	463	471	479	487	495	503	511	527	541	557	572
FEMALE	60	373	379	384	390	396	402	408	414	420	425	431	439	446	453	460
FEMALE	65	267	274	281	288	295	303	310	317	324	331	338	345	351	358	365
FEMALE	70	228	231	236	239	244	247	250	255	258	263	266	270	276	280	285
FEMALE	75	164	165	166	167	168	169	170	171	172	173	174	181	188	195	202
FEMALE	80	97	97	98	98	99	99	99	100	100	101	101	106	111	115	120
FEMALE	85	58	59	61	61	62	64	65	66	66	68	69	78	86	96	105
TOTAL(F)		12103	12380	12663	12933	13216	13496	13775	14057	14328	14610	14888	15079	15266	15455	15644
MALE	0	426	419	411	404	397	390	383	376	369	361	354	351	349	347	345
MALE	1	1548	1535	1521	1509	1496	1482	1469	1456	1444	1430	1417	1395	1371	1349	1325
MALE	5	1660	1708	1757	1805	1854	1902	1951	1999	2048	2096	2145	2089	2033	1977	1921
MALE	10	1324	1390	1457	1523	1590	1657	1723	1790	1856	1923	1989	1969	1948	1927	1906
MALE	15	932	981	1029	1078	1126	1175	1223	1271	1320	1368	1417	1464	1513	1560	1608
MALE	20	750	748	746	743	741	739	738	736	733	731	729	790	849	910	971
MALE	25	872	901	931	960	990	1020	1049	1079	1108	1138	1167	1188	1208	1229	1250
MALE	30	811	841	871	901	932	961	991	1022	1052	1082	1112	1130	1147	1165	1182
MALE	35	796	809	821	833	845	858	870	883	894	907	919	959	1000	1041	1082
MALE	40	708	718	728	738	748	758	768	778	788	798	808	845	881	917	954
MALE	45	667	676	685	694	703	712	721	730	739	748	757	775	793	811	828
MALE	50	545	552	558	564	571	577	584	591	597	603	610	627	646	663	682
MALE	55	471	482	493	505	516	527	538	549	561	572	583	595	607	619	632
MALE	60	438	438	438	437	437	437	437	437	436	436	436	442	449	455	462
MALE	65	315	320	325	330	335	340	345	350	355	360	365	373	382	390	399
MALE	70	220	226	232	238	244	250	256	262	268	274	280	280	280	281	281
MALE	75	188	186	185	183	182	180	177	176	174	173	171	174	176	179	182
MALE	80	95	96	97	98	99	100	102	102	104	104	106	108	111	114	117
MALE	85	61	62	63	65	66	67	68	69	71	72	73	72	71	70	69
TOTAL(M)		12827	13088	13348	13608	13872	14132	14393	14656	14917	15176	15438	15626	15814	16004	16196
TOTAL		24930	25468	26011	26541	27088	27628	28168	28713	29245	29786	30326	30705	31080	31459	31840

APPENDIX B: POPULATIONS 1930-1990

Table 3D

Olmsted Balance Corrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
S	$\bar{G}$	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
E	R	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
FEMALE	0	322	321	319	317	315	313	304	295	286	277	268	259	250	241	232	223
FEMALE	1	1193	1173	1153	1133	1113	1093	1114	1134	1154	1174	1195	1216	1236	1256	1276	1297
FEMALE	5	1794	1743	1693	1642	1592	1541	1550	1559	1568	1577	1586	1595	1604	1613	1622	1631
FEMALE	10	1741	1726	1711	1697	1682	1667	1648	1628	1609	1589	1570	1551	1531	1512	1492	1473
FEMALE	15	1476	1527	1576	1626	1675	1725	1682	1641	1598	1557	1514	1471	1430	1387	1346	1303
FEMALE	20	1137	1155	1172	1189	1207	1224	1191	1159	1125	1093	1060	1027	995	961	929	896
FEMALE	25	1332	1349	1366	1382	1399	1416	1415	1414	1412	1411	1410	1408	1407	1405	1404	1403
FEMALE	30	1230	1262	1293	1325	1356	1388	1416	1444	1474	1502	1530	1558	1586	1616	1644	1672
FEMALE	35	1098	1144	1191	1237	1284	1330	1350	1370	1390	1410	1430	1450	1470	1490	1510	1530
FEMALE	40	940	975	1011	1046	1081	1117	1140	1164	1187	1211	1233	1256	1280	1303	1327	1350
FEMALE	45	767	778	789	800	811	822	865	908	952	995	1038	1082	1125	1169	1212	1255
FEMALE	50	644	657	671	684	698	711	736	761	786	811	836	861	886	911	936	961
FEMALE	55	587	603	618	634	648	664	665	666	667	667	668	669	670	670	672	672
FEMALE	60	468	476	483	490	497	505	512	518	525	532	538	544	551	558	564	571
FEMALE	65	372	379	386	393	399	406	416	427	438	448	458	469	479	490	501	511
FEMALE	70	290	294	299	303	309	313	322	331	340	348	357	367	375	384	393	402
FEMALE	75	209	216	223	230	237	244	247	251	254	258	261	264	267	271	274	278
FEMALE	80	125	130	135	139	144	149	153	158	163	168	172	176	181	186	191	195
FEMALE	85	114	122	131	141	149	158	159	161	162	163	165	166	167	168	170	171
TOTAL (F)		15839	16030	16220	16408	16596	16786	16885	16989	17090	17191	17289	17389	17490	17591	17695	17794
MALE	0	342	340	337	336	333	331	328	323	320	316	313	309	305	302	297	294
MALE	1	1303	1280	1257	1234	1211	1188	1191	1194	1196	1199	1203	1206	1209	1211	1214	1217
MALE	5	1865	1809	1753	1697	1641	1585	1597	1611	1623	1637	1649	1662	1675	1688	1701	1714
MALE	10	1886	1866	1845	1824	1803	1783	1762	1742	1721	1700	1679	1658	1637	1616	1596	1575
MALE	15	1656	1703	1751	1798	1847	1894	1843	1793	1742	1692	1641	1591	1541	1490	1440	1389
MALE	20	1031	1091	1152	1213	1272	1333	1294	1254	1215	1176	1137	1097	1058	1019	979	940
MALE	25	1270	1290	1311	1332	1352	1373	1368	1364	1358	1354	1349	1345	1340	1335	1330	1326
MALE	30	1201	1219	1236	1254	1271	1289	1324	1359	1394	1429	1464	1499	1534	1569	1604	1639
MALE	35	1122	1163	1203	1245	1285	1326	1344	1363	1380	1398	1416	1435	1453	1470	1489	1507
MALE	40	991	1027	1064	1100	1136	1173	1187	1200	1215	1228	1242	1256	1269	1284	1297	1311
MALE	45	847	865	882	900	918	936	970	1005	1039	1074	1108	1143	1178	1212	1247	1281
MALE	50	699	716	735	752	771	788	811	833	855	878	901	923	946	968	990	1013
MALE	55	644	655	668	680	692	704	713	723	732	742	752	761	771	780	790	799
MALE	60	468	474	481	487	494	500	513	526	538	551	564	578	591	603	616	629
MALE	65	407	415	423	432	440	449	454	458	464	469	473	478	483	489	493	498
MALE	70	282	282	282	283	283	283	288	294	299	304	310	316	321	326	332	337
MALE	75	185	188	191	194	196	199	203	208	212	217	221	225	230	234	239	243
MALE	80	119	122	124	128	130	133	133	133	133	133	134	134	134	134	134	134
MALE	85	68	67	66	65	64	63	65	67	69	71	74	77	79	81	83	85
TOTAL (M)		16386	16572	16761	16954	17139	17330	17388	17450	17505	17568	17630	17693	17754	17811	17871	17931
TOTAL		32225	32602	32981	33362	33735	34116	34273	34439	34595	34759	34919	35082	35244	35402	35566	35725

APPENDIX B: POPULATIONS 1930-1990

Table 4A

Rochester Uncorrected

		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	E	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	182	181	179	178	176	175	174	172	171	169	168	183	199	214	230
FEMALE	1	611	622	632	643	653	664	675	685	696	706	717	763	808	854	899
FEMALE	5	773	780	787	794	801	809	816	823	830	837	844	860	876	892	908
FEMALE	10	736	749	761	774	786	799	812	824	837	849	862	853	844	836	827
FEMALE	15	989	1009	1029	1048	1068	1088	1108	1128	1147	1167	1187	1206	1226	1245	1264
FEMALE	20	1541	1576	1610	1645	1679	1714	1748	1783	1817	1852	1886	1879	1872	1865	1858
FEMALE	25	1219	1261	1302	1344	1386	1428	1469	1511	1553	1594	1636	1613	1590	1566	1543
FEMALE	30	1015	1049	1083	1117	1151	1186	1220	1254	1288	1322	1356	1344	1333	1321	1310
FEMALE	35	886	906	927	947	968	988	1008	1029	1049	1070	1090	1098	1106	1114	1122
FEMALE	40	826	845	864	883	902	921	939	958	977	996	1015	1023	1031	1039	1047
FEMALE	45	676	700	725	749	773	798	822	846	870	895	919	935	950	966	982
FEMALE	50	525	544	563	582	601	620	638	657	676	695	714	741	768	796	823
FEMALE	55	464	487	509	532	554	577	600	622	645	667	690	710	730	750	770
FEMALE	60	334	350	367	383	399	416	432	448	464	481	497	521	545	570	594
FEMALE	65	271	287	303	319	335	351	366	382	398	414	430	454	478	501	525
FEMALE	70	212	224	237	249	261	274	286	298	310	323	335	348	360	373	385
FEMALE	75	100	109	117	126	134	143	151	160	168	177	185	199	213	227	241
FEMALE	80	59	64	69	74	79	85	90	95	100	105	110	118	127	135	143
FEMALE	85	41	45	48	52	55	59	63	66	70	73	77	82	86	91	96
TOTAL(F)		11460	11788	12112	12439	12761	13095	13417	13741	14066	14392	14718	14930	15142	15355	15567
MALE	0	146	151	156	160	165	170	175	180	184	189	194	211	227	244	260
MALE	1	631	649	666	684	702	720	737	755	773	790	808	845	881	918	954
MALE	5	804	807	810	814	817	820	823	826	830	833	836	850	864	878	892
MALE	10	712	724	735	747	758	770	781	793	804	816	827	829	830	832	833
MALE	15	664	684	705	725	745	766	786	806	826	847	867	857	847	837	827
MALE	20	735	757	780	802	824	847	869	891	913	936	958	945	932	919	906
MALE	25	843	868	893	918	943	968	993	1018	1043	1068	1093	1097	1101	1105	1109
MALE	30	818	846	874	902	930	958	985	1013	1041	1069	1097	1099	1100	1102	1103
MALE	35	773	785	797	809	821	833	845	857	869	881	893	891	888	886	883
MALE	40	710	721	732	743	754	766	777	788	799	810	821	829	837	844	852
MALE	45	554	575	596	617	638	659	680	701	722	743	764	768	771	775	778
MALE	50	475	493	511	529	547	565	583	601	619	637	655	666	677	688	699
MALE	55	391	405	420	434	448	463	477	491	505	520	534	551	568	586	603
MALE	60	289	300	310	321	331	342	353	363	374	384	395	419	443	467	491
MALE	65	257	263	269	276	282	288	294	300	307	313	319	333	348	362	376
MALE	70	190	195	199	204	208	213	218	222	227	231	236	245	254	263	272
MALE	75	81	88	95	103	110	117	124	131	139	146	153	159	165	171	177
MALE	80	44	48	52	56	60	64	68	72	76	80	84	87	91	94	97
MALE	85	31	34	37	40	43	46	48	51	54	57	60	61	61	62	62
TOTAL(M)		9148	9393	9637	9884	10126	10375	10616	10859	11105	11350	11594	11742	11885	12033	12174
TOTAL		20608	21181	21749	22323	22887	23470	24033	24600	25171	25742	26312	26672	27027	27388	27741

APPENDIX B: POPULATIONS 1930-1990

Table 4B

Rochester Uncorrected

		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	E	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
FEMALE	0	245	260	276	291	307	322	341	359	378	396	415	433	452	470	489
FEMALE	1	945	991	1036	1082	1127	1173	1247	1320	1394	1468	1542	1615	1689	1763	1836
FEMALE	5	924	939	955	971	987	1003	1096	1189	1282	1375	1468	1560	1653	1746	1839
FEMALE	10	818	809	800	792	783	774	855	936	1017	1098	1180	1261	1342	1423	1504
FEMALE	15	1284	1303	1322	1341	1361	1380	1441	1502	1563	1624	1685	1745	1806	1867	1928
FEMALE	20	1852	1845	1838	1831	1824	1817	1848	1879	1910	1941	1972	2003	2034	2065	2096
FEMALE	25	1520	1497	1474	1450	1427	1404	1416	1427	1439	1450	1462	1474	1485	1497	1508
FEMALE	30	1298	1286	1275	1263	1252	1240	1257	1274	1292	1309	1326	1343	1360	1378	1395
FEMALE	35	1131	1139	1147	1155	1163	1171	1182	1194	1205	1217	1228	1239	1251	1262	1274
FEMALE	40	1055	1063	1071	1079	1087	1095	1105	1114	1124	1133	1143	1153	1162	1172	1181
FEMALE	45	998	1013	1029	1045	1060	1076	1091	1106	1120	1135	1150	1165	1180	1194	1209
FEMALE	50	850	877	904	932	959	986	996	1006	1016	1026	1036	1045	1055	1065	1075
FEMALE	55	791	811	831	851	871	891	907	923	940	956	972	988	1004	1021	1037
FEMALE	60	618	642	666	691	715	739	764	788	813	837	862	887	911	936	960
FEMALE	65	549	573	597	620	644	668	684	701	717	734	750	766	783	799	816
FEMALE	70	398	410	423	435	448	460	483	507	530	553	577	600	623	646	670
FEMALE	75	256	270	284	298	312	326	346	367	387	408	428	448	469	489	510
FEMALE	80	152	160	168	176	185	193	205	217	229	241	254	266	278	290	302
FEMALE	85	101	105	110	115	119	124	134	143	153	162	172	182	191	201	210
TOTAL(F)		15785	15993	16206	16418	16631	16842	17398	17952	18509	19063	19622	20173	20728	21284	21839
MALE	0	277	293	310	326	343	359	381	403	424	446	468	490	512	533	555
MALE	1	991	1027	1064	1100	1137	1173	1255	1338	1420	1503	1585	1667	1750	1832	1915
MALE	5	906	919	933	947	961	975	1080	1185	1290	1395	1500	1605	1710	1815	1920
MALE	10	835	837	838	840	841	843	920	997	1074	1151	1228	1305	1382	1459	1536
MALE	15	817	806	796	786	776	766	799	831	864	897	930	962	995	1028	1060
MALE	20	893	879	866	853	840	827	841	855	869	883	897	910	924	938	952
MALE	25	1113	1116	1120	1124	1128	1132	1153	1175	1196	1218	1239	1260	1282	1303	1325
MALE	30	1105	1106	1108	1109	1111	1112	1142	1172	1202	1232	1263	1293	1323	1353	1383
MALE	35	881	878	876	873	871	868	900	932	963	995	1027	1059	1091	1122	1154
MALE	40	860	868	876	883	891	899	918	938	957	977	996	1015	1035	1054	1074
MALE	45	782	786	789	793	796	800	817	834	850	867	884	901	918	934	951
MALE	50	710	720	731	742	753	764	779	794	809	824	839	853	868	883	898
MALE	55	620	637	654	672	689	706	712	719	725	731	738	744	750	756	763
MALE	60	516	540	564	588	612	636	640	644	648	652	656	659	663	667	671
MALE	65	391	405	419	433	448	462	476	490	503	517	531	545	559	572	586
MALE	70	281	289	298	307	316	325	341	358	374	391	407	423	440	456	473
MALE	75	184	190	196	202	208	214	221	228	234	241	248	255	262	268	275
MALE	80	101	104	107	110	114	117	121	124	128	132	136	139	143	147	150
MALE	85	63	63	64	64	65	65	70	74	79	83	88	92	97	101	106
TOTAL(M)		12326	12463	12609	12752	12900	13043	13566	14091	14609	15135	15660	16177	16704	17221	17747
TOTAL		28111	28456	28815	29170	29531	29885	30964	32043	33118	34198	35282	36350	37432	38505	39586

Table 4C

Rochester Uncorrected

		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	E	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	507	506	504	503	501	500	498	497	495	494	492	490	488	486	484
FEMALE	1	1910	1915	1920	1925	1930	1935	1939	1944	1949	1954	1959	1924	1889	1854	1819
FEMALE	5	1932	2015	2099	2182	2266	2349	2432	2516	2599	2683	2766	2681	2595	2510	2424
FEMALE	10	1585	1676	1767	1857	1948	2039	2130	2221	2311	2402	2493	2447	2401	2355	2309
FEMALE	15	1989	2069	2149	2228	2308	2388	2468	2548	2627	2707	2787	2801	2815	2829	2843
FEMALE	20	2127	2241	2355	2469	2583	2698	2812	2926	3040	3154	3268	3365	3461	3558	3654
FEMALE	25	1520	1615	1709	1804	1898	1993	2088	2182	2277	2371	2466	2541	2616	2691	2766
FEMALE	30	1412	1465	1517	1570	1623	1676	1728	1781	1834	1886	1939	1998	2056	2115	2174
FEMALE	35	1285	1298	1311	1323	1336	1349	1362	1375	1387	1400	1413	1461	1509	1556	1604
FEMALE	40	1191	1213	1235	1257	1279	1301	1322	1344	1366	1388	1410	1426	1442	1459	1475
FEMALE	45	1224	1234	1245	1255	1265	1276	1286	1296	1306	1317	1327	1325	1323	1320	1318
FEMALE	50	1085	1102	1118	1135	1151	1168	1185	1201	1218	1234	1251	1256	1262	1267	1272
FEMALE	55	1053	1073	1092	1112	1131	1151	1171	1190	1210	1229	1249	1248	1246	1245	1244
FEMALE	60	985	997	1008	1020	1032	1044	1055	1067	1079	1090	1102	1103	1103	1104	1104
FEMALE	65	832	848	864	880	896	912	928	944	960	976	992	998	1004	1010	1016
FEMALE	70	693	711	729	747	765	783	800	818	836	854	872	887	902	917	932
FEMALE	75	530	548	567	585	604	622	640	659	677	696	714	729	744	758	773
FEMALE	80	314	331	348	366	383	400	417	434	452	469	486	502	519	535	552
FEMALE	85	220	235	251	266	281	297	312	327	342	358	373	396	419	443	466
TOTAL(F)		22394	23092	23788	24484	25180	25881	26573	27270	27965	28662	29359	29578	29794	30012	30229
MALE	0	577	577	578	578	578	579	579	579	579	580	580	574	567	561	554
MALE	1	1997	2001	2006	2010	2014	2019	2023	2027	2031	2036	2040	2002	1965	1927	1890
MALE	5	2025	2116	2206	2297	2387	2478	2569	2659	2750	2840	2931	2829	2727	2626	2524
MALE	10	1613	1710	1807	1905	2002	2099	2196	2293	2391	2488	2585	2540	2495	2450	2405
MALE	15	1093	1190	1286	1383	1479	1576	1672	1769	1865	1962	2058	2101	2145	2188	2231
MALE	20	966	1026	1085	1145	1204	1264	1323	1383	1442	1502	1561	1677	1792	1908	2023
MALE	25	1346	1418	1489	1561	1632	1704	1775	1847	1918	1990	2061	2149	2237	2325	2413
MALE	30	1413	1469	1525	1582	1638	1694	1750	1806	1863	1919	1975	2010	2045	2079	2114
MALE	35	1186	1216	1247	1277	1307	1338	1368	1398	1428	1459	1489	1519	1549	1580	1610
MALE	40	1093	1114	1136	1157	1178	1200	1221	1242	1263	1285	1306	1323	1341	1358	1375
MALE	45	968	989	1010	1032	1053	1074	1095	1116	1138	1159	1180	1191	1202	1213	1224
MALE	50	913	932	952	971	990	1010	1029	1048	1067	1087	1106	1109	1112	1116	1119
MALE	55	769	782	795	808	821	834	847	860	873	886	899	916	933	949	966
MALE	60	675	690	705	720	735	750	764	779	794	809	824	832	840	848	856
MALE	65	600	599	599	598	598	597	596	596	595	595	594	600	606	612	618
MALE	70	489	489	488	488	488	488	487	487	487	486	486	490	493	497	500
MALE	75	282	289	297	304	311	319	326	333	340	348	355	360	364	369	374
MALE	80	154	162	171	179	187	196	204	212	220	229	237	237	236	236	235
MALE	85	110	113	116	119	122	125	128	131	134	137	140	143	147	150	154
TOTAL(M)		18269	18882	19498	20114	20724	21344	21952	22565	23178	23797	24407	24602	24796	24992	25185
TOTAL		40663	41974	43286	44598	45904	47225	48525	49835	51143	52459	53766	54180	54590	55004	55414

APPENDIX B: POPULATIONS 1930-1990

Table 4D

Rochester Uncorrected

		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	E	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
FEMALE	0	482	480	478	476	474	472	477	482	488	493	498	503	508	514	519	524
FEMALE	1	1784	1748	1713	1678	1643	1608	1694	1780	1867	1953	2039	2125	2211	2298	2384	2470
FEMALE	5	2339	2254	2168	2083	1997	1912	1984	2055	2127	2199	2271	2342	2414	2486	2557	2629
FEMALE	10	2264	2218	2172	2126	2080	2034	2047	2060	2072	2085	2098	2111	2124	2136	2149	2162
FEMALE	15	2857	2870	2884	2898	2912	2926	2849	2773	2696	2620	2543	2466	2390	2313	2237	2160
FEMALE	20	3751	3848	3944	4041	4137	4234	4090	3946	3802	3658	3515	3371	3227	3083	2939	2795
FEMALE	25	2842	2917	2992	3067	3142	3217	3286	3355	3424	3493	3563	3632	3701	3770	3839	3908
FEMALE	30	2233	2291	2350	2409	2467	2526	2666	2805	2945	3084	3224	3364	3503	3643	3782	3922
FEMALE	35	1652	1700	1748	1795	1843	1891	2001	2110	2220	2329	2439	2549	2658	2768	2877	2987
FEMALE	40	1491	1507	1523	1540	1556	1572	1658	1745	1831	1918	2004	2090	2177	2263	2350	2436
FEMALE	45	1316	1314	1312	1309	1307	1305	1362	1420	1477	1534	1592	1649	1706	1763	1821	1878
FEMALE	50	1278	1283	1288	1293	1299	1304	1327	1351	1374	1397	1421	1444	1467	1490	1514	1537
FEMALE	55	1243	1241	1240	1239	1237	1236	1244	1252	1261	1269	1277	1285	1293	1302	1310	1318
FEMALE	60	1105	1106	1106	1107	1107	1108	1122	1136	1149	1163	1177	1191	1205	1218	1232	1246
FEMALE	65	1022	1027	1033	1039	1045	1051	1062	1072	1083	1093	1104	1115	1125	1136	1146	1157
FEMALE	70	948	963	978	993	1008	1023	1026	1029	1032	1035	1038	1040	1043	1046	1049	1052
FEMALE	75	788	803	818	832	847	862	876	890	904	918	932	946	960	974	988	1002
FEMALE	80	568	584	601	617	634	650	669	689	708	727	747	766	785	804	824	843
FEMALE	85	489	512	535	559	582	605	641	677	713	749	785	821	857	893	929	965
TOTAL(F)		30452	30666	30883	31101	31317	31536	32081	32627	33173	33717	34267	34810	35354	35900	36446	36991
MALE	0	548	542	535	529	522	516	523	531	538	545	553	560	567	574	582	589
MALE	1	1852	1814	1777	1739	1702	1664	1752	1840	1929	2017	2105	2193	2281	2370	2458	2546
MALE	5	2422	2320	2218	2117	2015	1913	2008	2104	2199	2295	2390	2485	2581	2676	2772	2867
MALE	10	2360	2315	2270	2225	2180	2135	2151	2166	2182	2198	2214	2229	2245	2261	2276	2292
MALE	15	2275	2318	2361	2404	2448	2491	2440	2389	2338	2287	2237	2186	2135	2084	2033	1982
MALE	20	2139	2255	2370	2486	2601	2717	2681	2645	2609	2573	2537	2500	2464	2428	2392	2356
MALE	25	2502	2590	2678	2766	2854	2942	3016	3091	3165	3240	3314	3388	3463	3537	3612	3686
MALE	30	2149	2184	2219	2253	2288	2323	2476	2629	2782	2935	3088	3241	3394	3547	3700	3853
MALE	35	1640	1670	1700	1731	1761	1791	1911	2031	2152	2272	2392	2512	2632	2753	2873	2993
MALE	40	1393	1410	1427	1444	1462	1479	1558	1637	1716	1795	1875	1954	2033	2112	2191	2270
MALE	45	1235	1245	1256	1267	1278	1289	1340	1391	1441	1492	1543	1594	1645	1695	1746	1797
MALE	50	1122	1125	1128	1132	1135	1138	1172	1206	1240	1274	1308	1342	1376	1410	1444	1478
MALE	55	983	1000	1017	1033	1050	1067	1089	1111	1134	1156	1178	1200	1222	1245	1267	1289
MALE	60	864	871	879	887	895	903	915	927	940	952	964	976	988	1001	1013	1025
MALE	65	625	631	637	643	649	655	682	709	736	763	791	818	845	872	899	926
MALE	70	504	508	511	515	518	522	541	560	578	597	616	635	654	672	691	710
MALE	75	379	383	388	393	397	402	413	424	434	445	456	467	478	488	499	510
MALE	80	235	235	234	234	233	233	241	249	257	265	273	280	288	296	304	312
MALE	85	157	160	164	167	171	174	184	194	204	214	224	233	243	253	263	273
TOTAL(M)		25384	25576	25769	25965	26159	26354	27093	27834	28574	29315	30058	30793	31534	32274	33015	33754
TOTAL		55836	56242	56652	57066	57476	57890	59174	60461	61747	63032	64325	65603	66888	68174	69461	70745

APPENDIX B: POPULATIONS 1930-1990

Table 5A

Olmsted Total Uncorrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
S	$\bar{G}$	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	325	324	323	321	320	319	318	317	315	314	313	338	364	389	415
FEMALE	1	1215	1226	1236	1247	1257	1268	1279	1289	1300	1310	1321	1402	1484	1565	1646
FEMALE	5	1587	1589	1592	1594	1596	1599	1601	1603	1605	1608	1610	1642	1674	1706	1738
FEMALE	10	1485	1498	1512	1525	1539	1552	1565	1579	1592	1606	1619	1614	1609	1604	1599
FEMALE	15	1593	1626	1659	1692	1725	1759	1792	1825	1858	1891	1924	1928	1932	1936	1940
FEMALE	20	2013	2063	2114	2164	2215	2265	2315	2366	2416	2467	2517	2505	2494	2482	2470
FEMALE	25	1693	1741	1789	1837	1885	1933	1980	2028	2076	2124	2172	2162	2152	2143	2133
FEMALE	30	1505	1541	1576	1612	1647	1683	1718	1754	1789	1825	1860	1860	1860	1861	1861
FEMALE	35	1300	1326	1352	1378	1404	1431	1457	1483	1509	1535	1561	1579	1598	1616	1634
FEMALE	40	1251	1276	1301	1327	1352	1377	1402	1427	1453	1478	1503	1514	1525	1536	1547
FEMALE	45	1019	1052	1085	1118	1151	1185	1218	1251	1284	1317	1350	1368	1387	1405	1424
FEMALE	50	838	865	892	919	946	974	1001	1028	1055	1082	1109	1142	1176	1209	1243
FEMALE	55	730	755	780	806	831	856	881	906	932	957	982	1008	1033	1059	1084
FEMALE	60	576	596	616	635	655	675	695	715	734	754	774	799	823	848	872
FEMALE	65	483	499	514	530	545	561	577	592	608	623	639	665	691	717	743
FEMALE	70	332	343	353	364	375	386	396	407	418	428	439	460	482	503	524
FEMALE	75	173	185	198	210	222	235	247	259	271	284	296	311	326	341	356
FEMALE	80	103	110	117	125	132	139	146	153	161	168	175	184	193	202	211
FEMALE	85	69	74	79	84	89	94	99	104	109	114	119	125	131	136	142
TOTAL(F)		18290	18689	19088	19488	19886	20291	20687	21086	21485	21885	22283	22606	22934	23258	23582
MALE	0	308	312	316	320	324	329	333	337	341	345	349	375	400	426	451
MALE	1	1281	1305	1330	1354	1378	1403	1427	1451	1475	1500	1524	1590	1656	1723	1789
MALE	5	1652	1650	1648	1647	1645	1643	1641	1639	1638	1636	1634	1675	1716	1757	1798
MALE	10	1535	1546	1557	1569	1580	1591	1602	1613	1625	1636	1647	1659	1671	1683	1695
MALE	15	1417	1442	1467	1493	1518	1543	1568	1593	1619	1644	1669	1653	1636	1620	1603
MALE	20	1326	1363	1400	1438	1475	1512	1549	1586	1624	1661	1698	1669	1641	1612	1584
MALE	25	1343	1381	1418	1456	1494	1532	1569	1607	1645	1682	1720	1726	1732	1739	1745
MALE	30	1367	1395	1423	1451	1479	1507	1535	1563	1591	1619	1647	1660	1673	1687	1700
MALE	35	1313	1327	1342	1356	1370	1385	1399	1413	1427	1442	1456	1460	1465	1469	1473
MALE	40	1201	1214	1227	1240	1253	1267	1280	1293	1306	1319	1332	1345	1358	1370	1383
MALE	45	998	1028	1059	1089	1120	1150	1180	1211	1241	1272	1302	1303	1305	1306	1308
MALE	50	854	880	906	932	958	984	1010	1036	1062	1088	1114	1128	1143	1157	1171
MALE	55	740	760	779	799	818	838	857	877	896	916	935	955	976	996	1017
MALE	60	581	596	612	627	643	658	673	689	704	720	735	759	784	808	832
MALE	65	489	499	509	518	528	538	548	558	567	577	587	605	622	640	657
MALE	70	379	387	394	402	409	417	424	432	439	447	454	461	469	476	483
MALE	75	183	192	201	211	220	229	238	247	257	266	275	285	294	304	313
MALE	80	96	101	106	111	116	121	125	130	135	140	145	150	155	160	165
MALE	85	65	68	72	75	78	82	85	88	91	95	98	99	101	102	104
TOTAL(M)		17128	17446	17766	18088	18406	18729	19043	19363	19683	20005	20321	20557	20797	21035	21271
TOTAL		35418	36135	36854	37576	38292	39020	39730	40449	41168	41890	42604	43163	43731	44293	44853

Table 5B

Olmsted Total Uncorrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
FEMALE	0	440	465	491	516	542	567	600	633	665	698	731	764	797	829	862
FEMALE	1	1728	1809	1890	1971	2053	2134	2263	2393	2522	2651	2781	2910	3039	3168	3298
FEMALE	5	1770	1802	1834	1866	1898	1930	2083	2235	2388	2541	2694	2846	2999	3152	3304
FEMALE	10	1595	1590	1585	1580	1575	1570	1697	1824	1951	2078	2205	2332	2459	2586	2713
FEMALE	15	1944	1948	1952	1956	1960	1964	2048	2132	2216	2300	2384	2467	2551	2635	2719
FEMALE	20	2459	2447	2435	2423	2412	2400	2458	2516	2573	2631	2689	2747	2805	2862	2920
FEMALE	25	2123	2113	2103	2094	2084	2074	2103	2131	2160	2188	2217	2246	2274	2303	2331
FEMALE	30	1861	1861	1861	1862	1862	1862	1899	1935	1972	2008	2045	2082	2118	2155	2191
FEMALE	35	1653	1671	1689	1707	1726	1744	1774	1803	1833	1863	1893	1922	1952	1982	2011
FEMALE	40	1558	1569	1580	1591	1602	1613	1635	1657	1679	1701	1723	1745	1767	1789	1811
FEMALE	45	1442	1460	1479	1497	1516	1534	1561	1587	1614	1640	1667	1693	1720	1746	1773
FEMALE	50	1276	1309	1343	1376	1410	1443	1456	1469	1482	1495	1508	1521	1534	1547	1560
FEMALE	55	1110	1136	1161	1187	1212	1238	1262	1287	1311	1336	1360	1384	1409	1433	1458
FEMALE	60	897	921	946	970	995	1019	1053	1087	1120	1154	1188	1222	1256	1289	1323
FEMALE	65	770	796	822	848	874	900	920	939	959	979	999	1018	1038	1058	1077
FEMALE	70	546	567	588	609	631	652	678	705	731	758	784	810	837	863	890
FEMALE	75	371	386	401	416	431	446	470	495	519	544	568	592	617	641	666
FEMALE	80	220	228	237	246	255	264	279	293	308	322	337	351	366	380	395
FEMALE	85	148	154	160	165	171	177	187	197	207	217	227	237	247	257	267
TOTAL(F)		23911	24232	24557	24880	25209	25531	26426	27318	28210	29104	30000	30889	31785	32675	33569
MALE	0	477	502	528	553	579	604	644	684	724	764	804	843	883	923	963
MALE	1	1855	1921	1987	2054	2120	2186	2322	2458	2594	2730	2866	3001	3137	3273	3409
MALE	5	1840	1881	1922	1963	2004	2045	2209	2373	2537	2701	2865	3029	3193	3357	3521
MALE	10	1707	1719	1731	1743	1755	1767	1884	2001	2118	2235	2352	2469	2586	2703	2820
MALE	15	1587	1570	1554	1537	1521	1504	1556	1608	1660	1712	1765	1817	1869	1921	1973
MALE	20	1555	1526	1498	1469	1441	1412	1442	1473	1503	1534	1564	1594	1625	1655	1686
MALE	25	1751	1757	1763	1770	1776	1782	1826	1869	1913	1956	2000	2043	2087	2130	2174
MALE	30	1713	1726	1739	1753	1766	1779	1823	1868	1912	1957	2001	2045	2090	2134	2179
MALE	35	1478	1482	1486	1490	1495	1499	1547	1596	1644	1692	1741	1789	1837	1885	1934
MALE	40	1396	1409	1422	1434	1447	1460	1494	1528	1562	1596	1631	1665	1699	1733	1767
MALE	45	1309	1310	1312	1313	1315	1316	1348	1380	1411	1443	1475	1507	1539	1570	1602
MALE	50	1186	1200	1214	1228	1243	1257	1277	1297	1316	1336	1356	1376	1396	1415	1435
MALE	55	1037	1057	1078	1098	1119	1139	1149	1159	1169	1179	1189	1199	1209	1219	1229
MALE	60	857	881	905	929	954	978	991	1004	1017	1030	1043	1056	1069	1082	1095
MALE	65	675	693	710	728	745	763	778	793	808	823	838	853	868	883	898
MALE	70	491	498	505	512	520	527	545	563	581	599	617	635	653	671	689
MALE	75	323	333	342	352	361	371	381	390	400	409	419	429	438	448	457
MALE	80	171	176	181	186	191	196	201	206	211	216	221	226	231	236	241
MALE	85	105	106	108	109	111	112	118	123	129	134	140	145	151	156	162
TOTAL(M)		21513	21747	21985	22221	22463	22697	23535	24373	25209	26046	26887	27721	28560	29394	30234
TOTAL		45424	45979	46542	47101	47672	48228	49961	51691	53419	55150	56887	58610	60345	62069	63803

APPENDIX B: POPULATIONS 1930-1990

Table 5C

Olmsted Total Uncorrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	895	888	881	873	866	859	852	845	837	830	823	819	815	812	808
FEMALE	1	3427	3410	3392	3375	3357	3340	3322	3305	3287	3270	3252	3197	3142	3087	3032
FEMALE	5	3457	3593	3728	3864	3999	4135	4270	4406	4541	4677	4812	4676	4540	4404	4268
FEMALE	10	2840	2987	3133	3280	3427	3574	3720	3867	4014	4160	4307	4246	4186	4125	4065
FEMALE	15	2803	2924	3045	3166	3287	3408	3528	3649	3770	3891	4012	4076	4140	4204	4268
FEMALE	20	2978	3112	3246	3380	3514	3648	3781	3915	4049	4183	4317	4431	4545	4659	4773
FEMALE	25	2360	2495	2631	2766	2902	3037	3172	3308	3443	3579	3714	3806	3898	3990	4082
FEMALE	30	2228	2306	2385	2463	2541	2620	2698	2776	2854	2933	3011	3101	3192	3282	3372
FEMALE	35	2041	2065	2089	2113	2137	2161	2184	2208	2232	2256	2280	2374	2468	2562	2656
FEMALE	40	1833	1867	1901	1935	1969	2003	2036	2070	2104	2138	2172	2224	2275	2327	2379
FEMALE	45	1799	1823	1847	1871	1895	1919	1942	1966	1990	2014	2038	2047	2056	2065	2074
FEMALE	50	1573	1598	1624	1649	1675	1700	1725	1751	1776	1802	1827	1846	1865	1883	1902
FEMALE	55	1482	1510	1538	1565	1593	1621	1649	1677	1704	1732	1760	1774	1788	1802	1816
FEMALE	60	1357	1375	1392	1410	1427	1445	1463	1480	1498	1515	1533	1541	1549	1557	1565
FEMALE	65	1097	1120	1144	1167	1190	1214	1237	1260	1283	1307	1330	1343	1355	1368	1381
FEMALE	70	916	938	960	983	1005	1027	1049	1071	1094	1116	1138	1158	1178	1197	1217
FEMALE	75	690	710	730	749	769	789	809	829	848	868	888	910	932	953	975
FEMALE	80	409	427	445	462	480	498	516	534	551	569	587	608	629	651	672
FEMALE	85	277	294	310	327	343	360	376	393	409	426	442	474	506	538	570
TOTAL(F)		34462	35442	36421	37398	38376	39358	40329	41310	42284	43266	44243	44651	45059	45466	45875
MALE	0	1003	996	989	982	975	969	962	955	948	941	934	925	917	908	899
MALE	1	3545	3536	3527	3519	3510	3501	3492	3483	3475	3466	3457	3397	3336	3276	3215
MALE	5	3685	3824	3963	4102	4241	4381	4520	4659	4798	4937	5076	4918	4760	4603	4445
MALE	10	2937	3101	3264	3428	3592	3756	3919	4083	4247	4410	4574	4508	4443	4377	4312
MALE	15	2025	2171	2316	2462	2607	2753	2898	3044	3189	3335	3480	3571	3661	3752	3842
MALE	20	1716	1775	1833	1892	1950	2009	2067	2126	2184	2243	2301	2476	2651	2826	3001
MALE	25	2217	2318	2419	2520	2621	2723	2824	2925	3026	3127	3228	3337	3445	3554	3663
MALE	30	2223	2309	2396	2482	2569	2655	2741	2828	2914	3001	3087	3140	3192	3245	3297
MALE	35	1982	2025	2067	2110	2152	2195	2238	2280	2323	2365	2408	2479	2550	2621	2692
MALE	40	1801	1832	1864	1895	1926	1958	1989	2020	2051	2083	2114	2168	2222	2275	2329
MALE	45	1634	1664	1695	1725	1755	1786	1816	1846	1876	1907	1937	1966	1995	2023	2052
MALE	50	1455	1481	1507	1533	1559	1586	1612	1638	1664	1690	1716	1737	1758	1779	1800
MALE	55	1239	1263	1288	1312	1336	1361	1385	1409	1433	1458	1482	1511	1540	1569	1598
MALE	60	1108	1123	1138	1154	1169	1184	1199	1214	1230	1245	1260	1274	1289	1303	1317
MALE	65	913	918	922	927	931	936	941	945	950	954	959	974	988	1003	1017
MALE	70	707	713	719	725	731	737	742	748	754	760	766	770	774	778	782
MALE	75	467	473	479	485	491	497	502	508	514	520	526	534	541	549	556
MALE	80	246	256	265	275	285	295	304	314	324	333	343	345	348	350	352
MALE	85	167	172	176	181	185	190	195	199	204	208	213	215	218	220	223
TOTAL(M)		31070	31950	32827	33709	34585	35472	36346	37224	38104	38983	39861	40245	40628	41011	41392
TOTAL		65532	67392	69248	71107	72961	74830	76675	78534	80388	82249	84104	84896	85687	86477	87267

APPENDIX B: POPULATIONS 1930-1990

Table 5D

Olmsted Total Uncorrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
FEMALE	0	804	800	796	793	789	785	781	777	774	770	766	762	758	755	751	747
FEMALE	1	2977	2921	2866	2811	2756	2701	2808	2914	3021	3127	3234	3341	3447	3554	3660	3767
FEMALE	5	4133	3997	3861	3725	3589	3453	3534	3614	3695	3776	3857	3937	4018	4099	4179	4260
FEMALE	10	4004	3943	3883	3822	3762	3701	3694	3688	3681	3675	3668	3661	3655	3648	3642	3635
FEMALE	15	4332	4395	4459	4523	4587	4651	4532	4413	4295	4176	4057	3938	3819	3701	3582	3463
FEMALE	20	4888	5002	5116	5230	5344	5458	5281	5105	4928	4751	4575	4398	4221	4044	3868	3691
FEMALE	25	4174	4265	4357	4449	4541	4633	4701	4769	4836	4904	4972	5040	5108	5175	5243	5311
FEMALE	30	3463	3553	3643	3733	3824	3914	4082	4250	4418	4586	4754	4922	5090	5258	5426	5594
FEMALE	35	2751	2845	2939	3033	3127	3221	3351	3480	3610	3739	3869	3999	4128	4258	4387	4517
FEMALE	40	2431	2482	2534	2586	2637	2689	2799	2908	3018	3128	3238	3347	3457	3567	3676	3786
FEMALE	45	2083	2091	2100	2109	2118	2127	2228	2328	2429	2529	2630	2731	2831	2932	3032	3133
FEMALE	50	1921	1940	1959	1977	1996	2015	2063	2112	2160	2208	2257	2305	2353	2401	2450	2498
FEMALE	55	1830	1844	1858	1872	1886	1900	1909	1918	1927	1936	1945	1954	1963	1972	1981	1990
FEMALE	60	1573	1581	1589	1597	1605	1613	1633	1654	1674	1695	1715	1735	1756	1776	1797	1817
FEMALE	65	1394	1406	1419	1432	1444	1457	1478	1499	1520	1541	1563	1584	1605	1626	1647	1668
FEMALE	70	1237	1257	1277	1296	1316	1336	1348	1360	1371	1383	1395	1407	1419	1430	1442	1454
FEMALE	75	997	1019	1041	1062	1084	1106	1123	1141	1158	1176	1193	1210	1228	1245	1263	1280
FEMALE	80	693	714	735	757	778	799	823	847	871	895	919	942	966	990	1014	1038
FEMALE	85	603	635	667	699	731	763	800	838	875	912	950	987	1024	1061	1099	1136
TOTAL(F)		46288	46690	47099	47506	47914	48322	48968	49615	50261	50907	51557	52200	52846	53492	54139	54785
MALE	0	891	882	873	864	856	847	851	854	858	861	865	869	872	876	879	883
MALE	1	3155	3094	3034	2973	2913	2852	2943	3034	3125	3216	3308	3399	3490	3581	3672	3763
MALE	5	4287	4129	3971	3814	3656	3498	3606	3715	3823	3931	4040	4148	4256	4364	4473	4581
MALE	10	4246	4180	4115	4049	3984	3918	3913	3908	3903	3898	3893	3887	3882	3877	3872	3867
MALE	15	3933	4023	4114	4204	4295	4385	4284	4182	4081	3979	3878	3777	3675	3574	3472	3371
MALE	20	3176	3350	3525	3700	3875	4050	3975	3899	3824	3748	3673	3598	3522	3447	3371	3296
MALE	25	3772	3880	3989	4098	4206	4315	4385	4454	4524	4594	4664	4733	4803	4873	4942	5012
MALE	30	3350	3402	3455	3507	3560	3612	3800	3988	4176	4364	4552	4740	4928	5116	5304	5492
MALE	35	2763	2833	2904	2975	3046	3117	3255	3394	3532	3670	3809	3947	4085	4223	4362	4500
MALE	40	2383	2437	2491	2544	2598	2652	2745	2838	2931	3024	3117	3209	3302	3395	3488	3581
MALE	45	2081	2110	2139	2167	2196	2225	2310	2396	2481	2566	2652	2737	2822	2907	2993	3078
MALE	50	1821	1842	1863	1884	1905	1926	1983	2039	2096	2152	2209	2265	2322	2378	2435	2491
MALE	55	1627	1655	1684	1713	1742	1771	1803	1834	1866	1898	1930	1961	1993	2025	2056	2088
MALE	60	1332	1346	1360	1374	1389	1403	1428	1453	1478	1503	1529	1554	1579	1604	1629	1654
MALE	65	1032	1046	1061	1075	1090	1104	1136	1168	1200	1232	1264	1296	1328	1360	1392	1424
MALE	70	786	789	793	797	801	805	829	853	878	902	926	950	974	999	1023	1047
MALE	75	564	571	579	586	594	601	616	631	647	662	677	692	707	723	738	753
MALE	80	355	357	359	361	364	366	374	382	390	398	406	414	422	430	438	446
MALE	85	225	227	230	232	235	237	249	261	273	285	298	310	322	334	346	358
TOTAL(M)		41779	42153	42539	42917	43305	43684	44485	45283	46086	46883	47690	48486	49284	50086	50885	51685
TOTAL		88067	88843	89638	90423	91219	92006	93453	94898	96347	97790	99247	100686	102130	103578	105024	106470

APPENDIX B: POPULATIONS 1930-1990

Table 6A

Olmsted Balance Uncorrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	143	143	144	143	144	144	144	145	144	145	145	155	165	175	185
FEMALE	1	604	604	604	604	604	604	604	604	604	604	604	639	676	711	747
FEMALE	5	814	809	805	800	795	790	785	780	775	771	766	782	798	814	830
FEMALE	10	749	749	751	751	753	753	753	755	755	757	757	761	765	768	772
FEMALE	15	604	617	630	644	657	671	684	697	711	724	737	722	706	691	676
FEMALE	20	472	487	504	519	536	551	567	583	599	615	631	626	622	617	612
FEMALE	25	474	480	487	493	499	505	511	517	523	530	536	549	562	577	590
FEMALE	30	490	492	493	495	496	497	498	500	501	503	504	516	527	540	551
FEMALE	35	414	420	425	431	436	443	449	454	460	465	471	481	492	502	512
FEMALE	40	425	431	437	444	450	456	463	469	476	482	488	491	494	497	500
FEMALE	45	343	352	360	369	378	387	396	405	414	422	431	433	437	439	442
FEMALE	50	313	321	329	337	345	354	363	371	379	387	395	401	408	413	420
FEMALE	55	266	268	271	274	277	279	281	284	287	290	292	298	303	309	314
FEMALE	60	242	246	249	252	256	259	263	267	270	273	277	278	278	278	278
FEMALE	65	212	212	211	211	210	210	211	210	210	209	209	211	213	216	218
FEMALE	70	120	119	116	115	114	112	110	109	108	105	104	112	122	130	139
FEMALE	75	73	76	81	84	88	92	96	99	103	107	111	112	113	114	115
FEMALE	80	44	46	48	51	53	54	56	58	61	63	65	66	66	67	68
FEMALE	85	28	29	31	32	34	35	36	38	39	41	42	43	45	45	46
TOTAL(F)		6830	6901	6976	7049	7125	7196	7270	7345	7419	7493	7565	7676	7792	7903	8015
MALE	0	162	161	160	160	159	159	158	157	157	156	155	164	173	182	191
MALE	1	650	656	664	670	676	683	690	696	702	710	716	745	775	805	835
MALE	5	848	843	838	833	828	823	818	813	808	803	798	825	852	879	906
MALE	10	823	822	822	822	822	821	821	820	821	820	820	830	841	851	862
MALE	15	753	758	762	768	773	777	782	787	793	797	802	796	789	783	776
MALE	20	591	606	620	636	651	665	680	695	711	725	740	724	709	693	678
MALE	25	500	513	525	538	551	564	576	589	602	614	627	629	631	634	636
MALE	30	549	549	549	549	549	549	550	550	550	550	550	561	573	585	597
MALE	35	540	542	545	547	549	552	554	556	558	561	563	569	577	583	590
MALE	40	491	493	495	497	499	501	503	505	507	509	511	516	521	526	531
MALE	45	444	453	463	472	482	491	500	510	519	529	538	535	534	531	530
MALE	50	379	387	395	403	411	419	427	435	443	451	459	462	466	469	472
MALE	55	349	355	359	365	370	375	380	386	391	396	401	404	408	410	414
MALE	60	292	296	302	306	312	316	320	326	330	336	340	340	341	341	341
MALE	65	232	236	240	242	246	250	254	258	260	264	268	272	274	278	281
MALE	70	189	192	195	198	201	204	206	210	212	216	218	216	215	213	211
MALE	75	102	104	106	108	110	112	114	116	118	120	122	126	129	133	136
MALE	80	52	53	54	55	56	57	57	58	59	60	61	63	64	66	68
MALE	85	34	34	35	35	35	36	37	37	37	38	38	38	40	40	42
TOTAL(M)		7980	8053	8129	8204	8280	8354	8427	8504	8578	8655	8727	8815	8912	9002	9097
TOTAL		14810	14954	15105	15253	15405	15550	15697	15849	15997	16148	16292	16491	16704	16905	17112

APPENDIX B: POPULATIONS 1930-1990

Table 6B

Olmsted Balance Uncorrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
FEMALE	0	195	205	215	225	235	245	259	274	287	302	316	331	345	359	373
FEMALE	1	783	818	854	889	926	961	1016	1073	1128	1183	1239	1295	1350	1405	1462
FEMALE	5	846	863	879	895	911	927	987	1046	1106	1166	1226	1286	1346	1406	1465
FEMALE	10	777	781	785	788	792	796	842	888	934	980	1025	1071	1117	1163	1209
FEMALE	15	660	645	630	615	599	584	607	630	653	676	699	722	745	768	791
FEMALE	20	607	602	597	592	588	583	610	637	663	690	717	744	771	797	824
FEMALE	25	603	616	629	644	657	670	687	704	721	738	755	772	789	806	823
FEMALE	30	563	575	586	599	610	622	642	661	680	699	719	739	758	777	796
FEMALE	35	522	532	542	552	563	573	592	609	628	646	665	683	701	720	737
FEMALE	40	503	506	509	512	515	518	530	543	555	568	580	592	605	617	630
FEMALE	45	444	447	450	452	456	458	470	481	494	505	517	528	540	552	564
FEMALE	50	426	432	439	444	451	457	460	463	466	469	472	476	479	482	485
FEMALE	55	319	325	330	336	341	347	355	364	371	380	388	396	405	412	421
FEMALE	60	279	279	280	279	280	280	289	299	307	317	326	335	345	353	363
FEMALE	65	221	223	225	228	230	232	236	238	242	245	249	252	255	259	261
FEMALE	70	148	157	165	174	183	192	195	198	201	205	207	210	214	217	220
FEMALE	75	115	116	117	118	119	120	124	128	132	136	140	144	148	152	156
FEMALE	80	68	68	69	70	70	71	74	76	79	81	83	85	88	90	93
FEMALE	85	47	49	50	50	52	53	53	54	54	55	55	55	56	56	57
TOTAL(F)		8126	8239	8351	8462	8578	8689	9028	9366	9701	10041	10378	10716	11057	11391	11730
MALE	0	200	209	218	227	236	245	263	281	300	318	336	353	371	390	408
MALE	1	864	894	923	954	983	1013	1067	1120	1174	1227	1281	1334	1387	1441	1494
MALE	5	934	962	989	1016	1043	1070	1129	1188	1247	1306	1365	1424	1483	1542	1601
MALE	10	872	882	893	903	914	924	964	1004	1044	1084	1124	1164	1204	1244	1284
MALE	15	770	764	758	751	745	738	757	777	796	815	835	855	874	893	913
MALE	20	662	647	632	616	601	585	601	618	634	651	667	684	701	717	734
MALE	25	638	641	643	646	648	650	673	694	717	738	761	783	805	827	849
MALE	30	608	620	631	644	655	667	681	696	710	725	738	752	767	781	796
MALE	35	597	604	610	617	624	631	647	664	681	697	714	730	746	763	780
MALE	40	536	541	546	551	556	561	576	590	605	619	635	650	664	679	693
MALE	45	527	524	523	520	519	516	531	546	561	576	591	606	621	636	651
MALE	50	476	480	483	486	490	493	498	503	507	512	517	523	528	532	537
MALE	55	417	420	424	426	430	433	437	440	444	448	451	455	459	463	466
MALE	60	341	341	341	341	342	342	351	360	369	378	387	397	406	415	424
MALE	65	284	288	291	295	297	301	302	303	305	306	307	308	309	311	312
MALE	70	210	209	207	205	204	202	204	205	207	208	210	212	213	215	216
MALE	75	139	143	146	150	153	157	160	162	166	168	171	174	176	180	182
MALE	80	70	72	74	76	77	79	80	82	83	84	85	87	88	89	91
MALE	85	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
TOTAL(M)		9187	9284	9376	9469	9563	9654	9969	10282	10600	10911	11227	11544	11856	12173	12487
TOTAL		17313	17523	17727	17931	18141	18343	18997	19648	20301	20952	21605	22260	22913	23564	24217

APPENDIX B: POPULATIONS 1930-1990

Table 6D

Olmsted Balance Uncorrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9
X	P	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
FEMALE	0	322	320	318	317	315	313	304	295	286	277	268	259	250	241	232	223
FEMALE	1	1193	1173	1153	1133	1113	1093	1114	1134	1154	1174	1195	1216	1236	1256	1276	1297
FEMALE	5	1794	1743	1693	1642	1592	1541	1550	1559	1568	1577	1586	1595	1604	1613	1622	1631
FEMALE	10	1740	1725	1711	1696	1682	1667	1647	1628	1609	1590	1570	1550	1531	1512	1493	1473
FEMALE	15	1475	1525	1575	1625	1675	1725	1683	1640	1599	1556	1514	1472	1429	1388	1345	1303
FEMALE	20	1137	1154	1172	1189	1207	1224	1191	1159	1126	1093	1060	1027	994	961	929	896
FEMALE	25	1332	1348	1365	1382	1399	1416	1415	1414	1412	1411	1409	1408	1407	1405	1404	1403
FEMALE	30	1230	1262	1293	1324	1357	1388	1416	1445	1473	1502	1530	1558	1587	1615	1644	1672
FEMALE	35	1099	1145	1191	1238	1284	1330	1350	1370	1390	1410	1430	1450	1470	1490	1510	1530
FEMALE	40	940	975	1011	1046	1081	1117	1141	1163	1187	1210	1234	1257	1280	1304	1326	1350
FEMALE	45	767	777	788	800	811	822	866	908	952	995	1038	1082	1125	1169	1211	1255
FEMALE	50	643	657	671	684	697	711	736	761	786	811	836	861	886	911	936	961
FEMALE	55	587	603	618	633	649	664	665	666	666	667	668	669	670	670	671	672
FEMALE	60	468	475	483	490	498	505	511	518	525	532	538	544	551	558	565	571
FEMALE	65	372	379	386	393	399	406	416	427	437	448	459	469	480	490	501	511
FEMALE	70	289	294	299	303	308	313	322	331	339	348	357	367	376	384	393	402
FEMALE	75	209	216	223	230	237	244	247	251	254	258	261	264	268	271	275	278
FEMALE	80	125	130	134	140	144	149	154	158	163	168	172	176	181	186	190	195
FEMALE	85	114	123	132	140	149	158	159	161	162	163	165	166	167	168	170	171
TOTAL(F)		15836	16024	16216	16405	16597	16786	16887	16988	17088	17190	17290	17390	17492	17592	17693	17794
MALE	0	343	340	338	335	334	331	328	323	320	316	312	309	305	302	297	294
MALE	1	1303	1280	1257	1234	1211	1188	1191	1194	1196	1199	1203	1206	1209	1211	1214	1217
MALE	5	1865	1809	1753	1697	1641	1585	1598	1611	1624	1636	1650	1663	1675	1688	1701	1714
MALE	10	1886	1865	1845	1824	1804	1783	1762	1742	1721	1700	1679	1658	1637	1616	1596	1575
MALE	15	1658	1705	1753	1800	1847	1894	1844	1793	1743	1692	1641	1591	1540	1490	1439	1389
MALE	20	1037	1095	1155	1214	1274	1333	1294	1254	1215	1175	1136	1098	1058	1019	979	940
MALE	25	1270	1290	1311	1332	1352	1373	1369	1363	1359	1354	1350	1345	1340	1336	1330	1326
MALE	30	1201	1218	1236	1254	1272	1289	1324	1359	1394	1429	1464	1499	1534	1569	1604	1639
MALE	35	1123	1163	1204	1244	1285	1326	1344	1363	1380	1398	1417	1435	1453	1470	1489	1507
MALE	40	990	1027	1064	1100	1136	1173	1187	1201	1215	1229	1242	1255	1269	1283	1297	1311
MALE	45	846	865	883	900	918	936	970	1005	1040	1074	1109	1143	1177	1212	1247	1281
MALE	50	699	717	735	752	770	788	811	833	856	878	901	923	946	968	991	1013
MALE	55	644	655	667	680	692	704	714	723	732	742	752	761	771	780	789	799
MALE	60	468	475	481	487	494	500	513	526	538	551	565	578	591	603	616	629
MALE	65	407	415	424	432	441	449	454	459	464	469	473	478	483	488	493	498
MALE	70	282	281	282	282	283	283	288	293	300	305	310	315	320	327	332	337
MALE	75	185	188	191	193	197	199	203	207	213	217	221	225	229	235	239	243
MALE	80	120	122	125	127	131	133	133	133	133	133	133	134	134	134	134	134
MALE	85	68	67	66	65	64	63	65	67	69	71	74	77	79	81	83	85
TOTAL(M)		16395	16577	16770	16952	17146	17330	17392	17449	17512	17568	17632	17693	17750	17812	17870	17931
TOTAL		32231	32601	32986	33357	33743	34116	34279	34437	34600	34758	34922	35083	35242	35404	35563	35725

APPENDIX B: POPULATIONS 1930-1990

Table 7: U.S. Total Population (in 1000's)

SEX	AGE_GRP	USTOT_30	USTOT_40	USTOT_50	USTOT_60	USTOT_70	USTOT_80	USTOT_90
FEMALE	0	1079	993	1555	2022	1707	1621	1573
FEMALE	1	4559	4193	6411	7969	6702	6363	7389
FEMALE	5	6266	5266	6516	9127	9788	8159	8837
FEMALE	10	5936	5794	5483	8249	10199	8925	8347
FEMALE	15	5794	6153	5329	6586	9437	10410	8651
FEMALE	20	5935	5895	5903	5528	8454	10652	9345
FEMALE	25	4972	5647	6299	5536	6855	9814	10617
FEMALE	30	4558	5172	5917	6103	5835	8882	10986
FEMALE	35	4529	4800	5748	6402	5694	7102	10061
FEMALE	40	3855	4369	5148	5924	6162	5960	8924
FEMALE	45	3370	4045	4556	5522	6245	5700	7062
FEMALE	50	2844	3504	4153	4871	5756	6088	5836
FEMALE	55	2220	2832	3613	4303	5207	6132	5497
FEMALE	60	1811	2330	3027	3733	4590	5416	5669
FEMALE	65	1353	1910	2582	3327	3870	4878	5579
FEMALE	70	959	1299	1786	2554	3129	3943	4586
FEMALE	75	558	780	1158	1694	2274	2945	3722
FEMALE	80	284	416	624	915	1409	1915	2568
FEMALE	85	157	208	341	567	968	1558	2222
TOTAL(F)		61039	65606	76149	90932	104281	116463	127471
MALE	0	1112	1027	1614	2090	1778	1700	1645
MALE	1	4694	4328	6661	8240	6967	6660	7747
MALE	5	6380	5419	6747	9504	10168	8537	9263
MALE	10	6068	5953	5685	8524	10591	9315	8767
MALE	15	5758	6180	5342	6634	9634	10751	9103
MALE	20	5336	5697	5647	5272	7917	10660	9676
MALE	25	4859	5451	6007	5333	6622	9703	10696
MALE	30	4561	5070	5656	5846	5596	8675	10877
MALE	35	4680	4745	5547	6080	5412	6860	9902
MALE	40	4136	4419	5093	5676	5819	5707	8692
MALE	45	3671	4209	4546	5358	5851	5387	6811
MALE	50	3132	3753	4142	4735	5348	5620	5515
MALE	55	2426	3011	3640	4127	4766	5481	5034
MALE	60	1941	2398	3047	3409	4027	4669	4947
MALE	65	1418	1897	2431	2931	3122	3902	4532
MALE	70	991	1271	1633	2185	2315	2853	3409
MALE	75	547	724	994	1359	1561	1847	2400
MALE	80	251	359	502	665	876	1018	1366
MALE	85	115	155	234	362	542	681	858
TOTAL(M)		62076	66066	75168	88330	98912	110026	121240
TOTAL		123115	131672	151317	179262	203193	226489	248711

APPENDIX B: POPULATIONS 1930-1990

Table 8: U.S. White Population (in 1000's)

SEX	AGE_GRP	USWHT_30	USWHT_40	USWHT_50	USWHT_60	USWHT_70	USWHT_80	USWHT_90
FEMALE	0	955	871	1349	1736	1434	1251	1171
FEMALE	1	4029	3657	5602	6773	5615	4897	5474
FEMALE	5	5500	4584	5689	7885	8264	6346	6626
FEMALE	10	5279	5094	4755	7182	8647	7052	6247
FEMALE	15	5116	5448	4648	5771	8079	8326	6497
FEMALE	20	4866	5227	5183	4825	7341	8603	7136
FEMALE	25	4384	5012	5586	4834	5962	7978	8254
FEMALE	30	4094	4633	5285	5371	5042	7344	8652
FEMALE	35	4053	4262	5110	5694	4936	5928	8027
FEMALE	40	3494	3941	4623	5306	5412	4976	7279
FEMALE	45	3054	3690	4094	4957	5587	4817	5849
FEMALE	50	2610	3229	3783	4408	5169	5238	4847
FEMALE	55	2080	2637	3347	3898	4696	5384	4638
FEMALE	60	1697	2184	2825	3429	4157	4801	4876
FEMALE	65	1278	1762	2364	3055	3491	4329	4886
FEMALE	70	908	1217	1669	2373	2875	3542	4071
FEMALE	75	528	737	1090	1453	2115	2659	3331
FEMALE	80	265	393	589	903	1314	1761	2326
FEMALE	85	139	189	314	612	890	1430	2024
TOTAL(F)		54329	58767	67905	80465	91026	96662	102211
MALE	0	990	907	1411	1726	1501	1319	1233
MALE	1	4168	3794	5845	7123	5873	5163	5771
MALE	5	5662	4745	5922	8202	8633	6684	6991
MALE	10	5415	5259	4949	7457	9034	7407	6607
MALE	15	5132	5516	4697	5837	8291	8631	6846
MALE	20	4747	5114	5024	4646	6941	8680	7388
MALE	25	4324	4892	5364	4722	5850	8004	8385
MALE	30	4117	4573	5095	5218	4925	7298	8700
MALE	35	4225	4254	4967	5447	4784	5830	8054
MALE	40	3773	3995	4581	5117	5194	4849	7227
MALE	45	3327	3843	4086	4828	5258	4638	5737
MALE	50	2836	3452	3761	4286	4833	4918	4657
MALE	55	2240	2790	3355	3729	4311	4852	4331
MALE	60	1800	2232	2832	3122	3647	4172	4335
MALE	65	1330	1737	2225	2684	2808	3481	4013
MALE	70	937	1183	1515	2018	2108	2551	3056
MALE	75	516	682	924	1162	1438	1649	2154
MALE	80	234	340	467	651	806	923	1227
MALE	85	106	140	218	393	487	614	764
TOTAL(M)		55879	59448	67238	78368	86722	91663	97476
TOTAL		110208	118215	135143	158833	177748	188325	199687

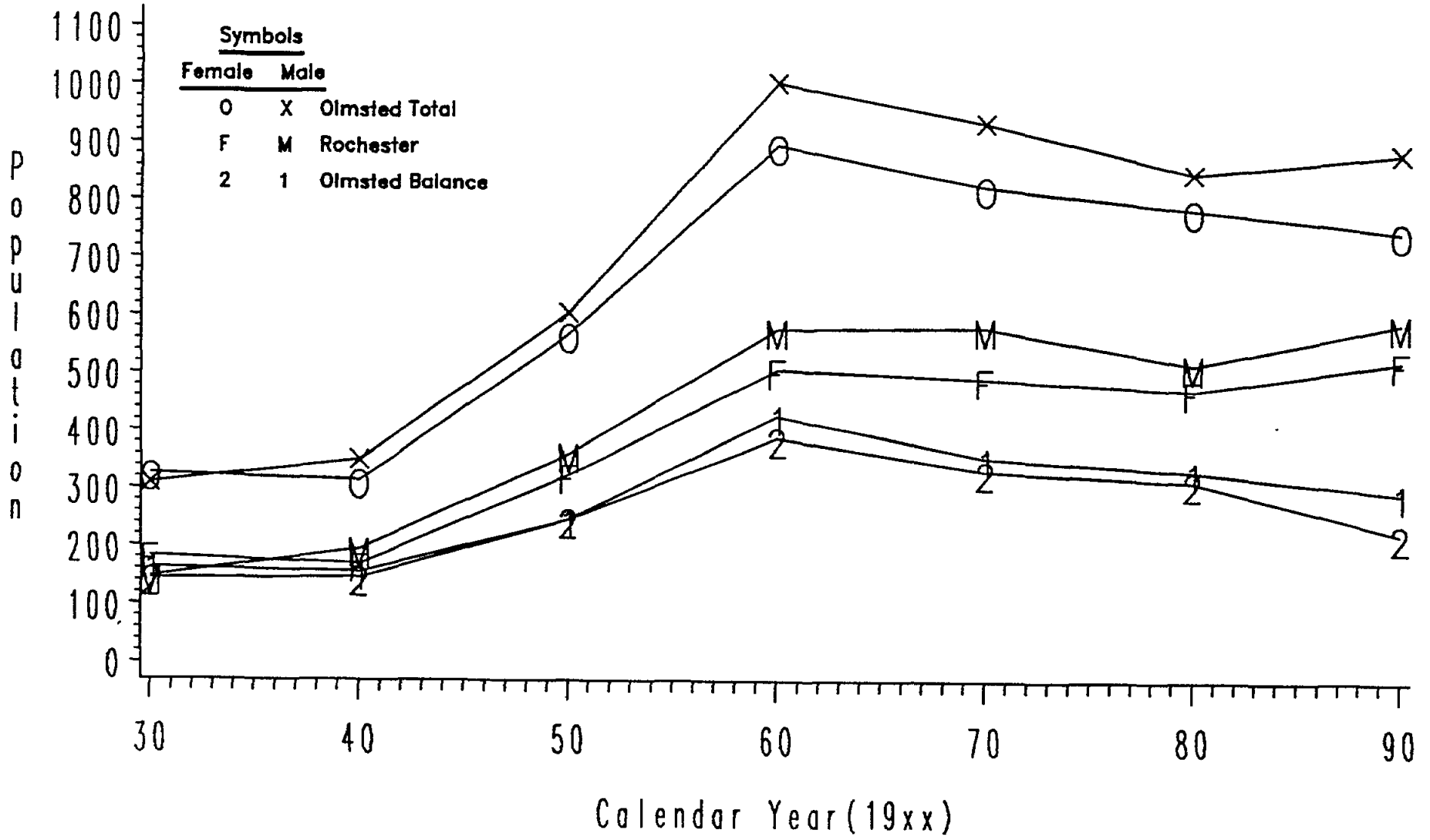
APPENDIX C

Plots of Uncorrected Populations vs. Calendar Year for Each Sex by Age Group

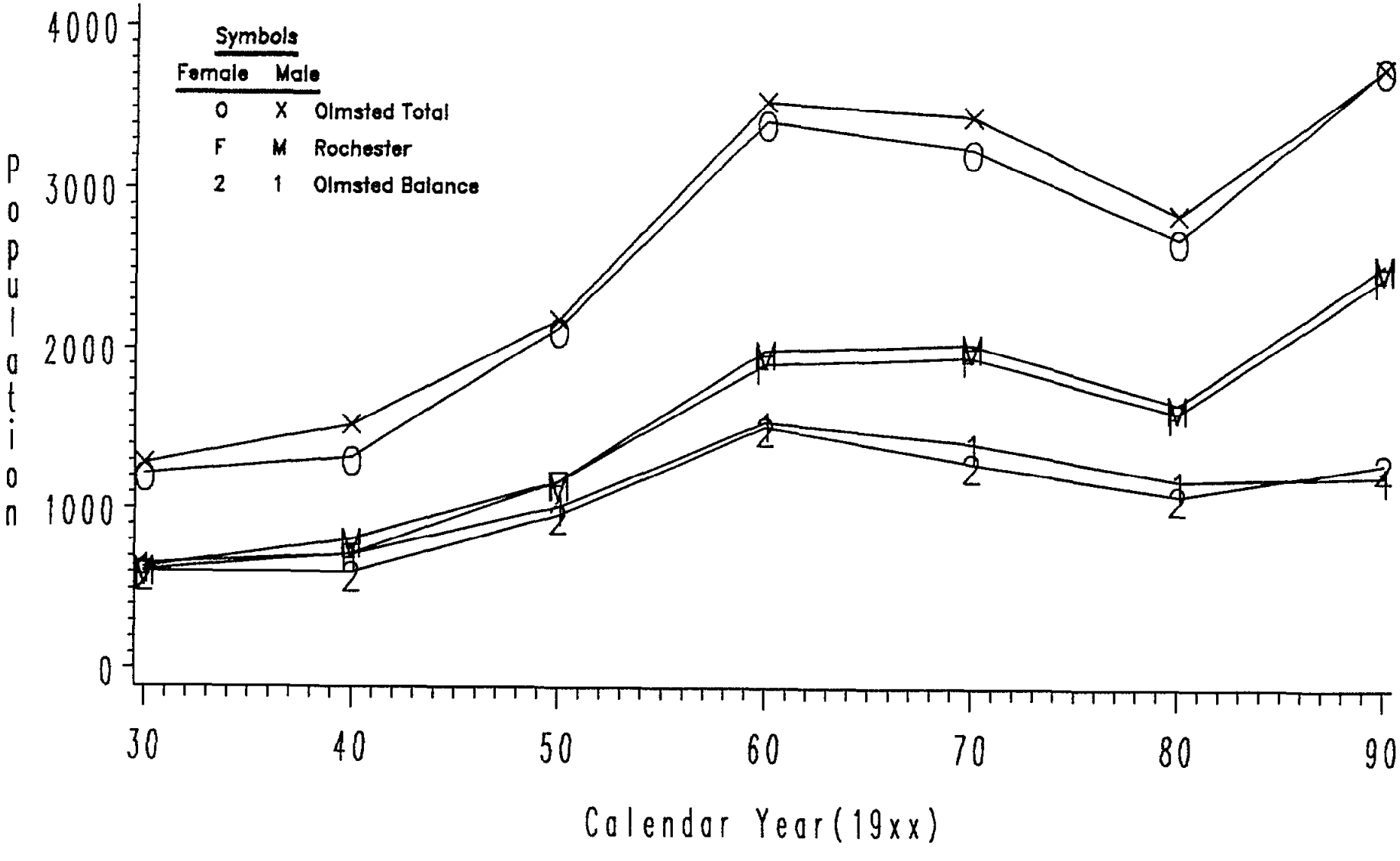
APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 1

AGE_GRP=0



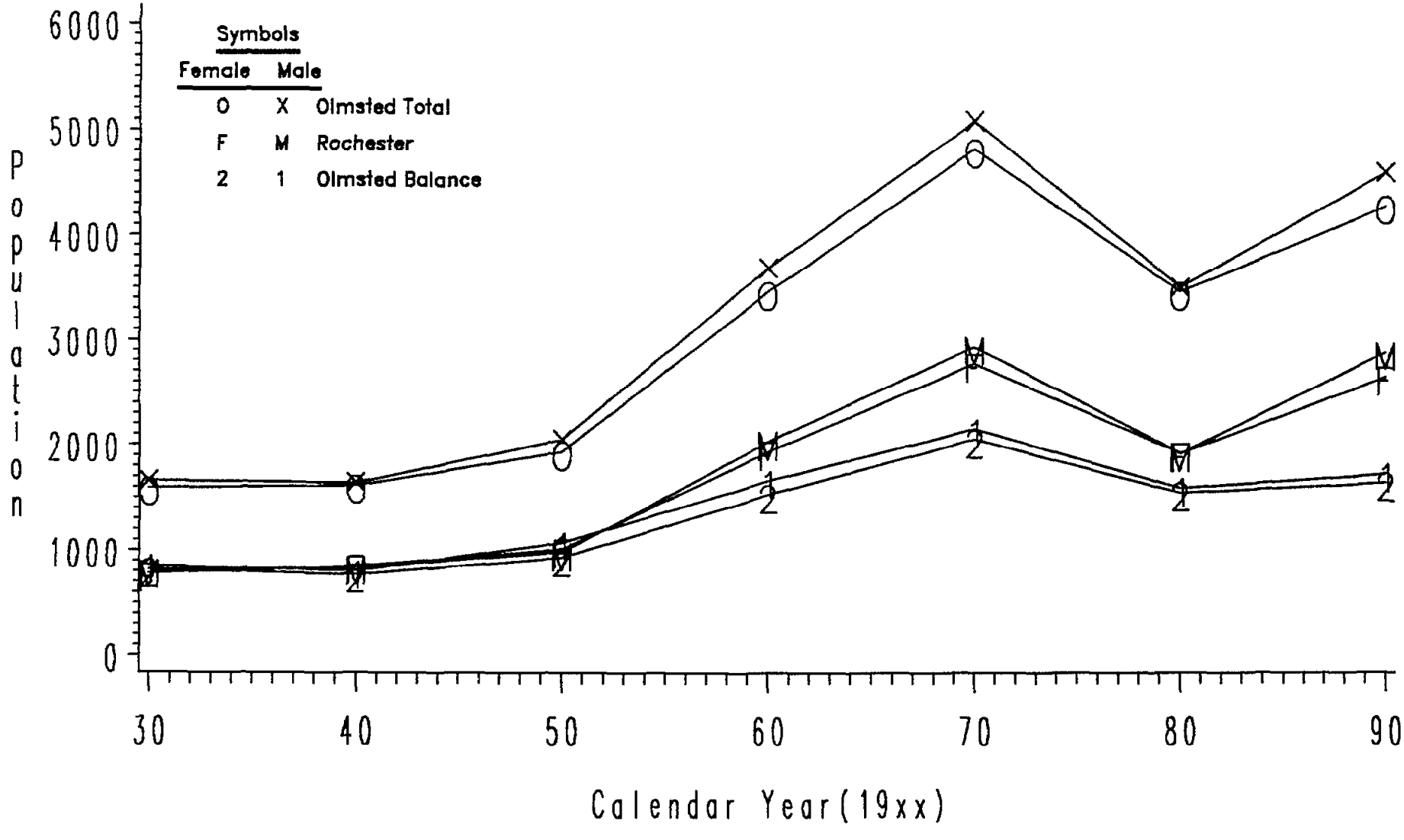
APPENDIX C--UNCORRECTED POPULATIONS
FIGURE 2
AGE_GRP=1-4



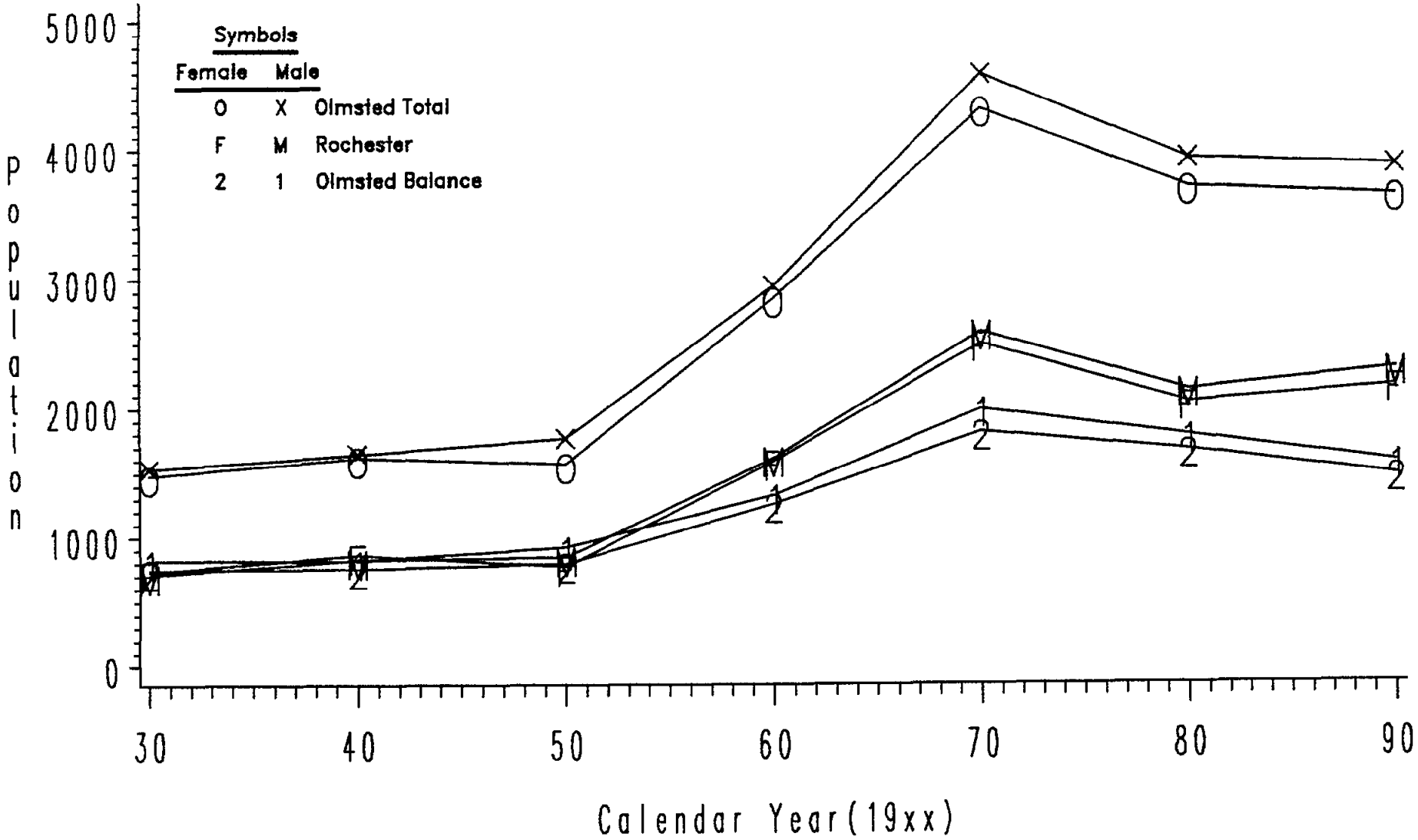
APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 3

AGE_GRP=5-9



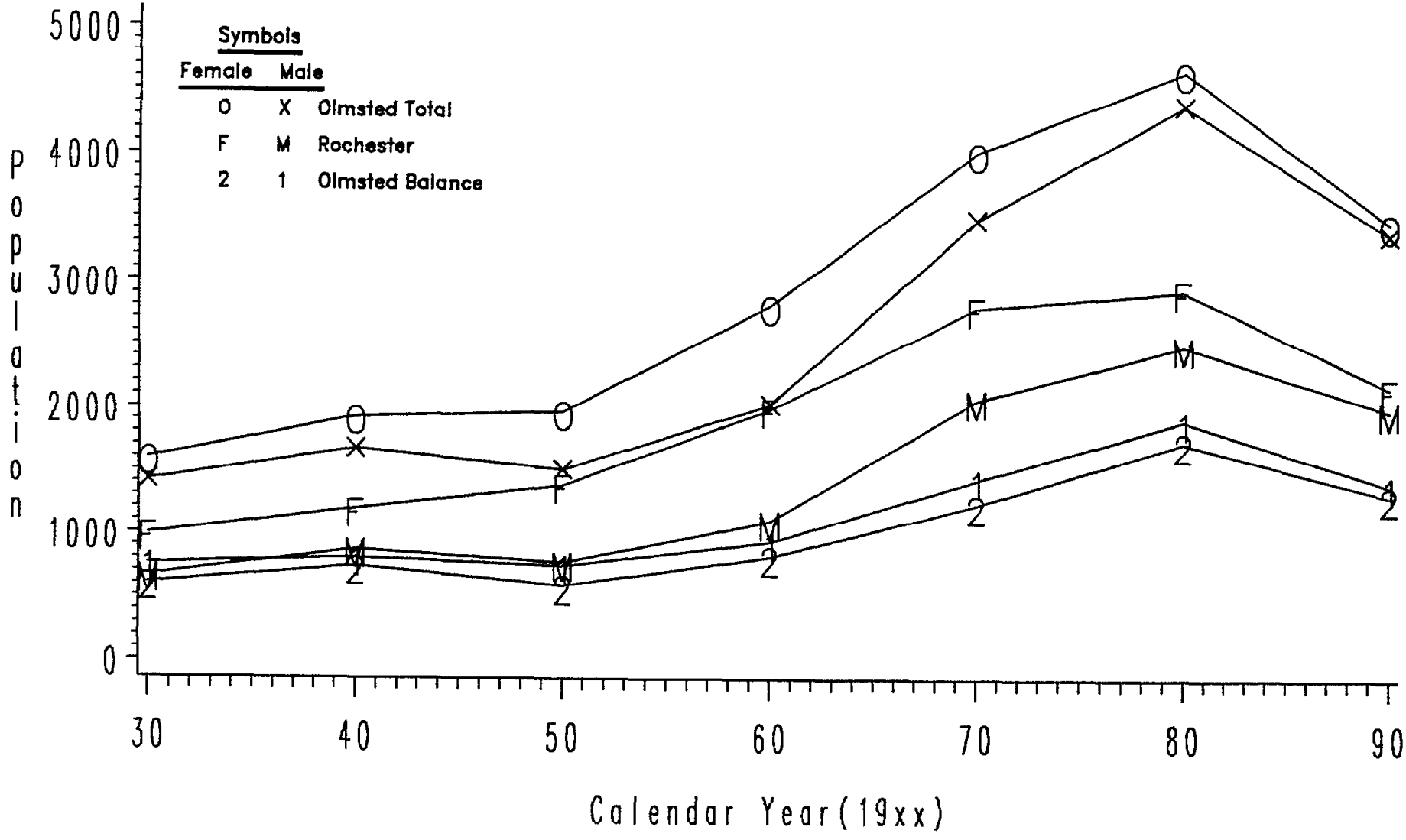
APPENDIX C--UNCORRECTED POPULATIONS
FIGURE 4
AGE_GRP=10-14



APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 5

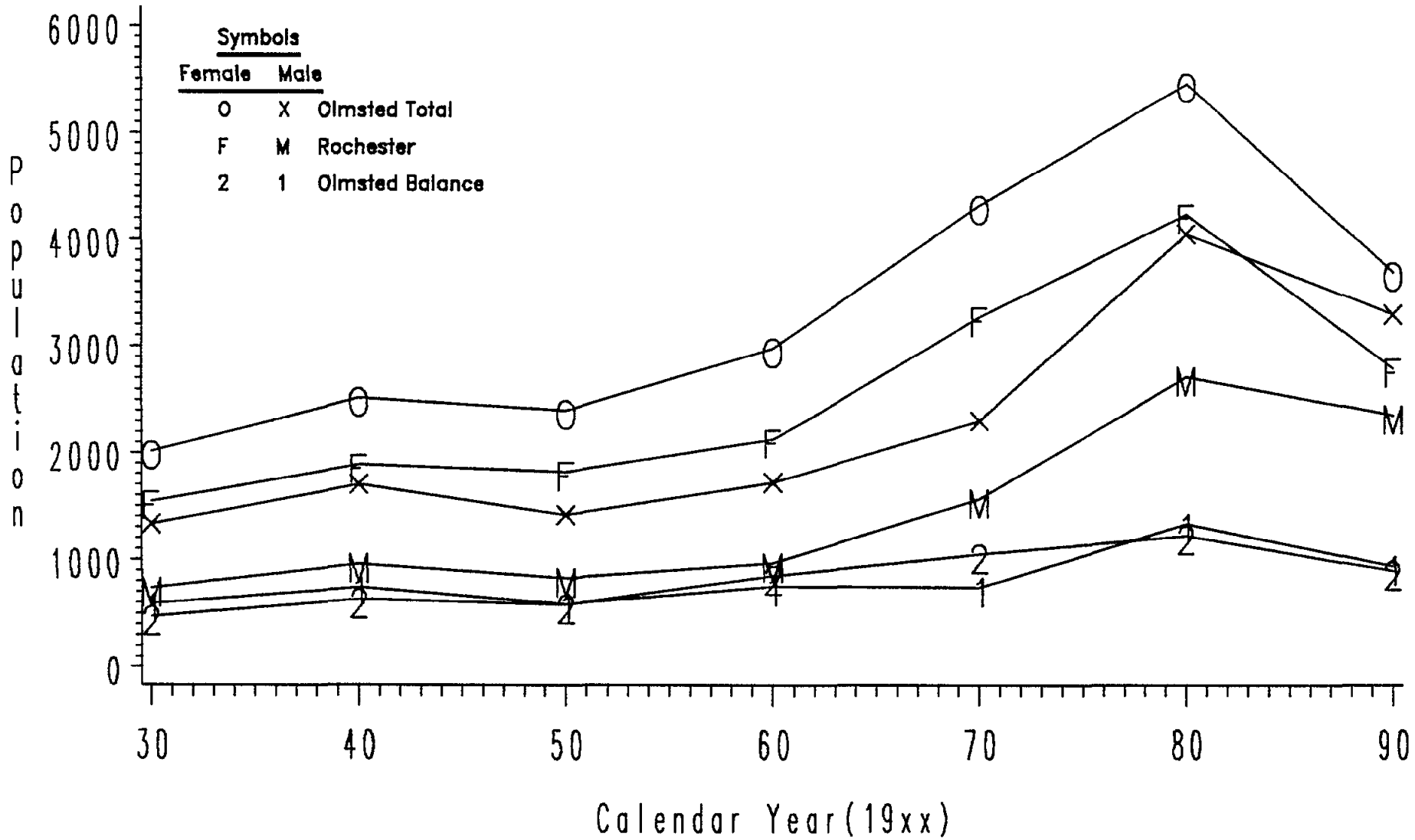
AGE_GRP=15-19



APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 6

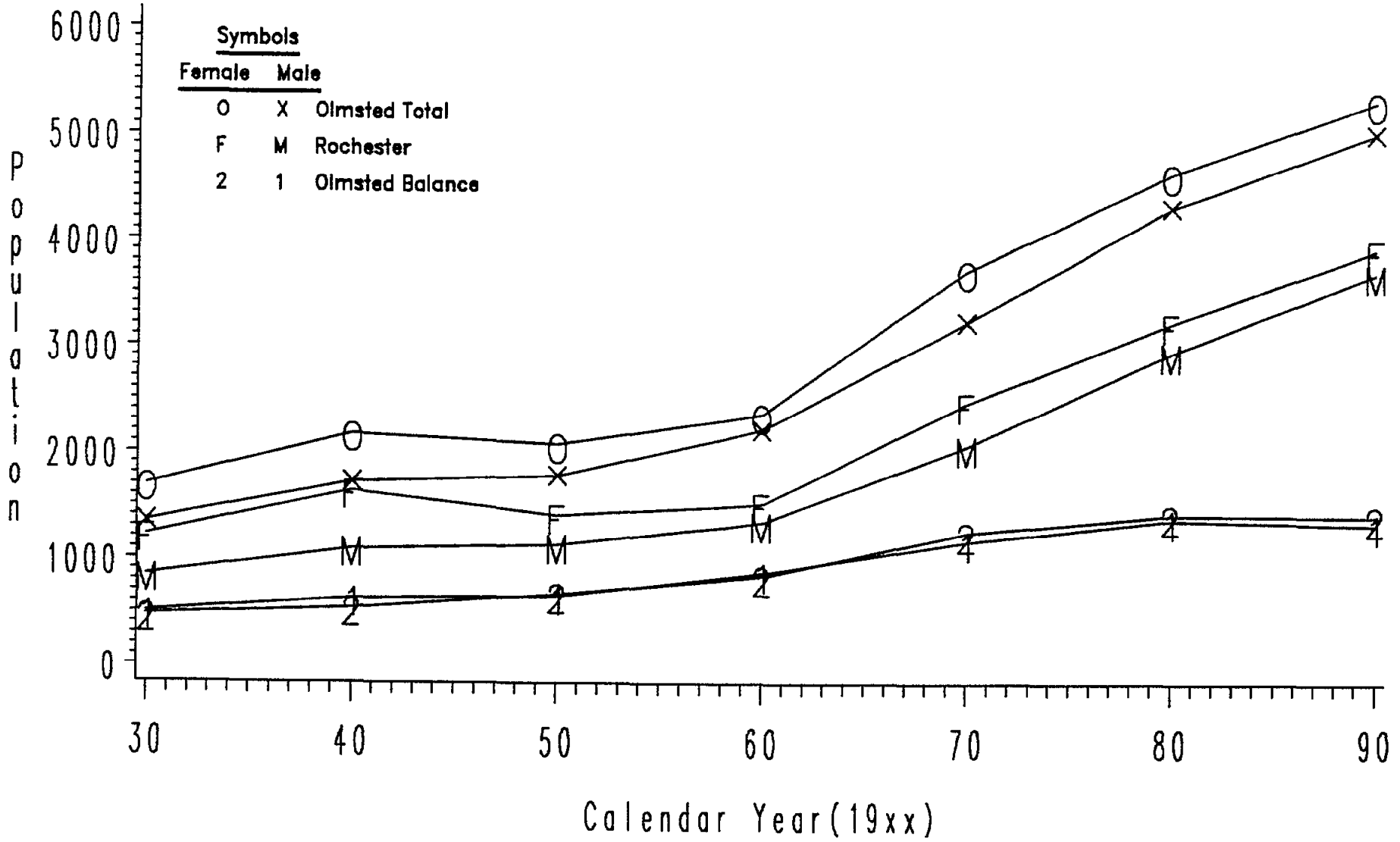
AGE_GRP=20-24



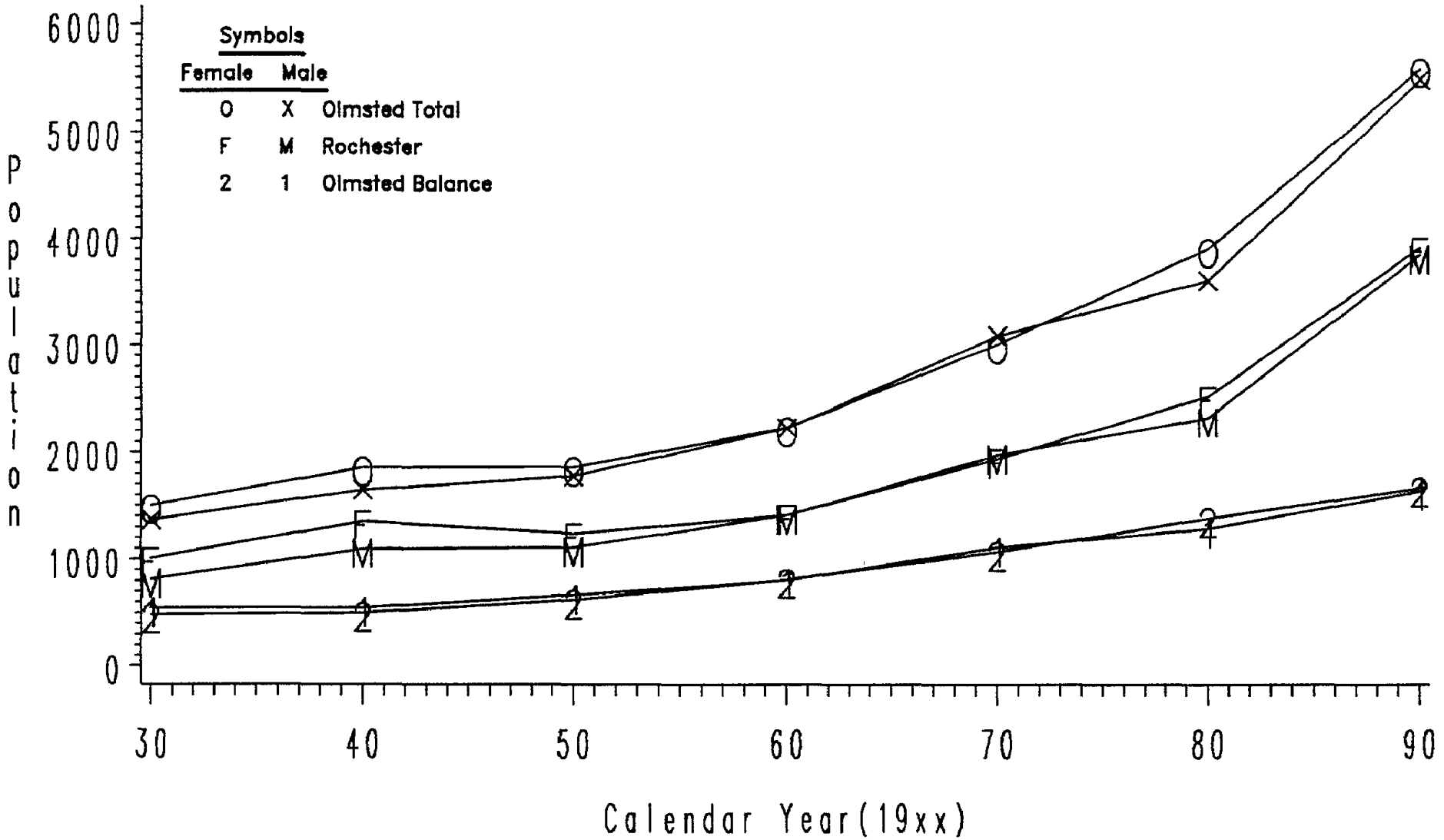
APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 7

AGE_GRP=25-29



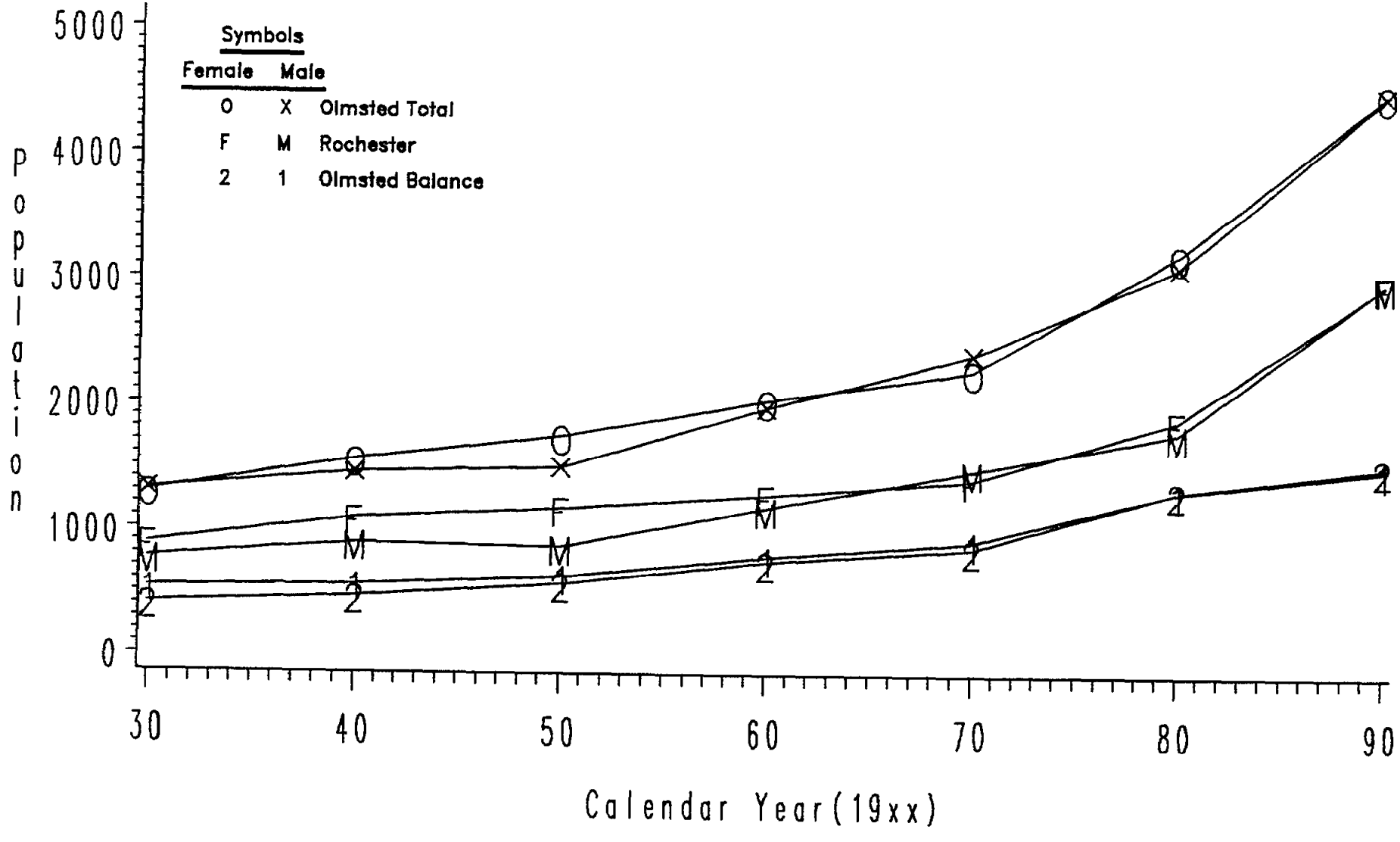
APPENDIX C--UNCORRECTED POPULATIONS
FIGURE 8
AGE_GRP=30-34



APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 9

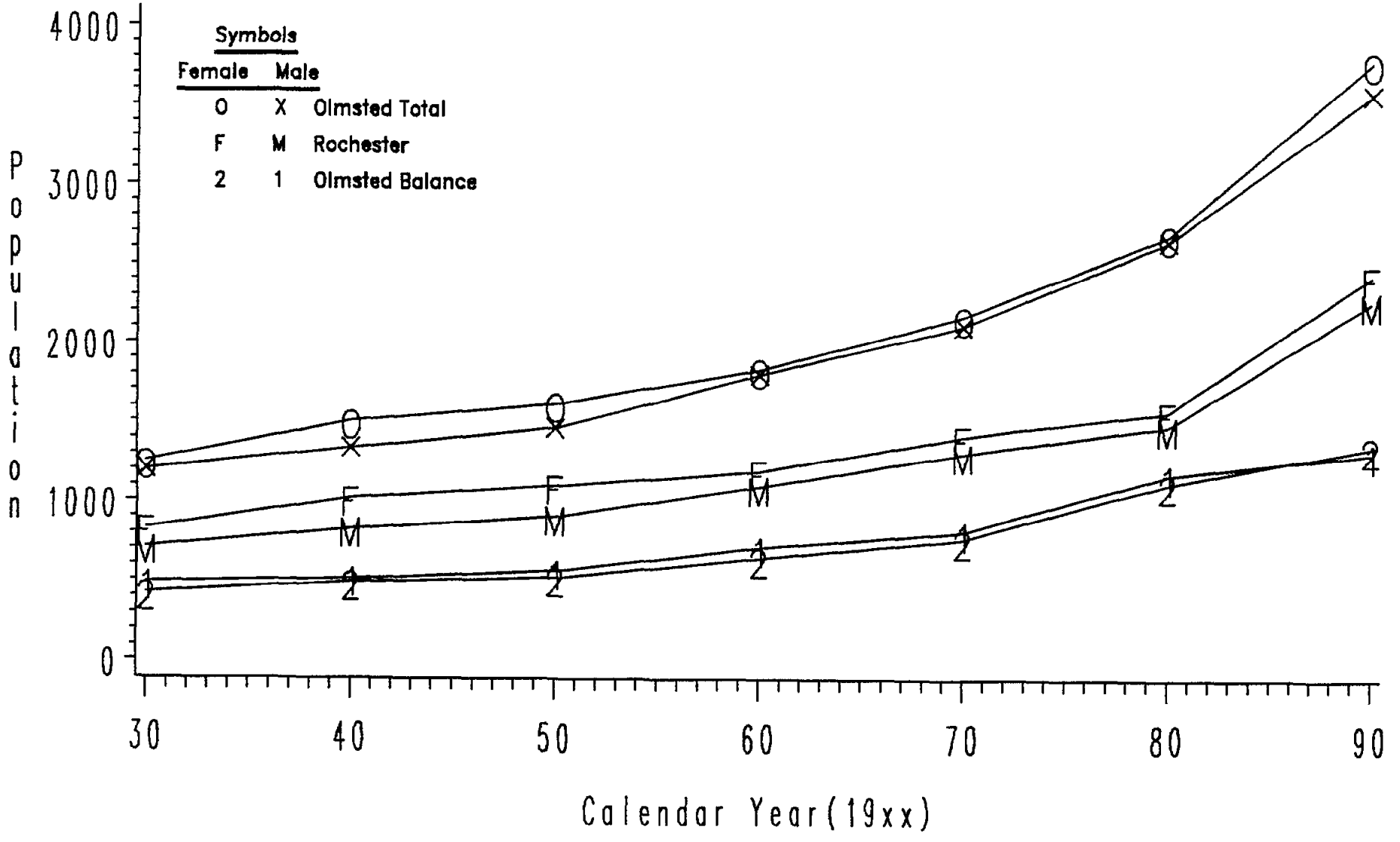
AGE_GRP=35-39



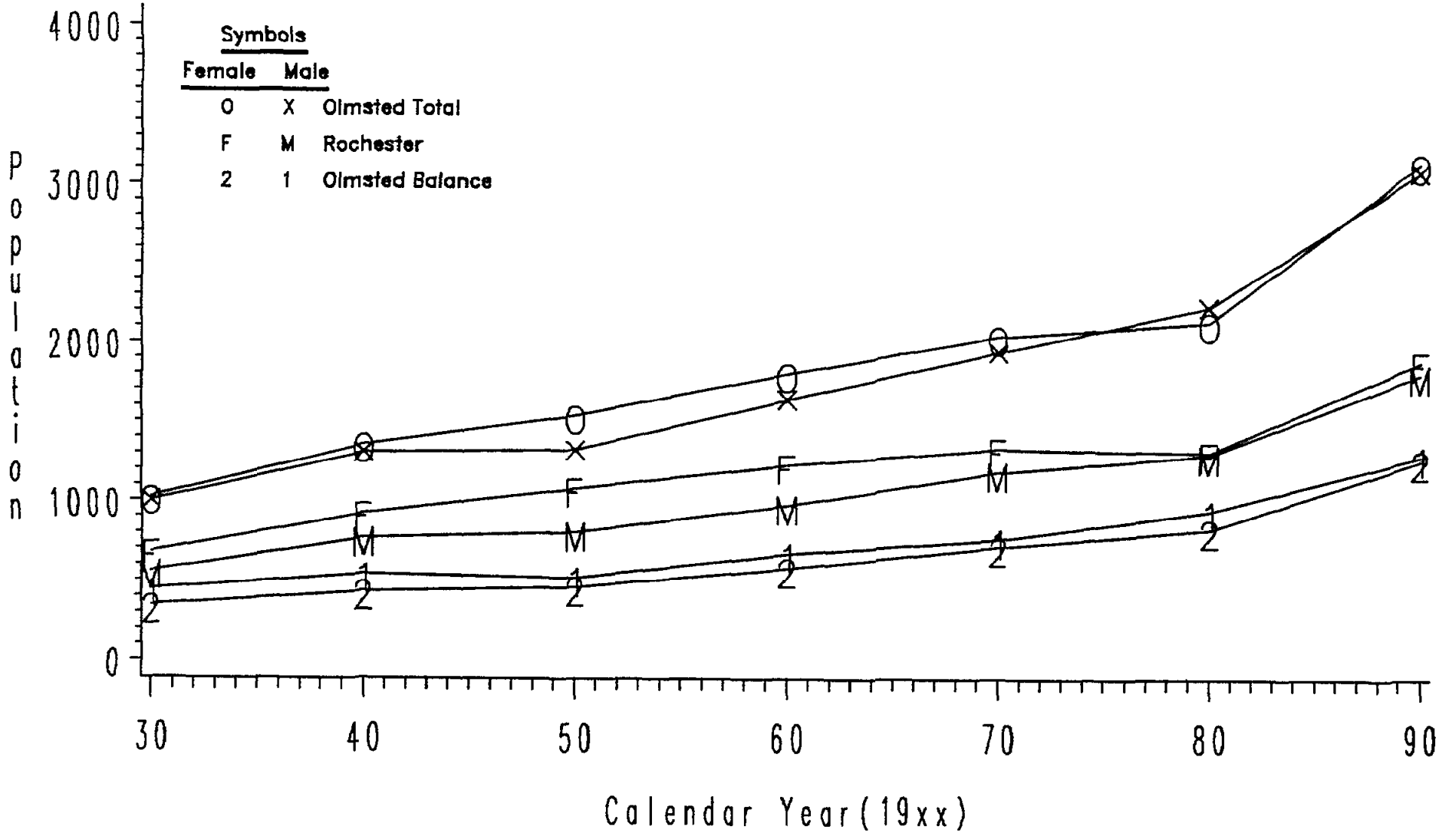
APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 10

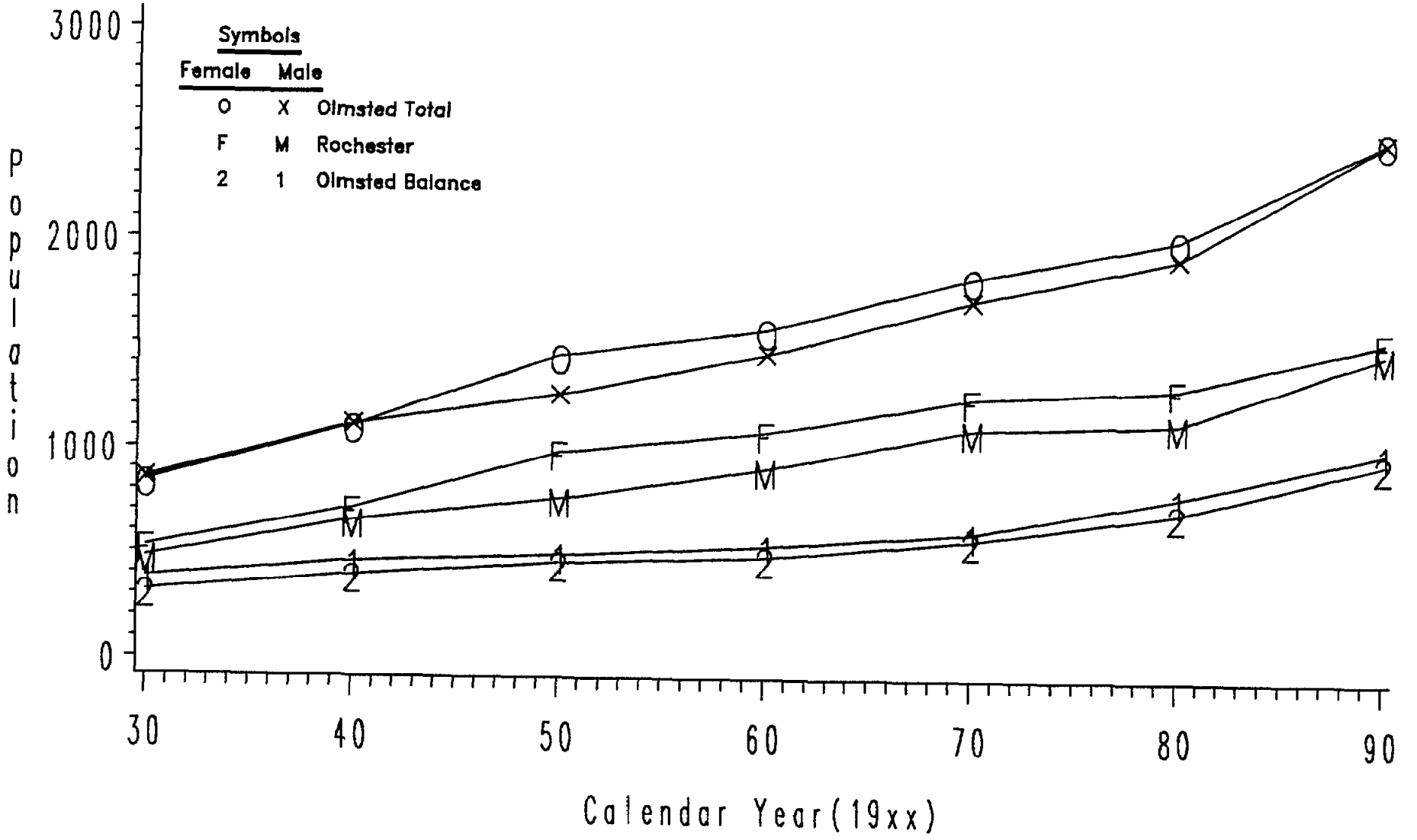
AGE_GRP=40-44



APPENDIX C--UNCORRECTED POPULATIONS
FIGURE 11
AGE_GRP=45-49



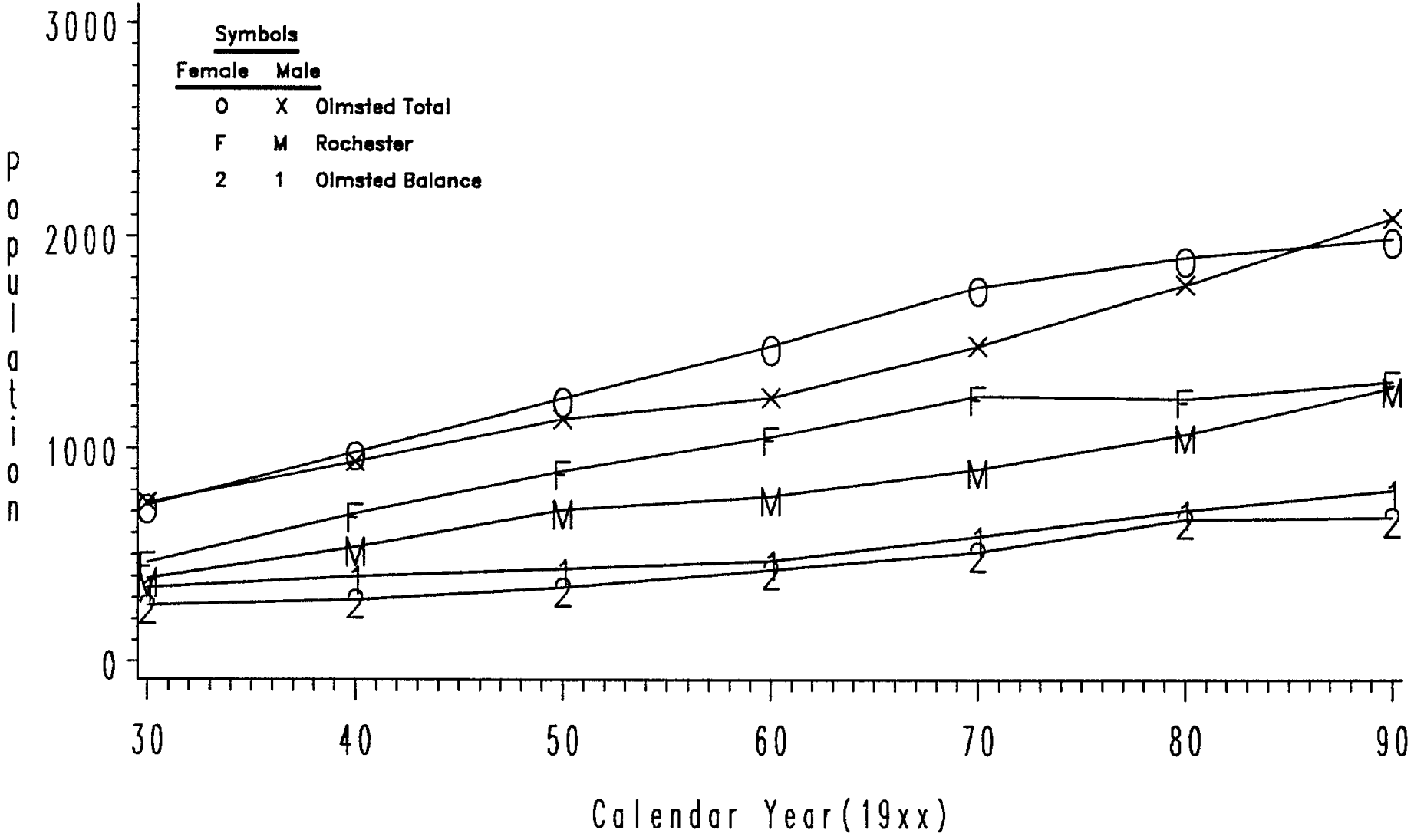
APPENDIX C--UNCORRECTED POPULATIONS
FIGURE 12
AGE_GRP=50-54



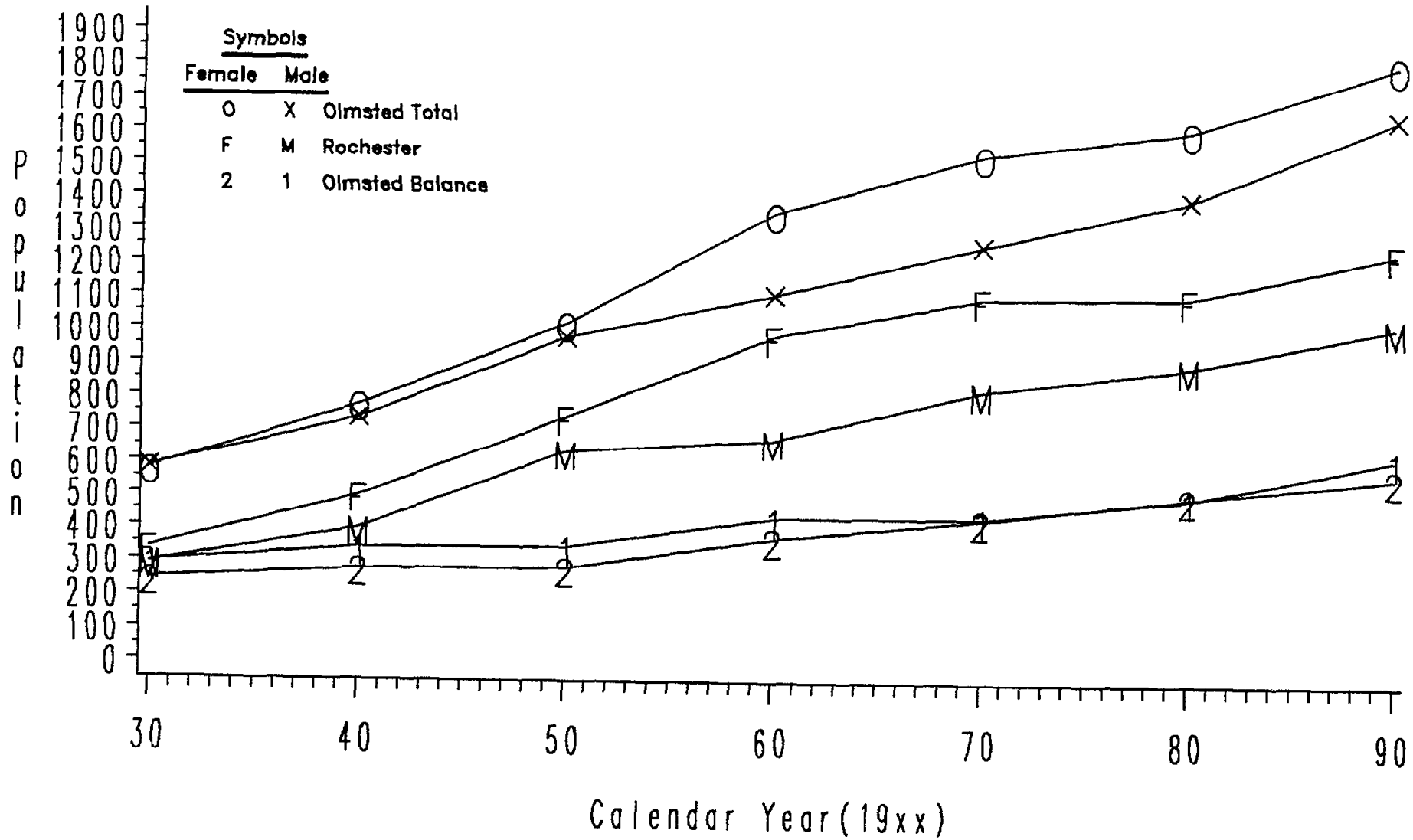
APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 13

AGE_GRP=55-59



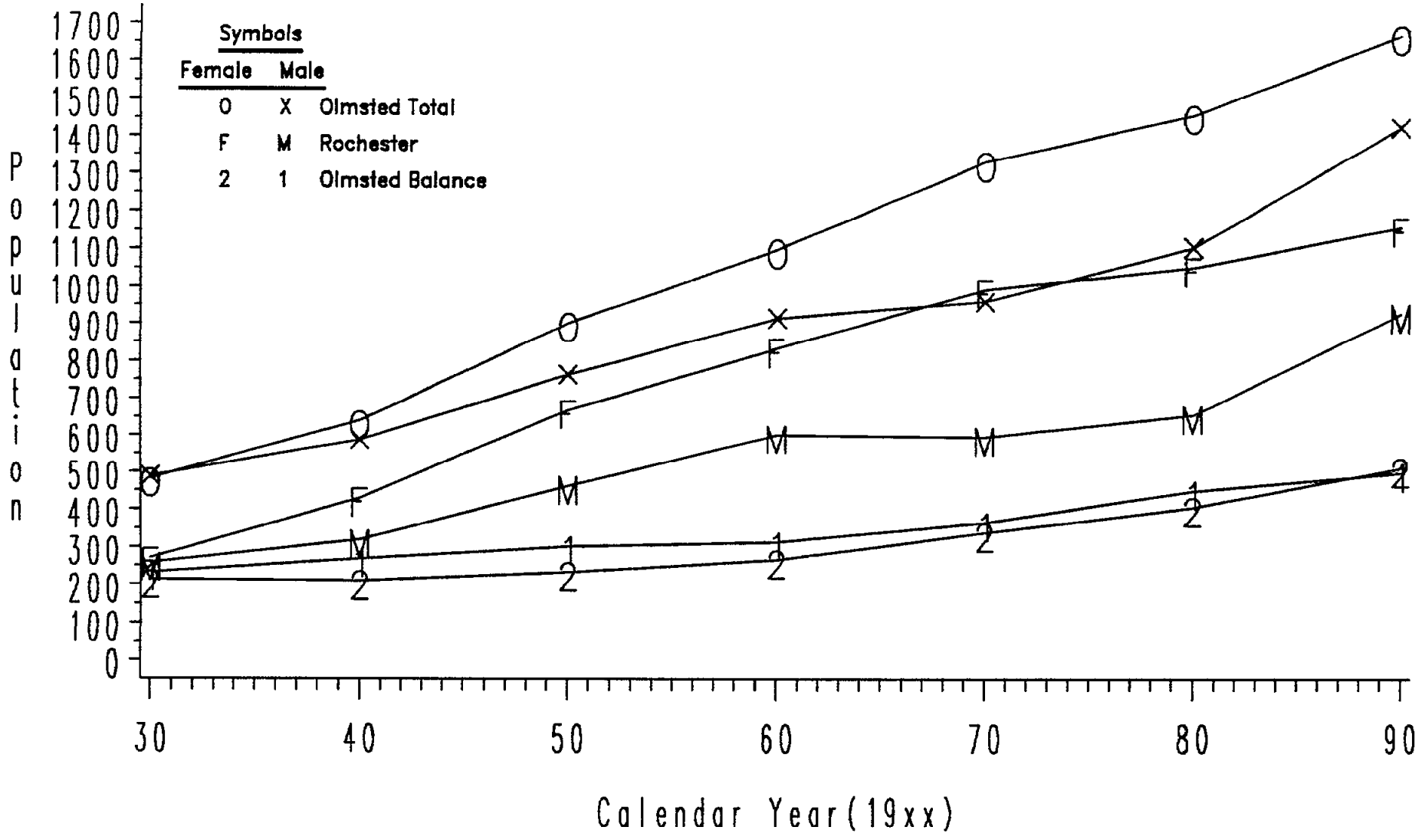
APPENDIX C--UNCORRECTED POPULATIONS
FIGURE 14
AGE_GRP=60-64



APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 15

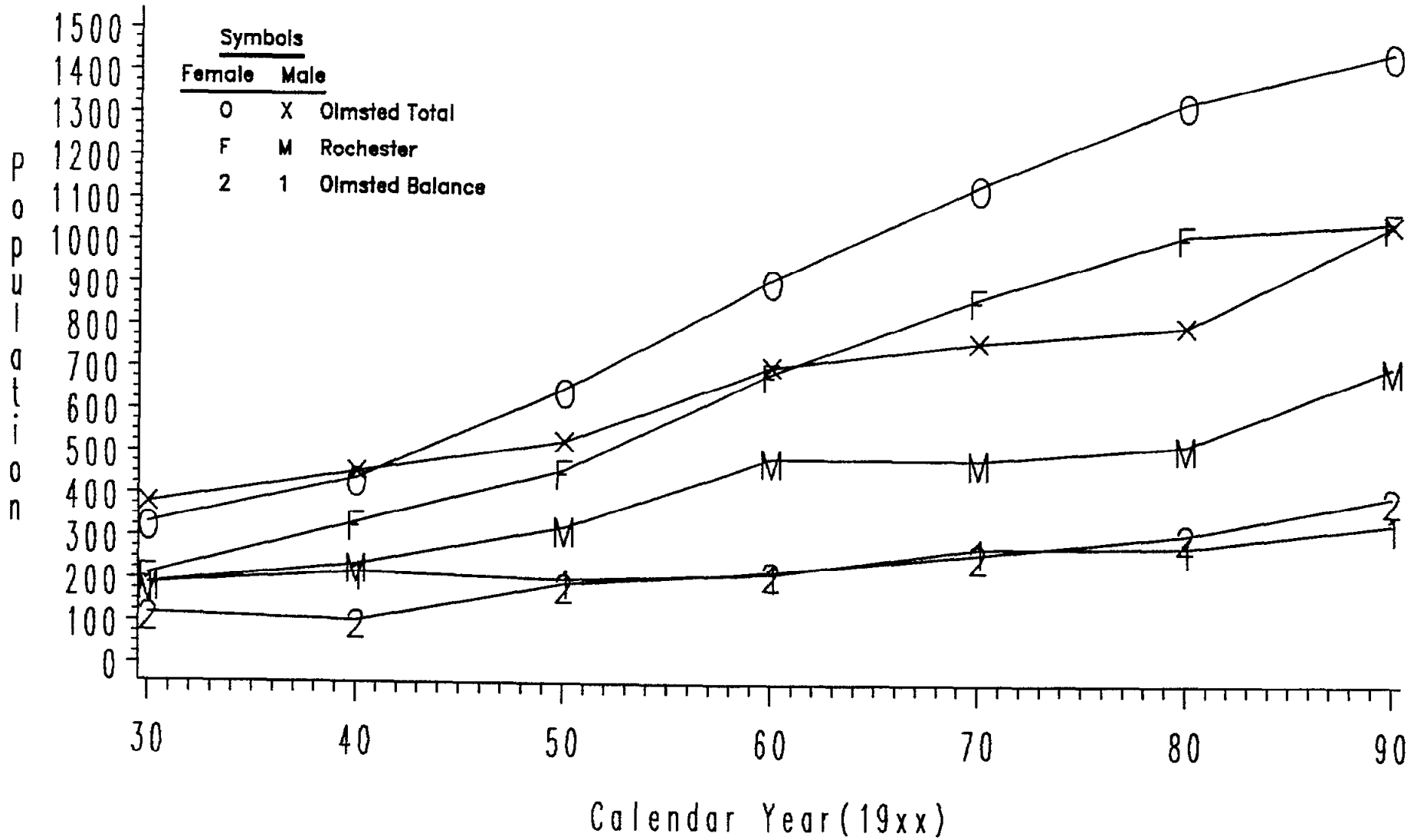
AGE_GRP=65-69



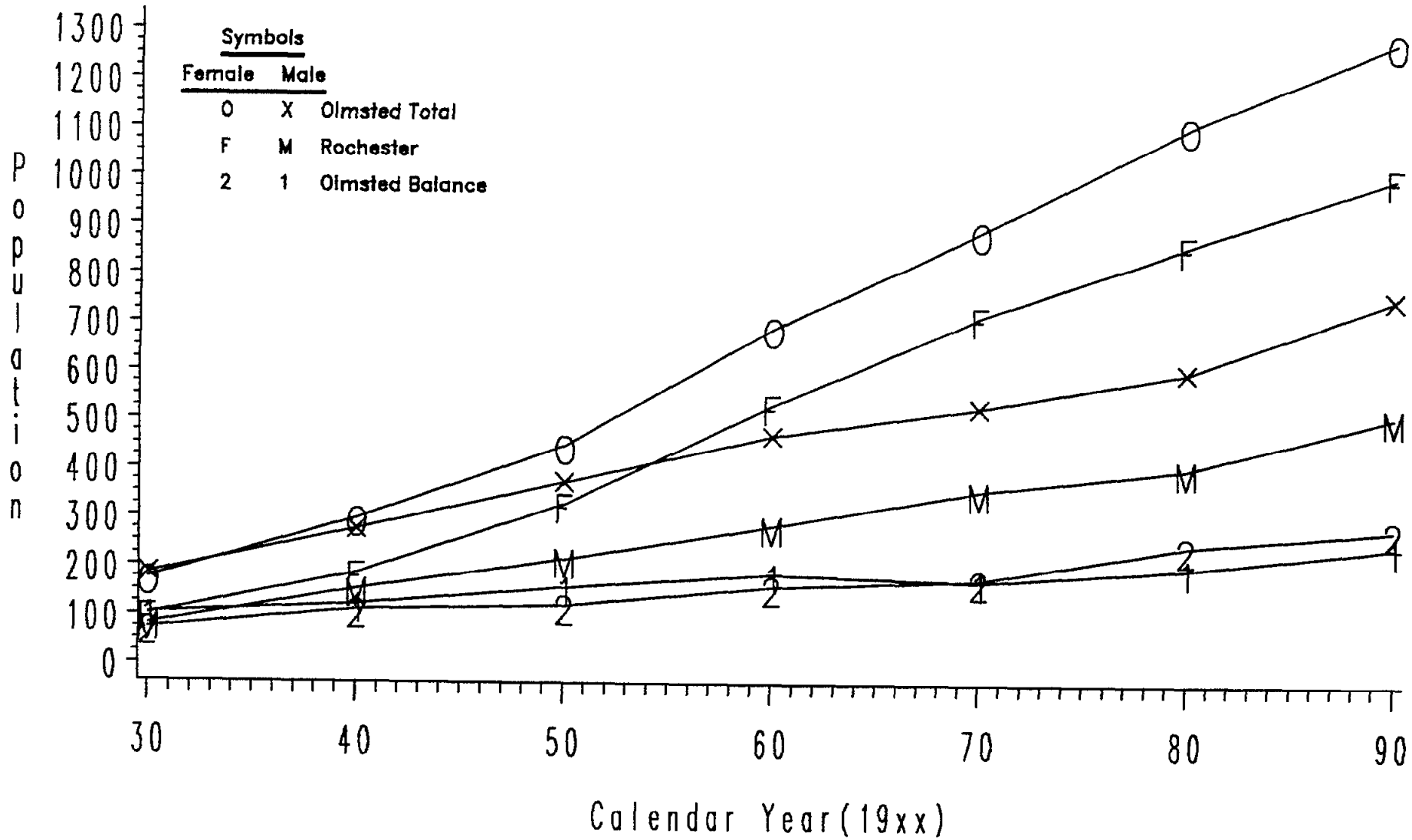
APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 1C

AGE_GRP=70-74



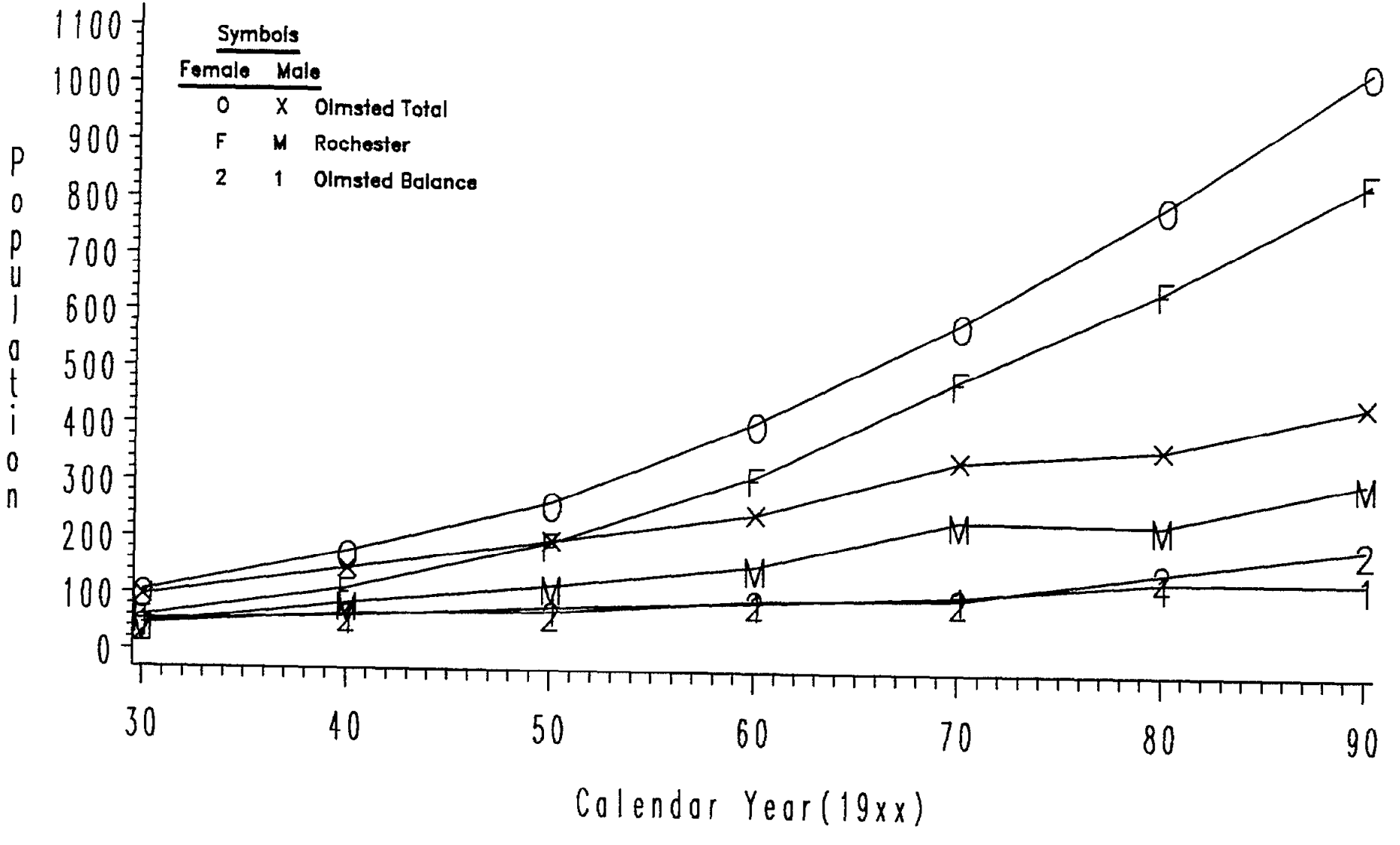
APPENDIX C--UNCORRECTED POPULATIONS
FIGURE 17
AGE_GRP=75-79



APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 18

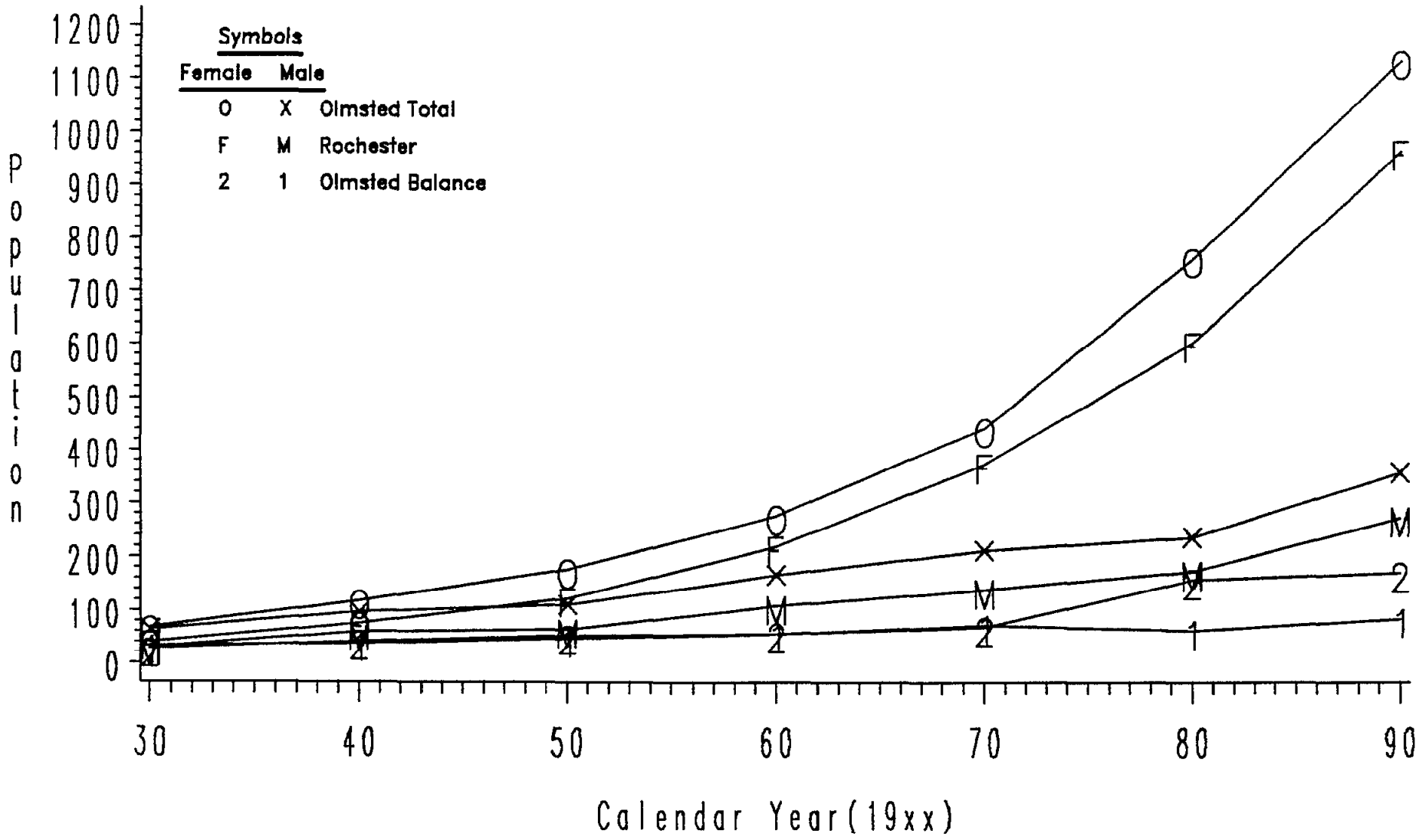
AGE_GRP=80-84



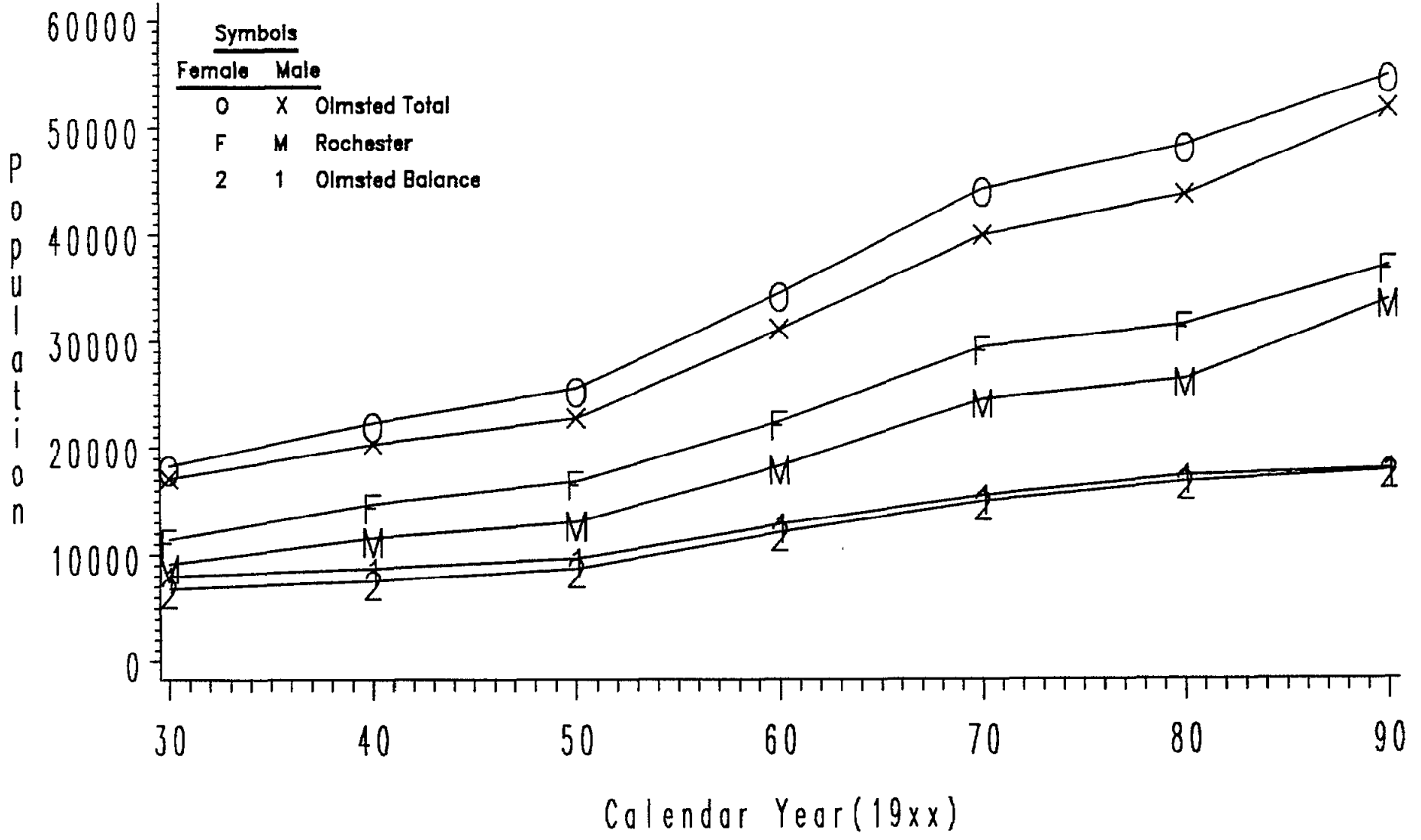
APPENDIX C--UNCORRECTED POPULATIONS

FIGURE 1e

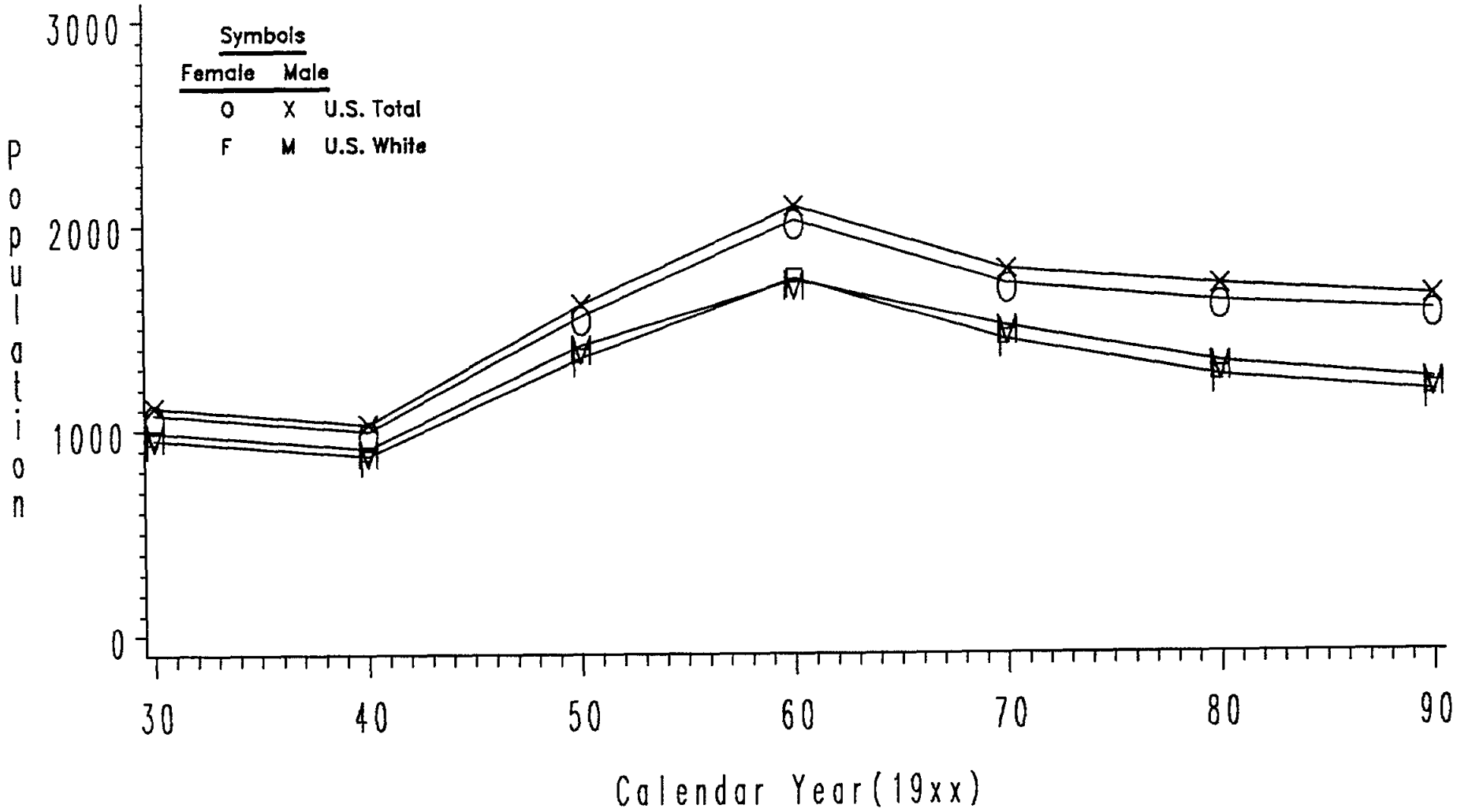
AGE_GRP=85+



APPENDIX C--UNCORRECTED POPULATIONS
FIGURE 20
ALL AGES



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 21
AGE_GRP=0

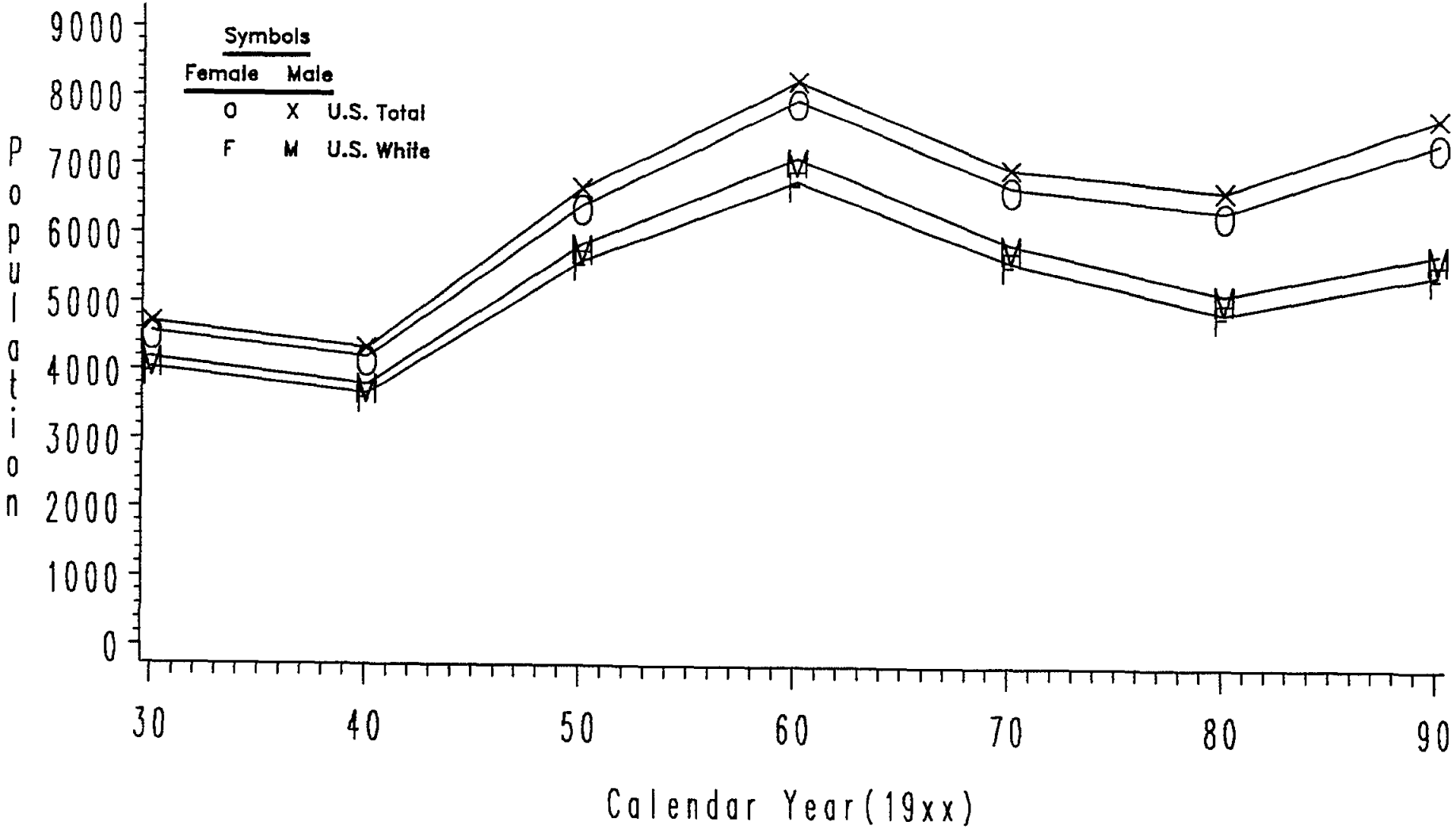


APPENDIX C--U. S. POPULATIONS

** U.S. POPULATIONS IN THOUSANDS **

FIGURE 22

AGE_GRP=1-4

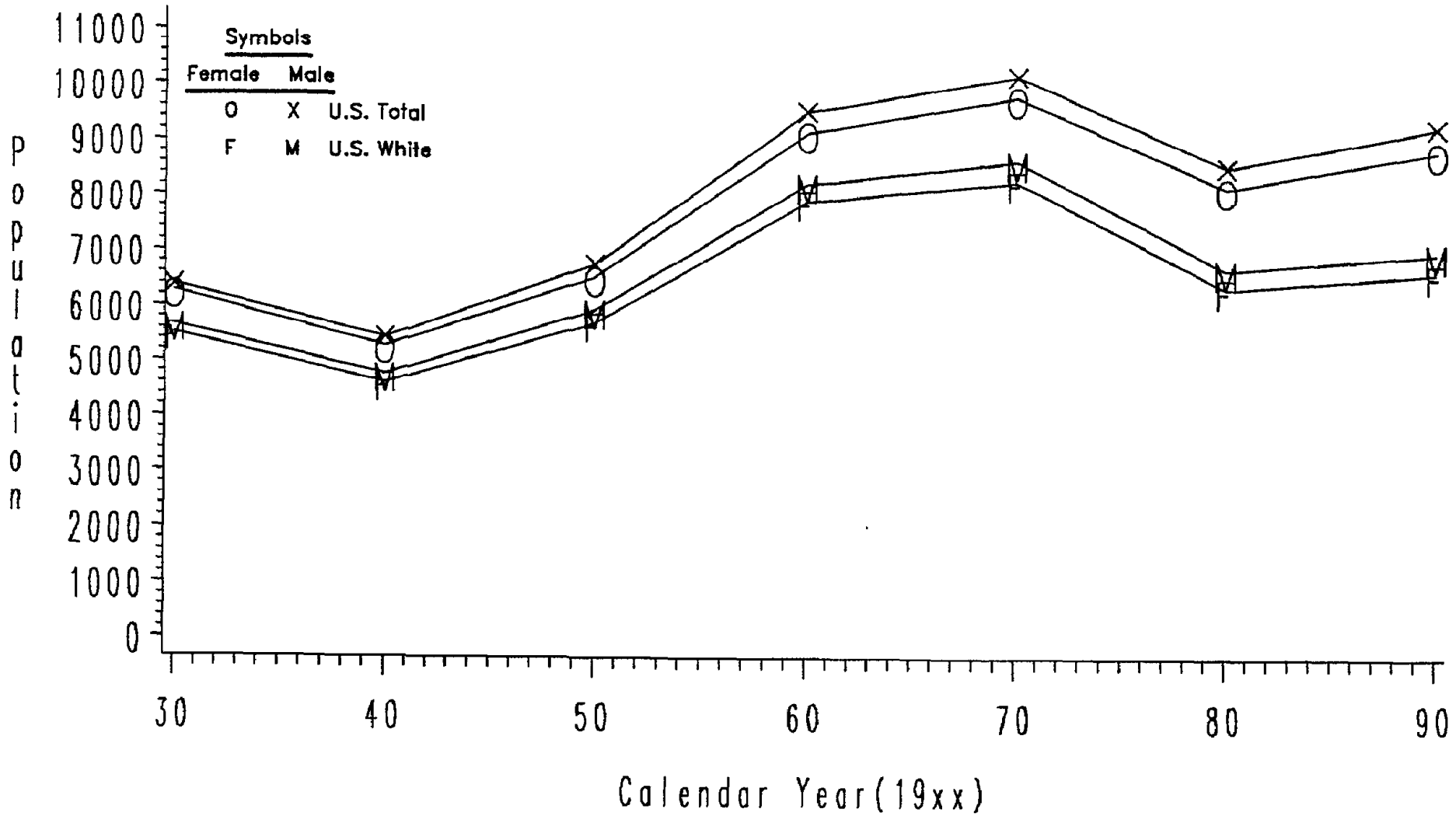


APPENDIX C--U. S. POPULATIONS

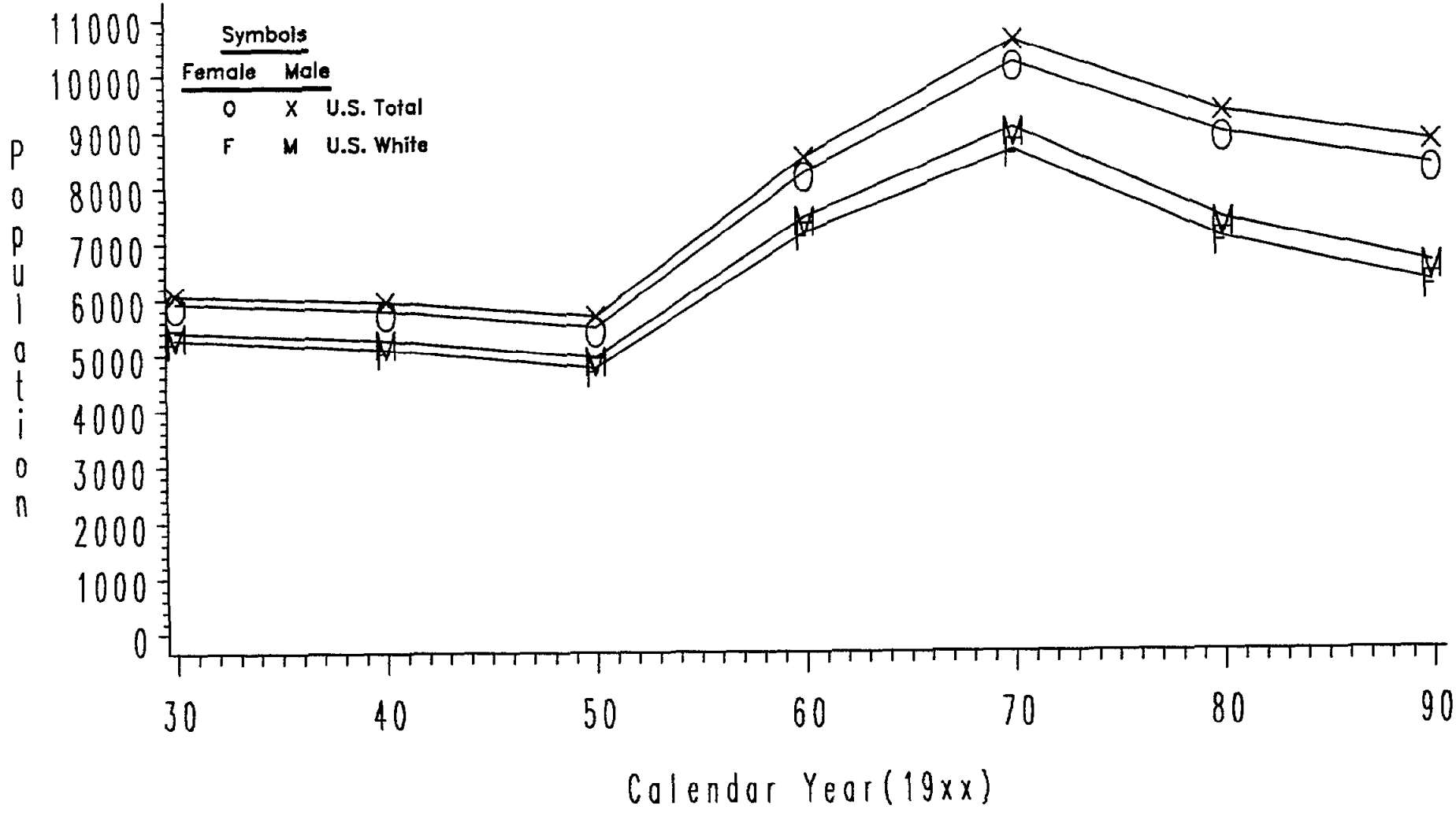
** U.S. POPULATIONS IN THOUSANDS **

FIGURE 23

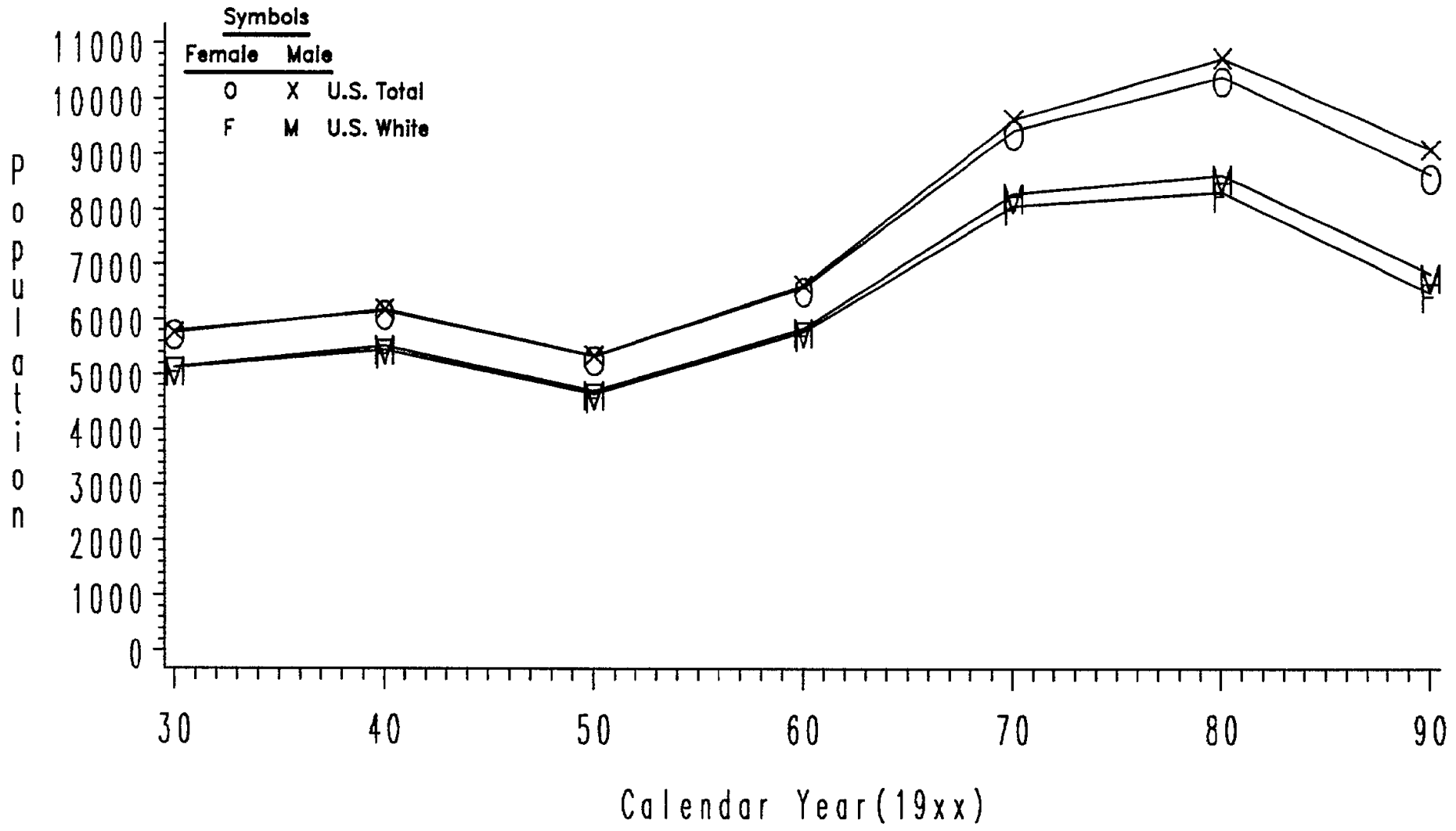
AGE_GRP=5-9



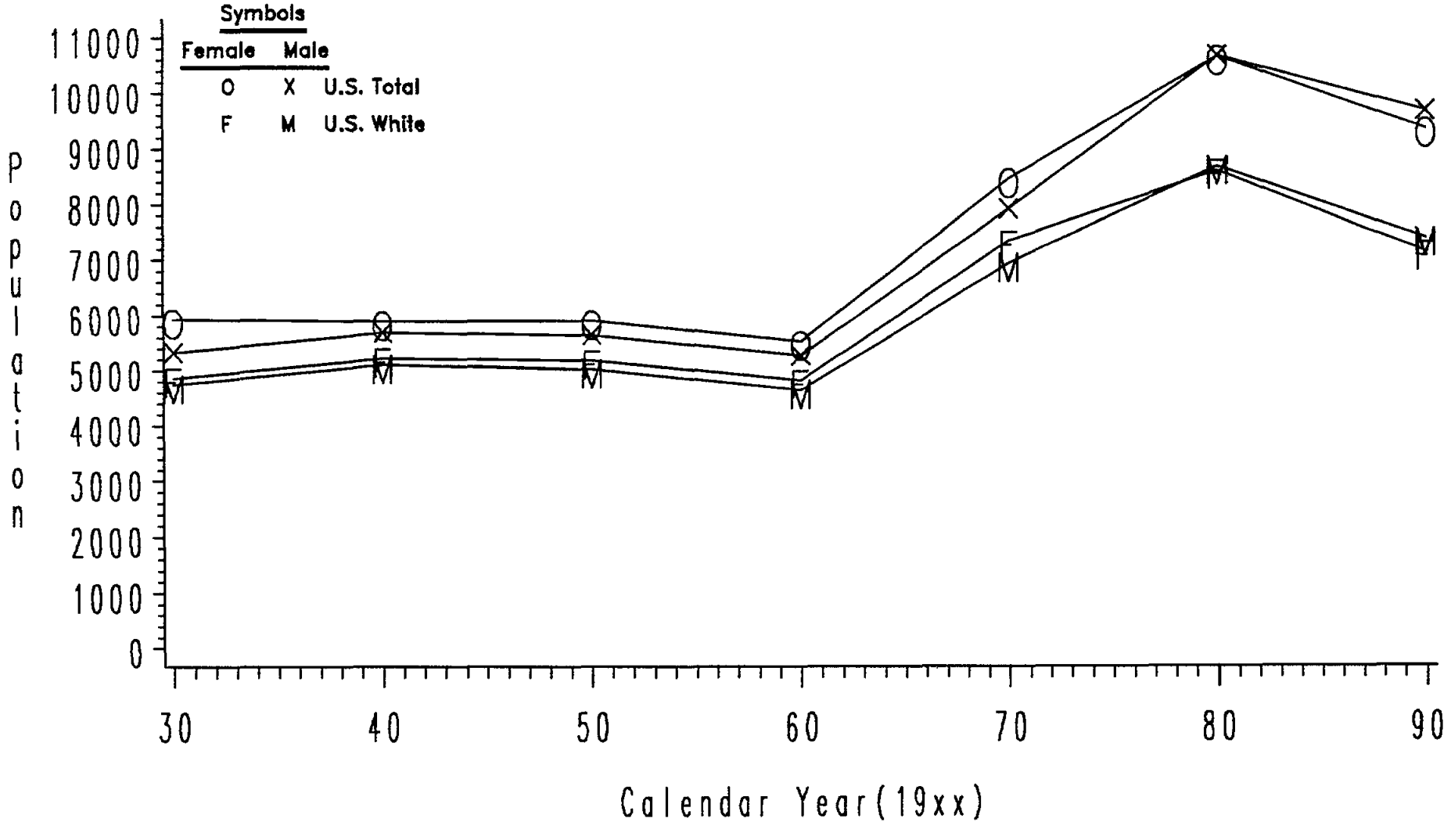
APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 24
AGE_GRP=10-14



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 25
AGE_GRP=15-19



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 2c
AGE_GRP=20-24

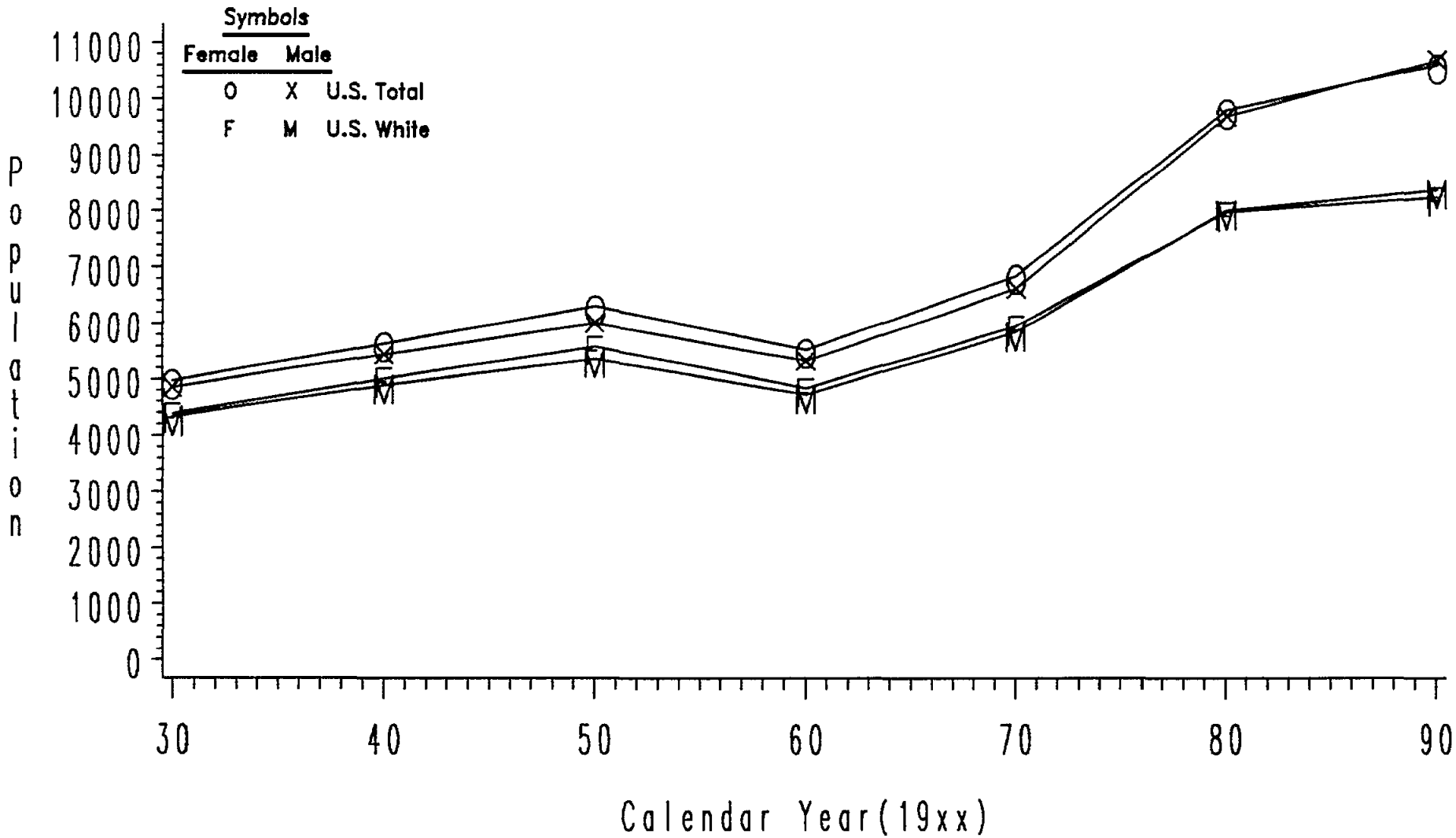


APPENDIX C--U. S. POPULATIONS

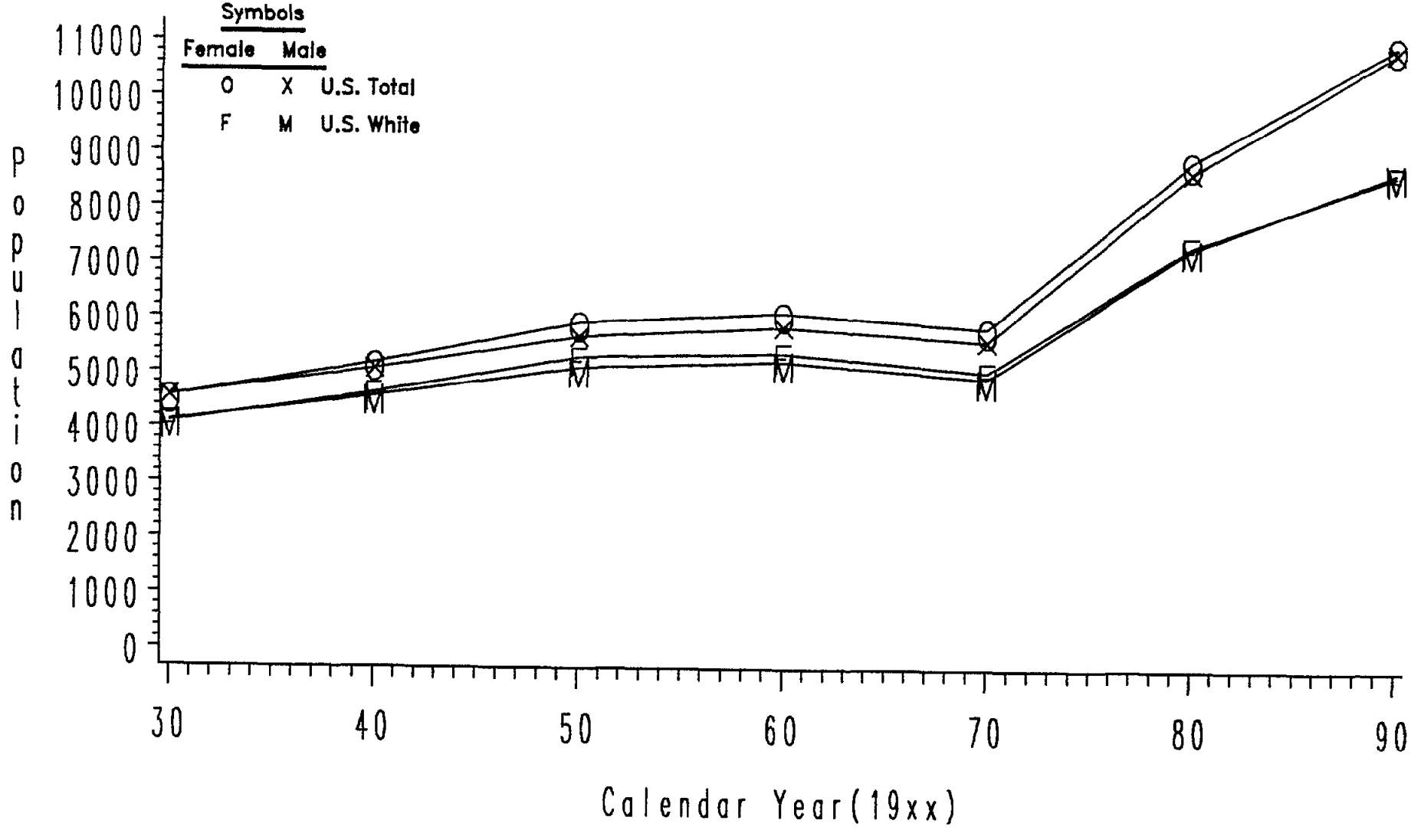
** U.S. POPULATIONS IN THOUSANDS **

FIGURE 27

AGE_GRP=25-29



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 28
AGE_GRP=30-34

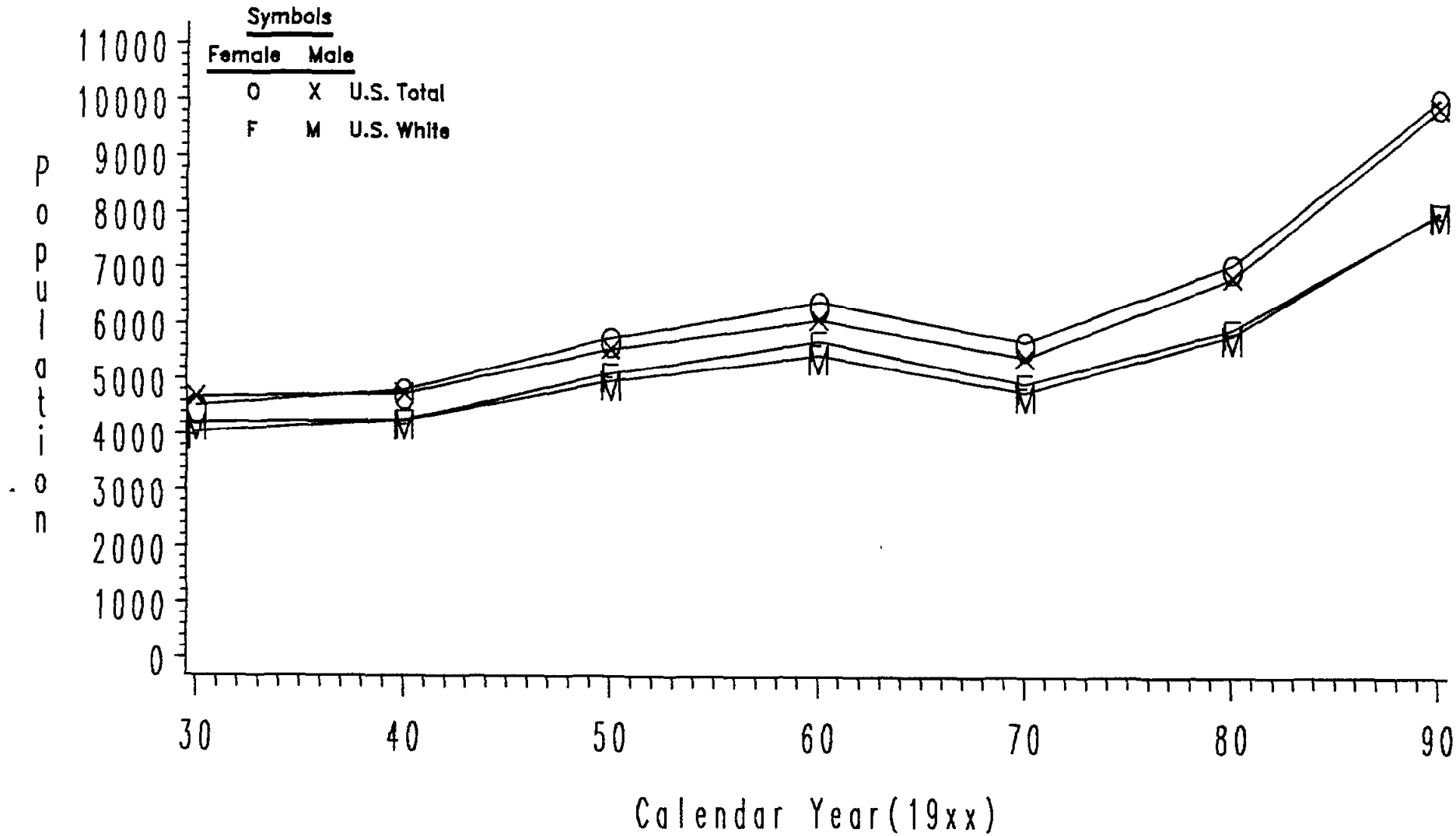


APPENDIX C--U. S. POPULATIONS

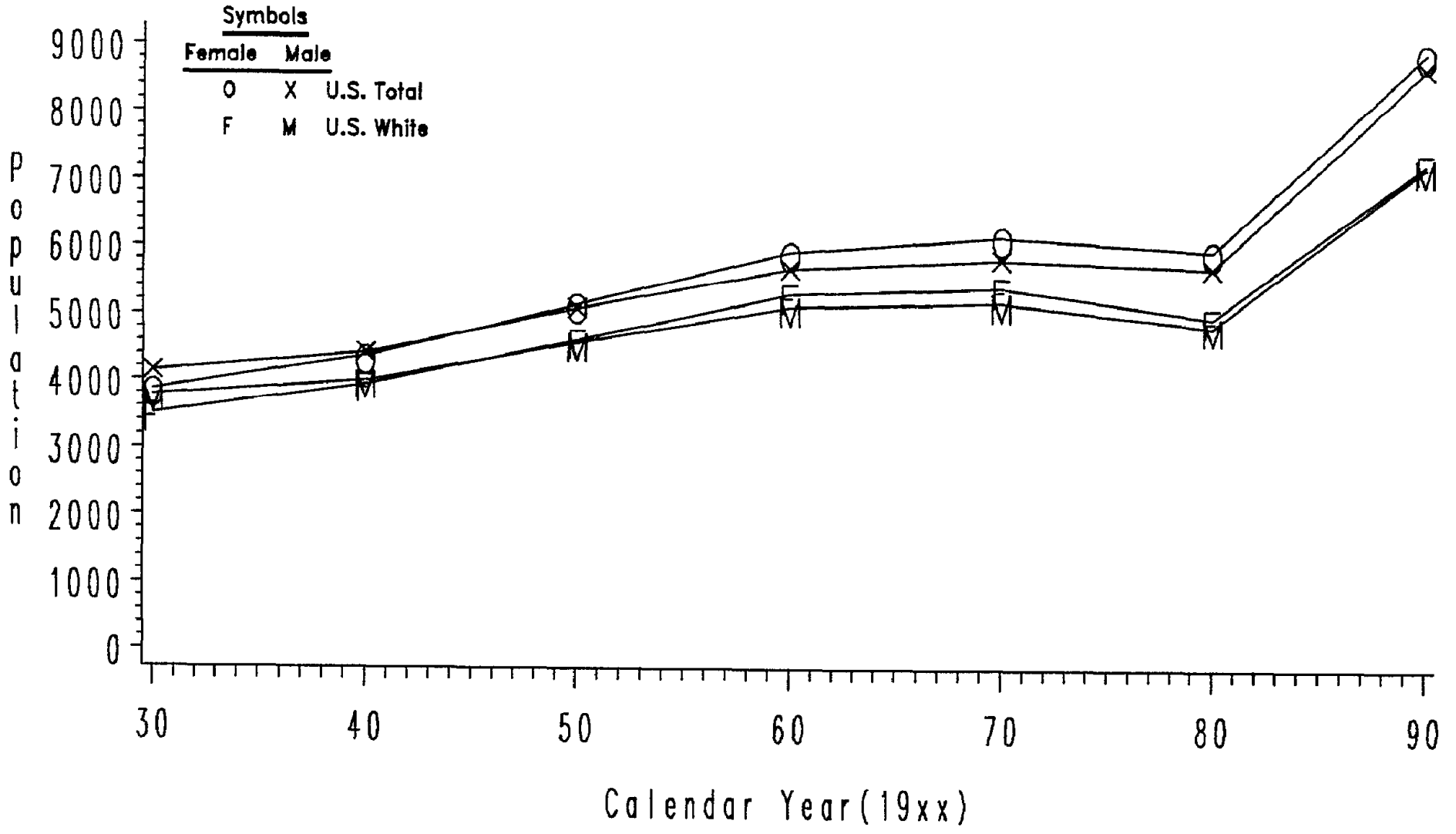
** U.S. POPULATIONS IN THOUSANDS **

FIGURE 29

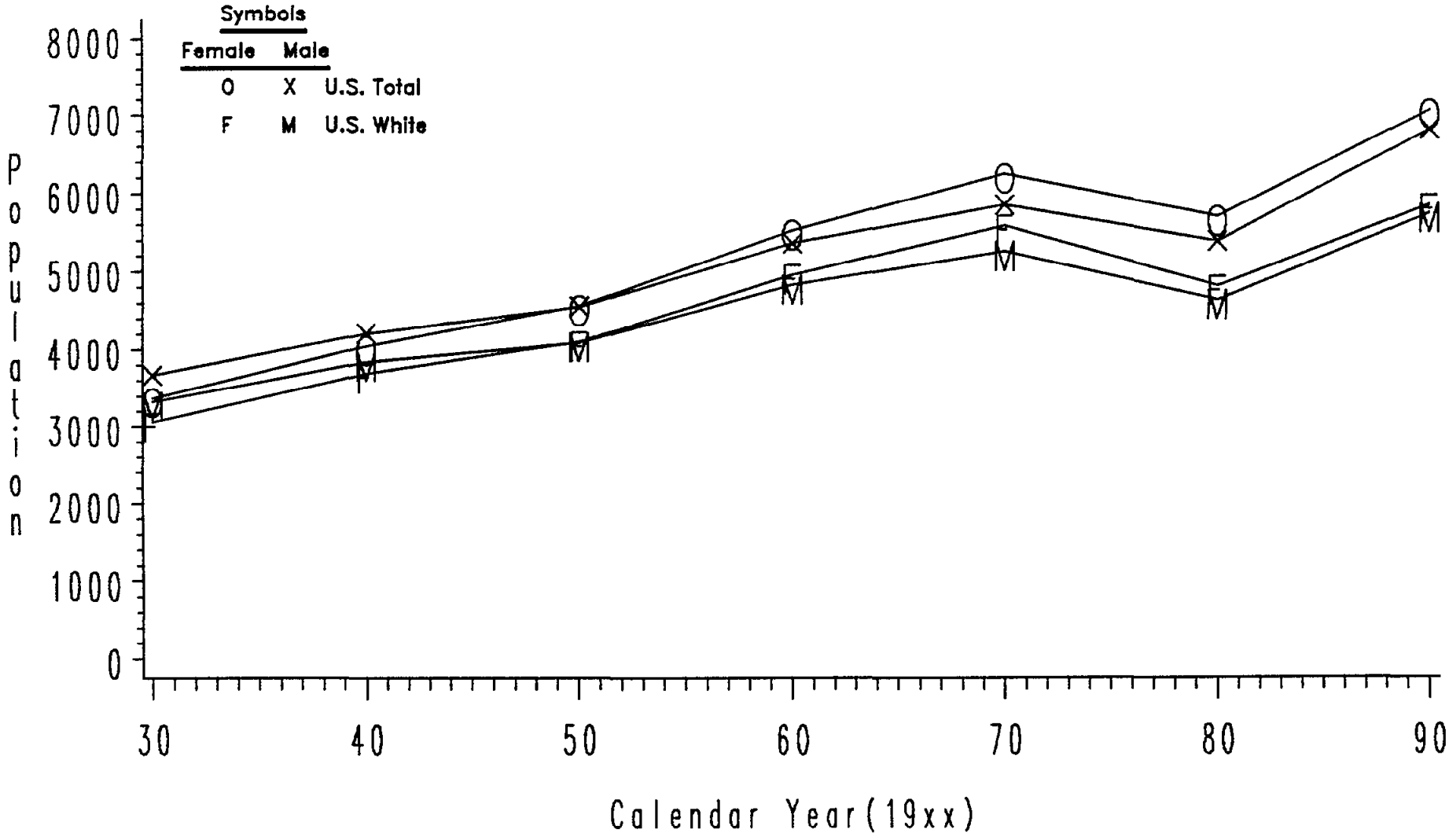
AGE_GRP=35-39



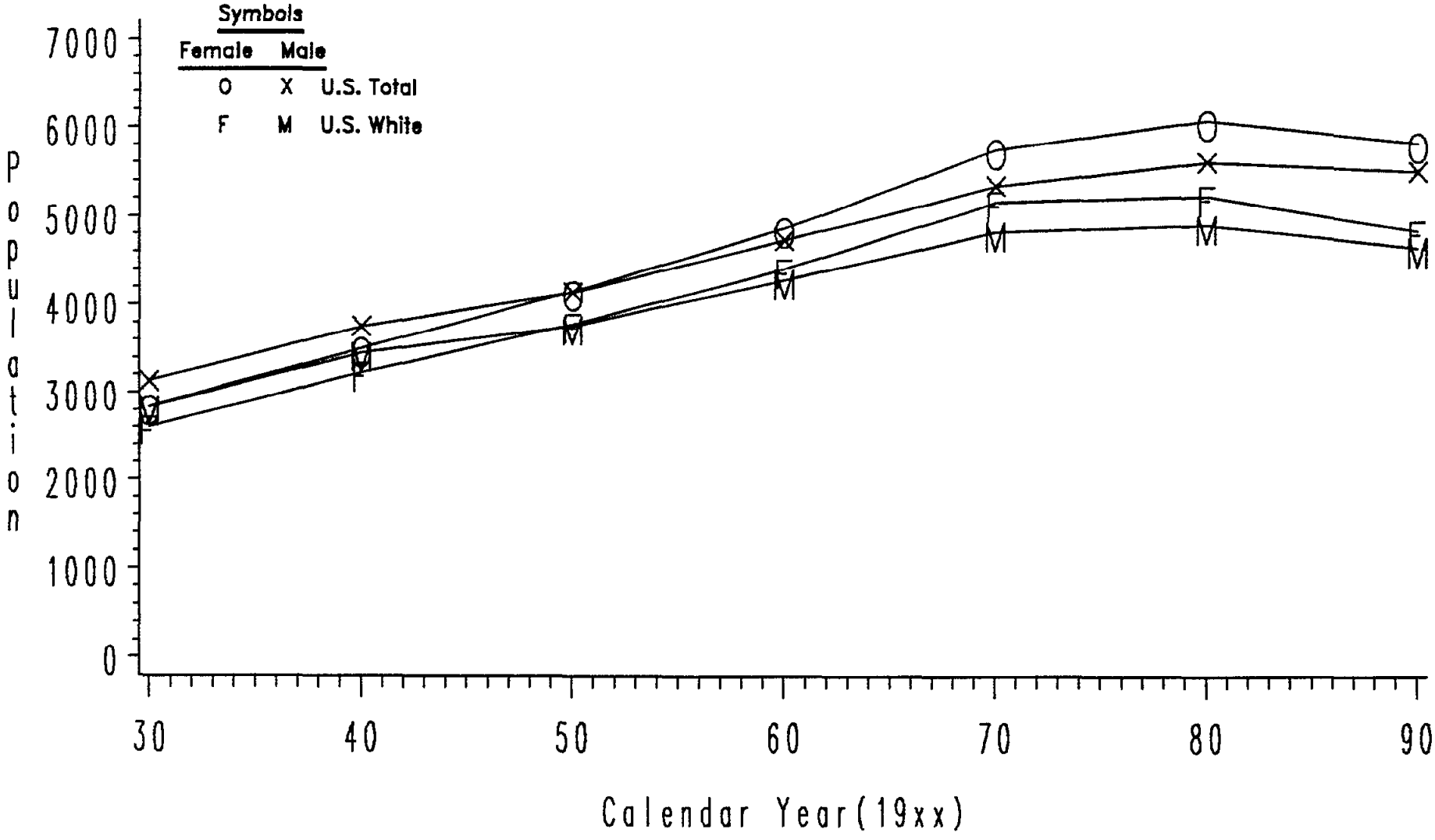
APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 30
AGE_GRP=40-44



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 31
AGE_GRP=45-49



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 32
AGE_GRP=50-54

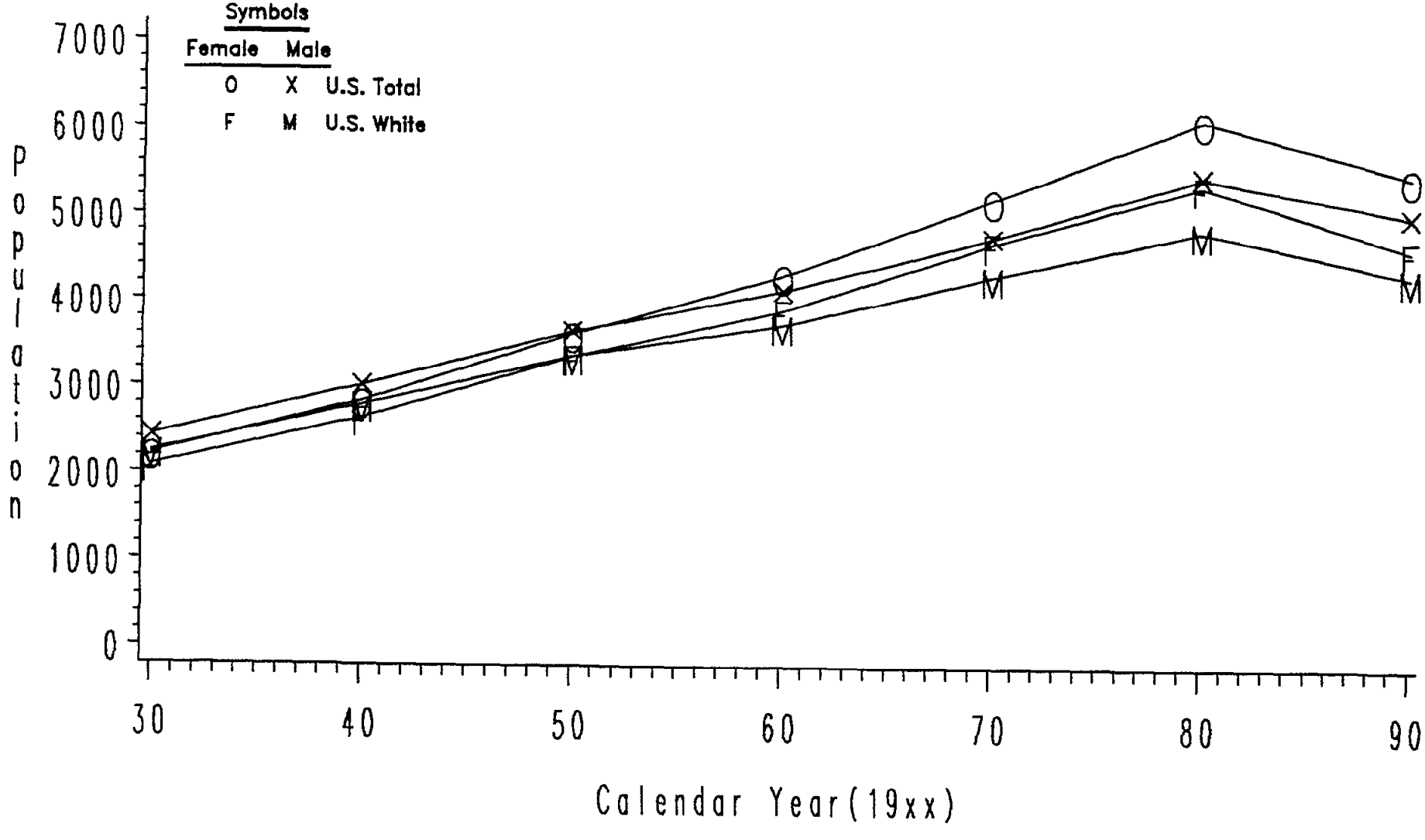


APPENDIX C--U. S. POPULATIONS

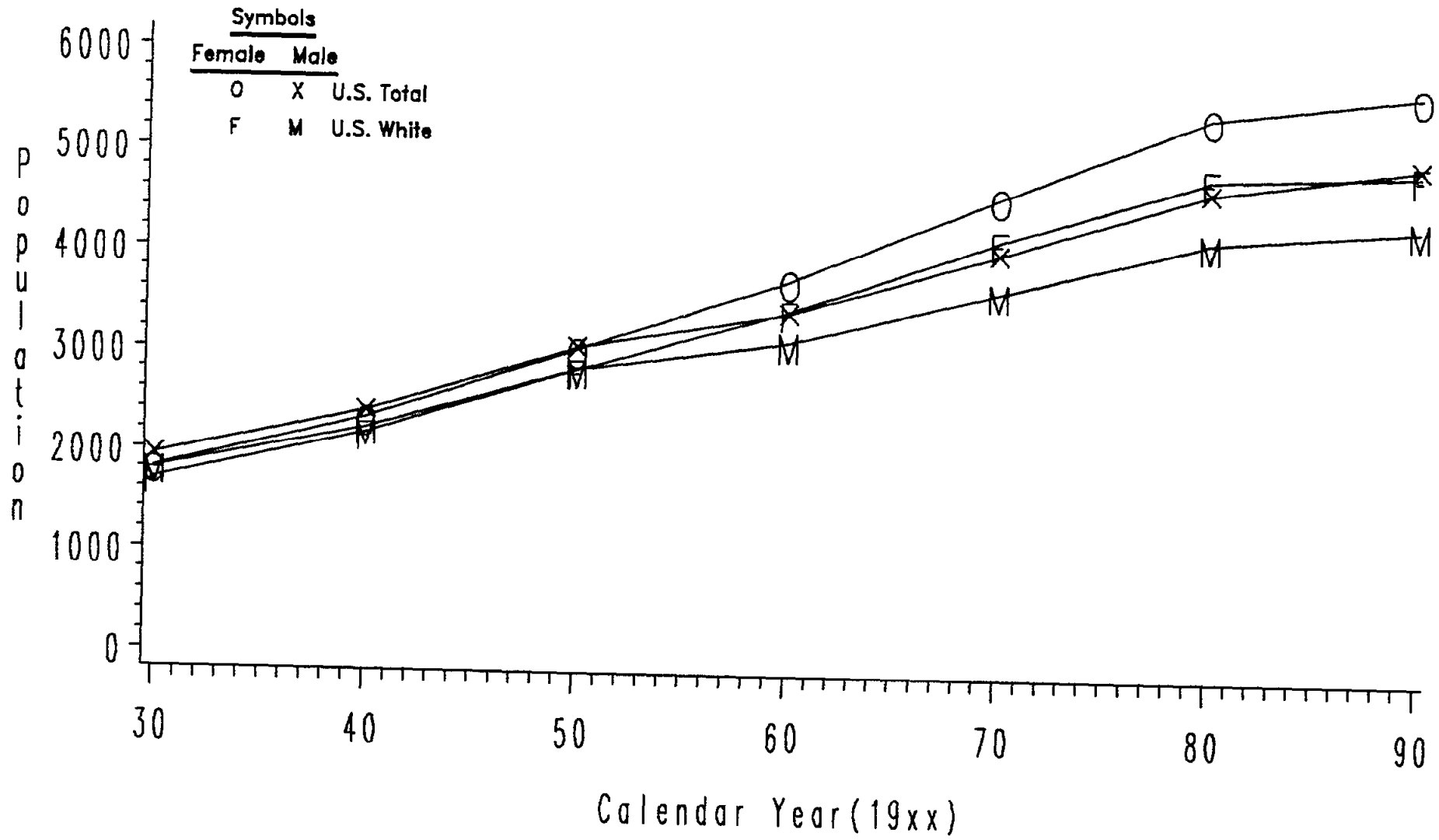
** U.S. POPULATIONS IN THOUSANDS **

FIGURE 33

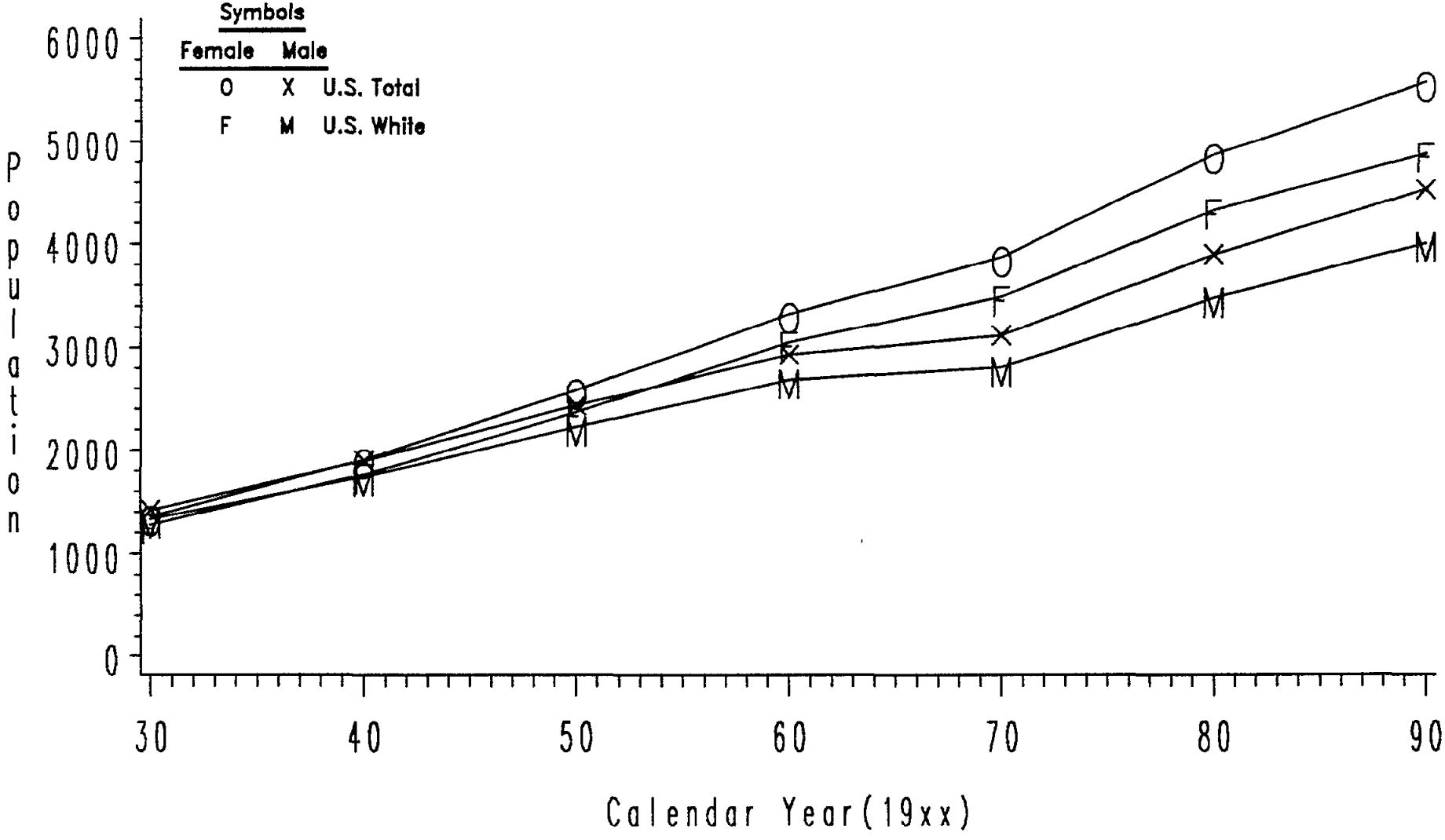
AGE_GRP=55-59



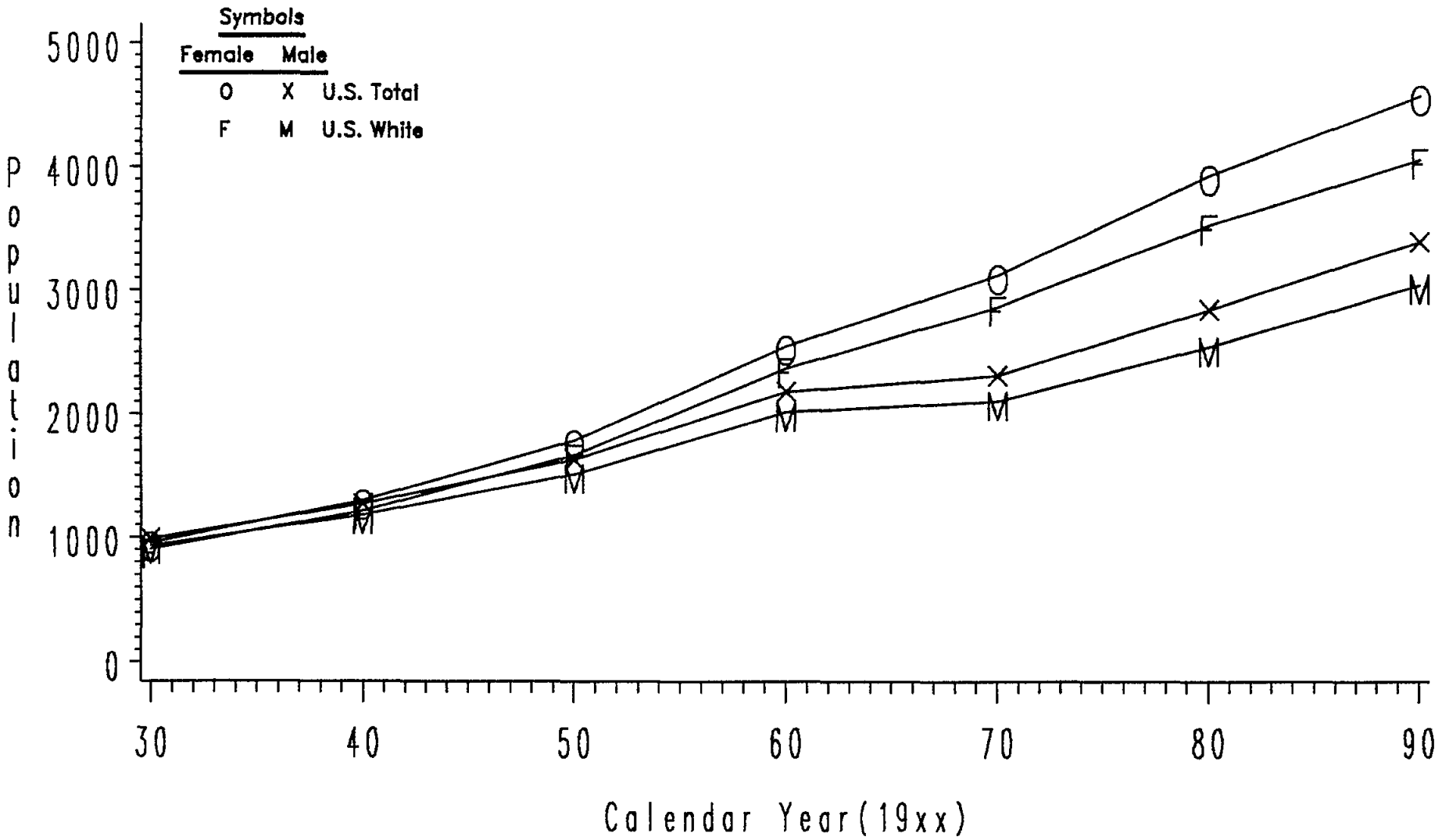
APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 34
AGE_GRP=60-64



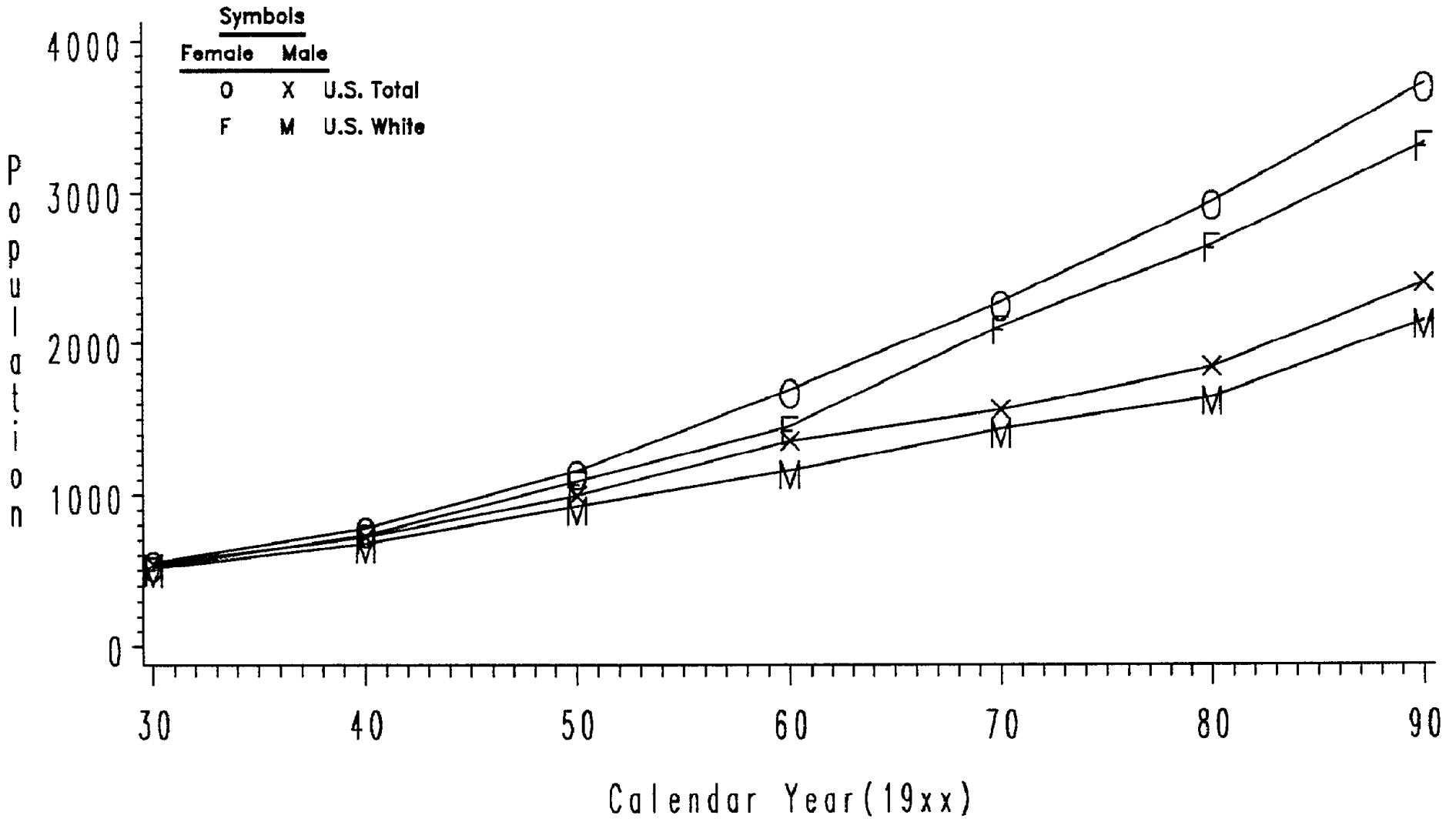
APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 35
AGE_GRP=65-69



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 3C
AGE_GRP=70-74



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 37
AGE_GRP=75-79

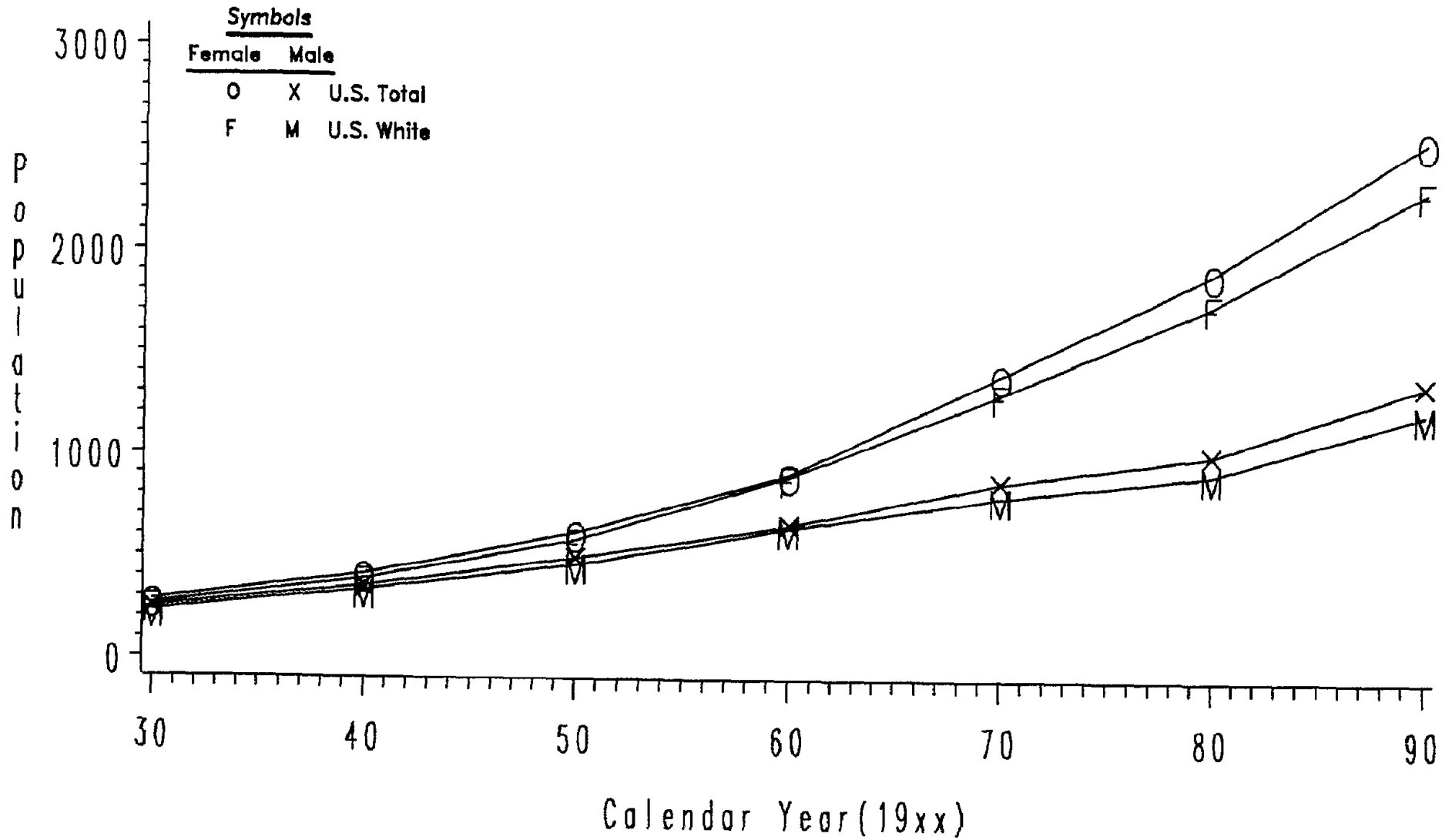


APPENDIX C--U. S. POPULATIONS

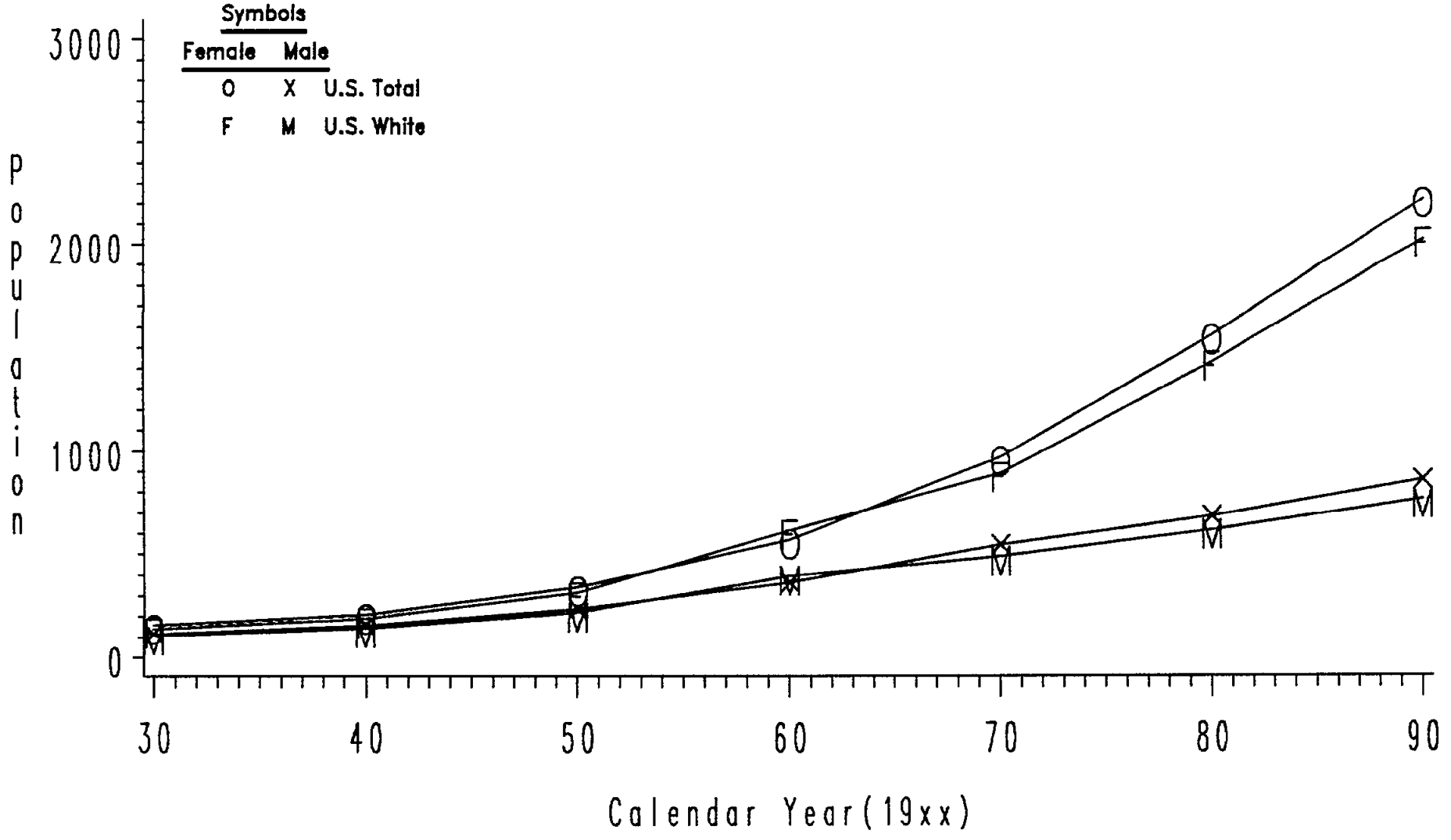
** U.S. POPULATIONS IN THOUSANDS **

FIGURE 3E

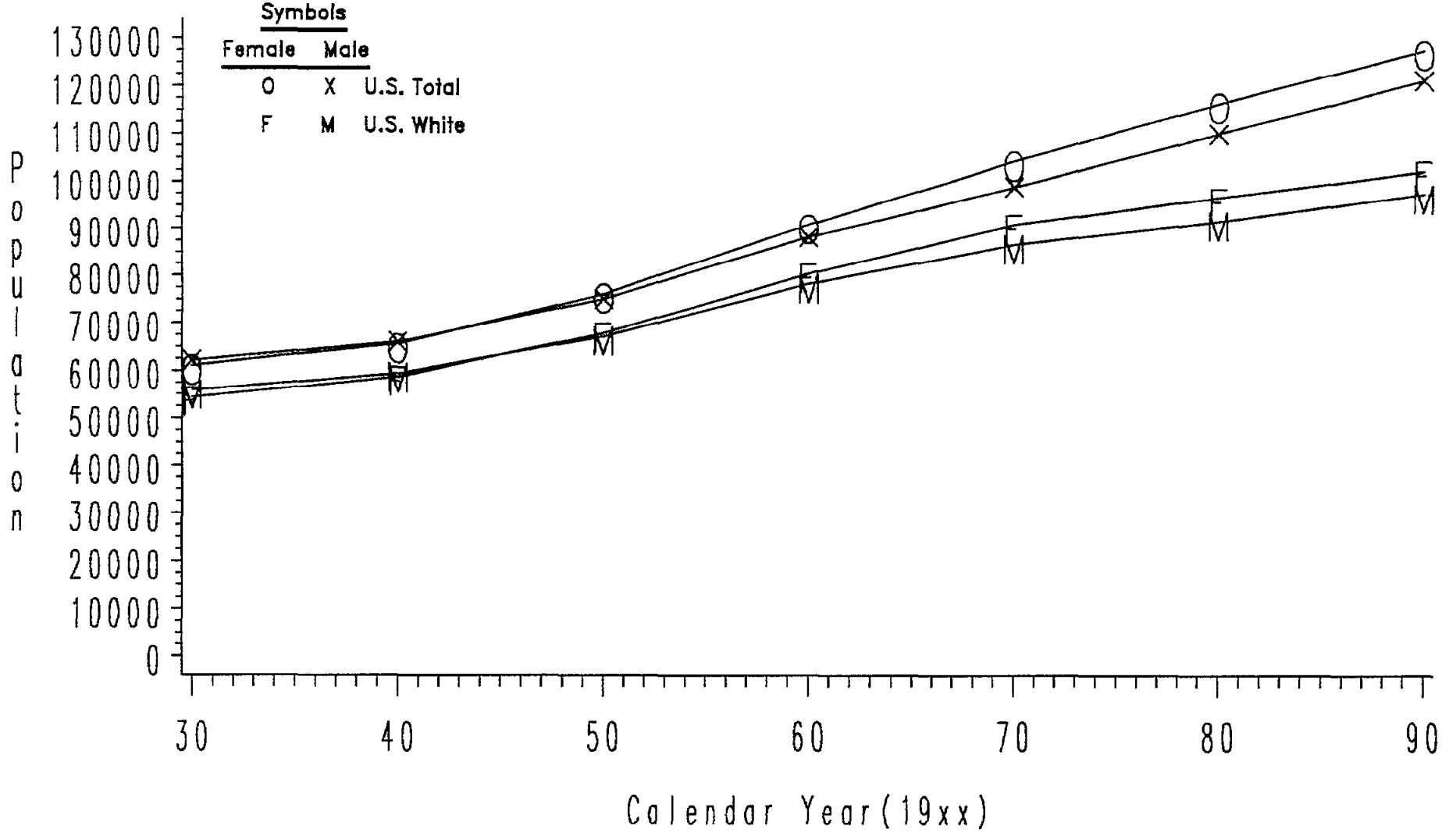
AGE_GRP=80-84



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 39
AGE_GRP=85+



APPENDIX C--U. S. POPULATIONS
** U.S. POPULATIONS IN THOUSANDS **
FIGURE 4C
ALL AGES



APPENDIX D

Abbreviated Contents of SAS Data Set S1211700
Location: IBM SR.KPO.S12117.SAS
UNIX ~chu/consult/S12117/sasdata

List of Variables by Position (38 obs.)

#	VARIABLE	TYPE	LENGTH
1	SEX	CHAR	1
2	AGE_GRP	NUM	8
3-53	ROCHRC30, 31, ..., 90	NUM	8
54-104	ROCHRU30, 31. ..., 90	NUM	8
105-155	OLTOTU30, 31, ..., 90	NUM	8
156-206	OLTOTC30, 31, ..., 90	NUM	8
207-212	USWHT_30, 40, ..., 90	NUM	8
213-218	USTOT_30, 40, ..., 90	NUM	8
219-269	OLBALC30, 31, ..., 90	NUM	8
270-320	OLBALU30, 31, ..., 90	NUM	8

APPENDIX E

```
/*
*************************************************************************
*                                                                       *
*   MEMBER NAME    :  Location: UNIX: autocall library (irate)          *
*                             IBM:  autocall library(irate)             *
*                                                                       *
*   MODULE TITLE   :  This is a SAS macro(%irate) used to calculate     *
*                     incidence, prevalence and mortality rates in      *
*                     Rochester and Olmsted County Minnesota.  It is    *
*                     an update of the original work by Schroeder and   *
*                     Offord(Tech. Report No. 20, 1982) with the fol-   *
*                     lowing enhancements:                              *
*                                                                       *
*                       *simplified call statement using new macro lang*
*                       *output datasets of incidence rates available.  *
*                       *option to include only males or only females.  *
*                       *option for binomial(instead of Poisson) error.*
*                       *option for corrected incidence rates.          *
*                       *option to suppress all printed output.         *
*                                                                       *
*   REFERENCE      :  Section of Biostatistics Technical Report No. 49  *
*                                                                       *
*   PROGRAMMER     :  E. Bergstralh                                     *
*                                                                       *
*   DATE           :   11/91                                            *
*                      4/21/92  set negative lower confidence limits    *
*                               to zero.                                *
*************************************************************************
  */
   /*
The macro call statement is given below:

  %irate(CDATA,AGEVAR,B_AGE,IPOPN,MAXAGE= ,ADJU_POP= ,OUTDATA= ,
         PRINT= ,CORRIN= ,OUTDATAC= ,INCLUDE= , ERROR= );

      CDATA -SAS dataset containing one observation for each incidence case.
             This dataset must have a character variable named SEX with
             levels 'M' and 'F' and also the age variable to be described
             next.

      AGEVAR=variable defining the integer age at time of diagnosis(onset),
             prevalence, or death as appropriate for the cases.

      B_AGE -String of orderd numbers 'a1 a2 a3 etc' used to formulate the
             desired age groupings for the incidence rates.  These
             "beginning" age values must be in ascending order and chosen
             from 0,1,5,10,15,..,75 80,85; corresponding to the age
             groupings available in the population(denominator) datasets.
             Specifying '0 30 40 50 60' implies age intervals of 0-29,30-
             39,40-49,50-59 and 60 to MAXAGE, where MAXAGE is defined
             below.  Note that if the smallest age in the string is
             greater than zero, then any cases and denominator populations
             less than that age will be excluded from all rate and
             adjusted rate and corrected rate calculations.  Users must
             must exercise caution in interpreting findings when certain
             ages have been excluded.

       IPOPN=Variable name or expression defining the population
             (denominator) to be used for the incidence rates.  This would
             typically be some combination of variables from the SAS
             dataset S1211700 representing the Rochester, Olmsted County
             or Olmsted County Balance populations.  If one wanted the
             Rochester corrected population for 1980-89, then let IPOPN be
             as follows: 'sum(of ROCHRC80-ROCHRC89)'.  User defined
             populations, created by modifying the %irate macro at
             'Comment 3', may also be used in the IPOPN definition.

     ** the following parameters are optional and are specified using the
        keyword-value style.  Omitting the parameter implies the default.

       MAXAGE=Maximum integer age to use for the incidence analysis.
             MAXAGE should end in a 0(age zero only), 4 or 9(corresponding
             to the population age groups).  Values of MAXAGE at or above
             85 imply no upper limit on age.  The minimum age is the
             lowest value of the B_AGE string.  This is an optional
             parameter with default of 120.

      ADJU_POP=Name of the population to be used for calculating adjusted
             rates.  This would typically be one of variables corresponding
             to the U.S. total or white census year populatons, e.g.
             USTOT_80.  Omit this parameter if adjusted rates are not
             desired.

      OUTDATA=Name of output SAS dataset containing the incidence rates. Note
             that this can be a two-level(permanent) name.  Default name is
             _RATES.

       PRINT = N, if no printed output is desired. Default is to print.

       CORRIN= Y, if corrected incidence rates are desired.  One should
             omit this parameter unless such rates are appropriate.

      OUTDATAC=Name of output SAS dataset containing the corrected incidence
             rates, if so requested with the CORRIN option.  Default name is
             _crates.

       INCLUDE= F or M indicates that only females(F) or males(M) are to be
             included in the analysis.  This affects the case data, the
             denominator data and the adjusting population.  This may be
             of use for sex-specific diseases such as prostate cancer.
             It is a necessary option if one wants rates to be adjusted
             to to only the female or male age distribution.  Default is
             to include both sexes.

         ERROR= B indicates that the number of cases is assumed to folow the
             binomial distribution with parameter p and variance p(1-p)/n.
             This is in contrast to the default which assumes a Poisson
             distribution with variance p/n.  The binomial option may be
             desirable when the actual rates are high(>.10 say), as may
             be the case with prevalence rates.  This option does not
             apply to corrected incidence calculations.

                                  */
 *** SAS dataset containing the populations ***;
   libname master '~chu/consult/s12117/sasdata';  ** UNIX ;
 * libname master 'sr.kpo.s12117.sas';            ** IBM ;

 *** MACRO SOURCE CODE ******;
%MACRO IRATE(CDATA,AGEVAR,B_AGE,IPOPN,
             MAXAGE=120,ADJU_POP= ,OUTDATA=_rates,
             PRINT=y,CORRIN= ,OUTDATAC=_crates ,INCLUDE= , ERROR= );
*  OPTIONS DQUOTE   NOSOURCE NONOTES;
* OPTIONS DQUOTE;
  %GLOBAL QUIT;
 DATA ___A; SET &CDATA;
  IF SEX=' ' |  &AGEVAR=. THEN DELETE;
```

```
  %if %upcase(&include)=F %then %do;
  if sex='F';  ** females only;
  %end;
  %if %upcase(&include)=M %then %do;
  if sex='M';  **   males only;
  %end;
  AGE_GRP=0*(0<= &AGEVAR<1)+1*(1<= &AGEVAR<5)+5*(5<= &AGEVAR<10)+
        10*(10<= &AGEVAR<15)+
        15*(15<= &AGEVAR<20)+20*(20<= &AGEVAR<25)+25*(25<= &AGEVAR<30)+
        30*(30<= &AGEVAR<35)+35*(35<= &AGEVAR<40)+40*(40<= &AGEVAR<45)+
        45*(45<= &AGEVAR<50)+50*(50<= &AGEVAR<55)+55*(55<= &AGEVAR<60)+
        60*(60<= &AGEVAR<65)+65*(65<= &AGEVAR<70)+70*(70<= &AGEVAR<75)+
        75*(75<= &AGEVAR<80)+80*(80<= &AGEVAR<85)+85*(85<= &AGEVAR);
%AGEGRP;
  /*
 ************************************************************************
 * COMMENT 1: THE FOLLOWING CODE CALCS. SEX*AGE_GP FREQUENCY FOR        *
 *            THE INCIDENCE CASES                                       *
 ************************************************************************
  */

PROC FREQ DATA=___A;
   TABLES SEX*AGE_GP /  NOPRINT OUT=OUTC,
PROC FREQ DATA=___A;
   TABLES     AGE_GP /  NOPRINT OUT=OUTCT;
  /*
 ************************************************************************
 * COMMENT 2:   THE FOLLOWING CODE CHECK TO SEE IF THE CASES DATASET    *
 *           HAS ZERO OBSERVATION--IF IT DOES THE MACRO STOPS           *
 ************************************************************************
  */
DATA _CASES_;
   DUMMY=1;
   DROP I;
   SET OUTCT POINT=DUMMY NOBS=NOBS;
   IF NOBS=0 THEN DO;
      PUT 'NOTE: YOUR CASES DATA SET HAS NO OBSERVATIONS,';
      PUT 'THEREFORE INCIDENCE RATES WILL NOT BE COMPUTED';
   END;
   CALL SYMPUT('QUIT',NOBS);
   DO I=1 TO NOBS;
      SET OUTC;
      RENAME COUNT=C_COUNT;
      OUTPUT;
   END;
   STOP;
 ************************************************************************;
  /*
 ************************************************************************
 * COMMENT 3 : MAKE CHANGE IN MACRO RATES HERE TO ALTER REFERENCE OR    *
 *   ADJUSTING POPULATIONS. CHANGE'SET MASTER.S1211700'TO SET (DESIRED  *
 *             REFERENCE DATA SET THAT YOU HAVE CREATED)                *
 *             EXAMPLE:                                                 *
 *             DATA ALL_POP; SET MY_DATA;                               *
 ************************************************************************
  */
  DATA ALL_POP; SET MASTER.S1211700;

 %IF &QUIT>0 %THEN %DO;   **LOOP FOR NUMBER CASES GE 0,
  %if %upcase(&include)=F %then %do;
  if sex='F';  ** females only;
  %end;
  %if %upcase(&include)=M %then %do;
  if sex=' '   **   males only;
  %end;

  KEEP SEX AGE_GP CUM_POP &ADJU_POP;
  %AGEGRP;
  CUM_POP= &IPOPN;

 PROC FREQ DATA=ALL_POP;
    TABLES SEX*AGE_GP /  NOPRINT OUT=OUTI;
    WEIGHT CUM_POP;
 PROC FREQ DATA=ALL_POP;
    TABLES     AGE_GP /  NOPRINT OUT=OUTIT;
    WEIGHT CUM_POP;

 DATA CASES  (RENAME=(COUNT=C_COUNT));  SET OUTCT OUTC;

 DATA INC_POP(RENAME=(COUNT=I_COUNT));  SET OUTIT OUTI;

*** CODE FOR ADJUSTED RATES ***;
%IF &ADJU_POP NE  %THEN %DO;
 PROC FREQ DATA=ALL_POP;
    TABLES SEX*AGE_GP /  NOPRINT OUT=OUTA;
    WEIGHT &ADJU_POP;
 PROC FREQ DATA=ALL_POP;
    TABLES     AGE_GP /  NOPRINT OUT=OUTAT;
    WEIGHT &ADJU_POP;
 DATA ADJ_POP(RENAME=(COUNT=A_COUNT));  SET OUTAT OUTA;

 DATA T;
  MERGE INC_POP ADJ_POP CASES; BY SEX AGE_GP;
  IF C_COUNT=. THEN C_COUNT=0;
  CASES=C_COUNT;
  POPN=I_COUNT;
  ADJ_POP=A_COUNT;

  DATA F; SET T;         IF SEX='F';
  DATA M; SET T;         IF SEX='M';
  DATA B; SET T;         IF SEX=' ';  SEX='T';

  DATA ALL; MERGE   F(RENAME=(CASES=F_C POPN=F_P ADJ_POP=F_AP))
                    M(RENAME=(CASES=M_C POPN=M_P ADJ_POP=M_AP))
                    B(RENAME=(CASES=T_C POPN=T_P ADJ_POP=T_AP))
                    ;
                    BY AGE_GP;
   K=100000,
   F_I=(F_C/F_P)*K;
   M_I=(M_C/M_P)*K;
   T_I=(T_C/T_P)*K;
   *Adjusted rate components;
   aar_f=f_i*t_ap;
   aar_m=m_i*t_ap;
   aar_t=t_i*t_ap;
   asar_f=f_i*f_ap;
   asar_m=m_i*m_ap;
   asar_t=.;
   *ADJUSTED RATE VARIANCE COMPONENTS;
  %if %upcase(&error)=B %then %do;
   VAAR_F=(T_AP**2)*F_I*(K-F_I)/F_P; *binomial error;
   VAAR_M=(T_AP**2)*M_I*(K-M_I)/M_P;
   VAAR_T=(T_AP**2)*T_I*(K-T_I)/T_P;
   VASAR_F=(F_AP**2)*F_I*(K-F_I)/F_P;
   VASAR_M=(M_AP**2)*M_I*(K-M_I)/M_P;
  %end; %else %do;
   VAAR_F=(T_AP**2)*(F_I/F_P)*K; * poisson error;
   VAAR_M=(T_AP**2)*(M_I/M_P)*K;
```

```
    VAAR_T=(T_AP**2)*(T_I/T_P)*K;
    VASAR_F=(F_AP**2)*(F_I/F_P)*K;
    VASAR_M=(M_AP**2)*(M_I/M_P)*K;
   %end;
    FORMAT AAR_F--ASAR_M 10.4;
 KEEP AGE_GP F_C M_C T_C F_P M_P T_P F_I M_I T_I F_AP M_AP T_AP

  AAR_F--VASAR_M;
 PROC MEANS NOPRINT DATA=ALL; VAR F_C M_C T_C F_P M_P T_P F_AP M_AP
  T_AP AAR_F--VASAR_M;
  OUTPUT OUT=ADJ SUM=F_C M_C T_C F_P M_P T_P
                     F_AP M_AP T_AP AAR_F AAR_M AAR_T ASAR_F ASAR_M
                    ASAR_T VAAR_F VAAR_M VAAR_T VASAR_F VASAR_M;
DATA ADJ2; SET ADJ;
  AAR_F=AAR_F/T_AP;
  SEAAR_F=SQRT(VAAR_F/T_AP**2);
  LLAAR_F=AAR_F-1.96*SEAAR_F;  if . lt llaar_f lt 0 then llaar_f=0;
  ULAAR_F=AAR_F+1.96*SEAAR_F;

  AAR_M=AAR_M/T_AP;
  SEAAR_M=SQRT(VAAR_M/T_AP**2);
  LLAAR_M=AAR_M-1.96*SEAAR_M;  if . lt llaar_m lt 0 then llaar_m=0;
  ULAAR_M=AAR_M+1.96*SEAAR_M;

  AAR_T=AAR_T/T_AP;
  SEAAR_T=SQRT(VAAR_T/T_AP**2);
  LLAAR_T=AAR_T-1.96*SEAAR_T;  if . lt llaar_t lt 0 then llaar_t=0;
  ULAAR_T=AAR_T+1.96*SEAAR_T,

  ASAR_T=(ASAR_F+ASAR_M)/T_AP;
  SEASAR_T=SQRT((VASAR_F+VASAR_M)/T_AP**2);
  LLASAR_T=ASAR_T-1.96*SEASAR_T;  if . lt llasar_t lt 0 then llasar_t=0;
  ULASAR_T=ASAR_T+1.96*SEASAR_T;
 FORMAT SEAAR_F--ULASAR_T 10.4;

DATA &OUTDATA; SET ALL ADJ2(IN=INJ);
 IF INJ THEN AGE_GP='TOTAL',
 K=100000;
 IF INJ THEN DO; F_I=(F_C/F_P)*K;
                 M_I=(M_C/M_P)*K;
                 T_I=(T_C/T_P)*K;
            END;
 IF AGE_GP NE 'TOTAL' THEN DO;
   AAR_F=.; AAR_M=.; AAR_T=.; ASAR_T=.,
 END;
KEEP AGE_GP  F_C M_C T_C F_P M_P T_P F_I M_I T_I
            F_AP M_AP T_AP AAR_F AAR_M AAR_T ASAR_T
            SEAAR_F--ULASAR_T;
 FORMAT F_I M_I T_I 9.3;
   LABEL F_C=FEMALE CASES M_C=MALE CASES T_C=TOTAL CASES
         F_P=FEMALE POPULATION M_P=MALE POPULATION T_P=TOTAL POPULATION
         F_I='FEMALE INCID(X100,000)' M_I='MALE INCID(X100,000)'
         T_I='TOTAL INCID(X100,000)'
         F_AP='FEMALE ADJ. POP.' M_AP='MALE ADJ. POP.'
         T_AP='TOTAL ADJ. POP.'
         AAR_F='FEMALE AGE-ADJ. RATE' AAR_M='MALE AGE-ADJ. RATE'
         AAR_T='TOTAL AGE-ADJ. RATE' ASAR_T='TOTAL AGE-SEX-ADJ. RATE'
         SEAAR_F='S.E. OF AAR_F' SEAAR_M='S.E. OF AAR_M'
         SEAAR_T='S.E. OF AAR_T' SEASAR_T='S.E. OF ASAR_T'
         LLAAR_F='95% LOWER LIMIT OF AAR_F'
         LLAAR_M='95% LOWER LIMIT OF AAR_M'
         LLAAR_T='95% LOWER LIMIT OF AAR_T'
         LLASAR_T='95% LOWER LIMIT OF ASAR_T'
         ULAAR_F='95% UPPER LIMIT OF AAR_F'
         ULAAR_M='95% UPPER LIMIT OF AAR_M'
         ULAAR_T='95% UPPER LIMIT OF AAR_T'
         ULASAR_T='95% UPPER LIMIT OF ASAR_T'
         ;

     %if %upcase(&print) ^=N  %then %do;
DATA PRINTA;
   SET &OUTDATA;
   F=F_C, M=M_C; TOT=T_C;
   _F=F_P; _M=M_P; _TOT=T_P;
   __F=F_I; __M=M_I; __TOT=T_I;
   ___F=F_AP; ___M=M_AP; ___T=T_AP;
   DROP F_C M_C T_C F_P M_P T_P F_I M_I T_I F_AP M_AP T_AP;
_='*';
__='|';
TITLE8"Incidence Rates: Case Dataset=&CDATA,  Incidence Population=&IPOP
N            ";
TITLE9"                 Adjusting population= &ADJU_POP(U.S. popns are i
n 1000's)    ";
  %if %upcase(&include)=M %then %do;
Title10"                Include=&include option in effect. FEMALES EXCLU
DED.         ";
  %end;
  %if %upcase(&include)=F %then %do;
Title10"                Include=&include option in effect. MALES EXCLUDE
D.           ";
  %end;
DATA TOTALS; SET PRINTA END=EOF;
FILE PRINT HEADER=PAGE1 LINESLEFT=L;
IF EOF=1 THEN DO;
 F_RATE=AAR_F; M_RATE=AAR_M; T_RATE=AAR_T; O_RATE=ASAR_T;
 SE_F=SEAAR_F,   SE_M=SEAAR_M;
 SE_T=SEAAR_T;   SE_O=SEASAR_T;
 CI_L_F=LLAAR_F; CI_U_F=ULAAR_F;
 CI_L_M=LLAAR_M; CI_U_M=ULAAR_M;
 CI_L_T=LLAAR_T; CI_U_T=ULAAR_T;
 CI_L_O=LLASAR_T; CI_U_O=ULASAR_T;
PUT @1  '-------------------------------------------------------------------
-------------------------------------------------------------------';
PUT @8 '*' @30 '*' @66 '*' @107 '*' @132 '*';
PUT (AGE_GP  F M TOT  _F _M _TOT  ___F __M __TOT  _ ___F ___M ___T _)
   (@1 $CHAR5. @8 $CHAR1.+1 5.+1 5.+1 5.+3 $CHAR1.+3 7.+3 7.+4
   7.+4 $CHAR1.+3 9.4+3 9.4+3 9.4+4 $CHAR1.+1 6.+2 6.+2 6.+1 $CHAR1.);
PUT @8  '*************************************************************
************************************************************';
   IF L<=15  THEN DO;
      FLAG=1;
      PUT _PAGE_;
   END;
 PUT ' ';
 PUT ' ';
 PUT ' ';
PUT @22 '*****************************************************************
**************************';
PUT @22 '*' @27 'SUMMARY RATES'
          @58 '* INCIDENCE RATE *    S.E.    *  95 PERCENT  C.I.   *';
PUT @22 '*' @58 '*   PER 100,000  *'
   %if %upcase(&error)=B %then %do;
    @76 ' (Binomial)'
     %end;  %else %do;
    @76 '  (Poisson)'
     %end;
                                    @88 '*' @93 'LOWER    UPPER   *';
PUT @22 '*-----------------------------------------------------------------
```

```
-------------------------*';
PUT @22 '*' @58 '*' @75 '*' @88 '*' @110 '*';
PUT @22 '*    AGE ADJUSTED------FEMALES      *    ' F_RATE 9.4 '   *  '
    SE_F 9.6 ' * ' CI_L_F 9.4 ' ' CI_U_F 9.4 ' *';
PUT @22 '*    AGE ADJUSTED--------MALES      *    ' M_RATE 9.4 '   *  '
    SE_M 9.6 ' * ' CI_L_M 9.4 ' ' CI_U_M 9.4 ' *';
PUT @22 '*    AGE ADJUSTED--------TOTAL      *    ' T_RATE 9.4 '   *  '
    SE_T 9.6 ' * ' CI_L_T 9.4 ' ' CI_U_T 9.4 ' *';
PUT @22 '*' @58 '*' @75 '*' @88 '*' @110 '*';
PUT @22 '*' @58 '*' @75 '*' @88 '*' @110 '*';
PUT @22 '*    AGE & SEX ADJUSTED--TOTAL      *    ' O_RATE 9.4 '   *  '
    SE_O 9.6 ' * ' CI_L_O 9.4 ' ' CI_U_O 9.4 ' *';
PUT @22 '*****************************************************************
**************************';
 RETURN;
END;
PUT (AGE_GP _ F M TOT _ _F _M _TOT _ _F __M __TOT _ ___F ___M ___T _)
       (@1 $CHAR5. @8 $CHAR1.+1 4.+2 4.+2 4.+4 $CHAR1.+4 6.+4 6.+5
   6.+4 $CHAR1.+3 9.4+3 9.4+3 9.4+4 $CHAR1.+1 6.+2 6.+2 6.+1 $CHAR1 );
   PUT @8 '*' @30 '*' @66 '*' @107 '*' @132 '*';
RETURN;
PAGE1:
IF FLAG=1 THEN GO TO EXIT;
PUT ' ' ///;
PUT  @8 '*****************************************************************
************************************************************';
PUT  @8  '*' @15 'INCIDENCE' @30 '*' @41 'INCIDENCE POPULATION' @66 '*'
 @76 'INCIDENCE RATES (X 100,000)' @107 '*' @110 'ADJUSTING POPULATION'
 @132 '*';
PUT  @8 '*  (A)    (B)    (C)     *       (D)        (E)         (F)      *
    (G)          (H)          (I)      *    (J)      (K)      (L)  *';
PUT @8 '*' @30 '*' @66 '*' @107 '*' @132 '*';
PUT  @1  'AGE_GP *    F      M     TOT     *       F          M          TOT
   *          F           M          TOT      *    F        M       TOT  *';
PUT  @1 '-------------------------------------------------------------
-------------------------------------------------------------';
EXIT:
RETURN;
   RUN;
   TITLE8;
   %end; ** end of loop for printing;
 %END; ** END OF LOOP FOR ADJUSTED RATES ONLY;

 *** CODE FOR CRUDE RATES ONLY ***;
 %IF &ADJU_POP EQ  %THEN %DO;
  FOOTNOTE;
  DATA T;
   MERGE INC_POP CASES; BY SEX AGE_GP;
   IF C_COUNT=. THEN C_COUNT=0;
   CASES=C_COUNT;
   POPN=I_COUNT;

   DATA F; SET T;          IF SEX='F';
   DATA M; SET T;          IF SEX='M';
   DATA B; SET T;          IF SEX=' ';  SEX='T';

   DATA ALL; MERGE   F(RENAME=(CASES=F_C POPN=F_P))
                     M(RENAME=(CASES=M_C POPN=M_P))
                     B(RENAME=(CASES=T_C POPN=T_P))
                     ;
                     BY AGE_GP;
    K=100000;
    F_I=(F_C/F_P)*K;
    M_I=(M_C/M_P)*K;
    T_I=(T_C/T_P)*K;
  FORMAT F_I M_I T_I  9.3;
  KEEP AGE_GP F_C M_C T_C F_P M_P T_P F_I M_I T_I;
  PROC MEANS NOPRINT DATA=ALL; VAR F_C M_C T_C F_P M_P T_P;
   OUTPUT OUT=TOT SUM=F_C M_C T_C F_P M_P T_P ;

  DATA &OUTDATA; SET ALL TOT(IN=INT);
   IF INT THEN AGE_GP='TOTAL';
   K=100000;
   IF INT THEN DO; F_I=(F_C/F_P)*K;
                   M_I=(M_C/M_P)*K;
                   T_I=(T_C/T_P)*K;
              END;
   DROP K;
   FORMAT F_I M_I T_I  9.3;
   LABEL F_C=FEMALE CASES M_C=MALE CASES T_C=TOTAL CASES
         F_P=FEMALE POPULATION M_P=MALE POPULATION T_P=TOTAL POPULATION
         F_I='FEMALE INCID(X100,000)' M_I='MALE INCID(X100,000)'
         T_I='TOTAL INCID(X100,000)';
      %if %upcase(&print) ^=N  %then %do;
DATA PRINTR,
   SET &OUTDATA;
   F=F_C; M=M_C; TOT=T_C;
   _F=F_P; _M=M_P; _TOT=T_P;
   __F=F_I; __M=M_I; __TOT=T_I;
   DROP F_C M_C T_C F_P M_P T_P F_I M_I T_I;
   ='*';
TITLE8"Incidence Rates: Case Dataset=&CDATA,  Incidence Population=&IPOP
N    ";
  %if %upcase(&include)=M %then %do;
Title10"                Include=&include option in effect. FEMALES EXCLU
DED. ";
  %end;
  %if %upcase(&include)=F %then %do;
Title10"                Include=&include option in effect. MALES EXCLUDE
D.   ";
  %end;
DATA _NULL_; SET PRINTR END=EOF;
FILE PRINT HEADER=PAGE1;
IF EOF = 1 THEN DO;
PUT @11 '-------------------------------------------------------------
-----------------------------------------';
PUT @18 '*' @40 '*' @76 '*' @117 '*';
PUT (AGE_GP _ F M TOT _ _F _M _TOT _ __F __M __TOT _)
       (@11 $CHAR5. @18 $CHAR1.+1 5.+1 5.+1 5.+3 $CHAR1.+3 7.+3 7.+4
         7.+4 $CHAR1.+3 9.4+3 9.4+3 9.4+4 $CHAR1.);
PUT @18 '*****************************************************************
************************************';
RETURN;
END;
PUT (AGE_GP _ F M TOT _ _F _M _TOT _ __F __M __TOT _)
       (@11 $CHAR5. @18 $CHAR1.+1 4.+2 4.+2 4.+4 $CHAR1.+4 6.+4 6.+5
         6.+4 $CHAR1.+3 9.4+3 9.4+3 9.4+4 $CHAR1. );
   PUT @18 '*' @40 '*' @76 '*' @117 '*';
RETURN;
PAGE1:
PUT ' ' ///;
PUT @18 '*****************************************************************
************************************';
PUT @18  '*' @25 'INCIDENCE' @40 '*' @51 'INCIDENCE POPULATION' @76 '*'
    @86 'INCIDENCE RATES (X 100,000)' @117 '*';
PUT @18 '*  (A)    (B)    (C)     *       (D)        (E)         (F)      *
    (G)          (H)          (I)      *';
PUT @18 '*' @40 '*' @76 '*' @117 '*';
```

```
PUT @11  'AGE_GP *   F     M    TOT    *       F         M         TOT
   *         F           M          TOT     *';
PUT @11 '-------------------------------------------------------------
-----------------------------------------';
RETURN;
   RUN;
   TITLE8;
   %end; ** end of loop for printing;
  %END;  **END OF LOOP FOR CRUDE RATES ONLY;
 %END;  **END OF LOOP FOR ZERO OBSERVATIONS;

   /*
 ************************************************************************
 * COMMENT 4   THE FOLLOWING CODE CALCULATES CORRECTED INCIDENCE RATES *
 *                                                                      *
 ************************************************************************
   */

  %if %upcase(&corrin)=Y  %then %do; **loop for corrected incidence;
 data _ci;  set &outdata;
  if age_gp eq 'TOTAL' then do;
   call symput('adjtot',put(t_ap,10.));
   delete;
  end;
 data _ci2  _sum; set _ci end=eof ; by age_gp;
 * need to calculate w--the width of the interval;
  bage=scan(age_gp,1);
  eage=scan(age_gp,2);
   i=index(age_gp,'+');
   if i gt '0' then eage= 99;
  w=eage-bage+1;
  ************************************************;
  retain f_si m_si t_si f_ci m_ci t_ci f_ia m_ia t_iaa t_ias
   vcaar_f vcaar_m vcaar_t vcasar_f vcasar_m;
   if _n_=1 then do;
     f_si=0; m_si=0; t_si=0; f_ci=0; m_ci=0; t_ci=0;
     f_ia=0; m_ia=0; t_iaa=0, t_ias=0;
     vcaar_f=0; vcaar_m=0; vcaar_t=0, vcasar_f=0; vcasar_m=0;
   end;
   ** express adjusted popns & incidence in fractions;
     %if &adju_pop ne  %then %do;
   m_app=m_ap/&adjtot;
   f_app=f_ap/&adjtot;
   t_app=t_ap/&adjtot,
     %end;
   f_i=f_i/100000; m_i=m_i/100000; t_i=t_i/100000;

   ** Calculate and sum the incidence in the interval--removing prevalence;
   f_si=f_si+ f_i*w/(1-f_ci);
   m_si=m_si+ m_i*w/(1-m_ci);
   t_si=t_si+ t_i*w/(1-t_ci);
   f_ci=1-exp(-f_si);          ** Fleming formula-------females;
   m_ci=1-exp(-m_si);          **                       ---males;
   t_ci=1-exp(-t_si);          **                       ---total;
   format f_ci m_ci t_ci 7.5;
   ** Estimate the cumulative incidence at the midpoint**;
   fci_mid=(lag(f_ci)+f_ci)/2;
   mci_mid=(lag(m_ci)+m_ci)/2;
   tci_mid=(lag(t_ci)+t_ci)/2;
    if _n_=1 then do;
     fci_mid=f_ci/2; mci_mid=m_ci/2; tci_mid=t_ci/2;
    end;
   ** Correct the incidence rates ***********************;
   f_rc=100000*f_i/(1-fci_mid);
   m_rc=100000*m_i/(1-mci_mid);
   t_rc=100000*t_i/(1-tci_mid);
   format f_rc m_rc t_rc 10.2;
   ** Calculate adjusted corrected incidence rates *******;
    %if &adju_pop ne  %then %do;
   f_ia=f_ia+f_rc*t_app;             ** age adjusted--females;
   m_ia=m_ia+m_rc*t_app;             **                 males;
   t_iaa=t_iaa+t_rc*t_app;           ** age adjusted--total;
   t_ias=t_ias+(f_rc*f_app+m_rc*m_app);** age/sex adj--total;
   **Adjusted rate variance calculation ******************;
      k=100000; k2=k**2;
      w_j=t_app/(1-tci_mid);
      w_fj=f_app/(1-fci_mid);
      w_mj=m_app/(1-mci_mid);
    vcaar_f=vcaar_f + ( w_j**2)*(F_I/F_P)*K2;
    vcaar_m=vcaar_m + ( w_j**2)*(M_I/M_P)*K2;
    vcaar_t=vcaar_t + ( w_j**2)*(T_I/T_P)*K2;
    vcasar_f=vcasar_f + (w_fj**2)*(F_I/F_P)*K2;
    vcasar_m=vcasar_m + (w_mj**2)*(M_I/M_P)*K2;
    %end;
   ********* Fix up vars for printing *********************;
   f_i=f_i*100000; m_i=m_i*100000; t_i=t_i*100000;
   f_cix=f_ci*100; m_cix=m_ci*100; t_cix=t_ci*100;
   c='*';
   format f_i m_i t_i 10.2 f_cix m_cix t_cix 6.2;
   ******************************************************;
    output _ci2;

    %if &adju_pop ne  %then %do;
   if eof then do; ** set-up dataset with adjusted rates;
     f_i=.;m_i=.;t_i=.;f_ap=.;m_ap=.;t_ap=.;f_cix=.;m_cix=.;t_cix=.;
     f_rc=.;m_rc=.;t_rc=.;w=.;

     caar_f=f_ia;
     secaar_f=sqrt(vcaar_f);
     lcaar_f=caar_f - 1.96*secaar_f;   if . lt lcaar_f lt 0 then lcaar_f=0;
     ucaar_f=caar_f + 1.96*secaar_f;

     caar_m=m_ia;
     secaar_m=sqrt(vcaar_m);
     lcaar_m=caar_m - 1.96*secaar_m;  if . lt lcaar_m lt 0 then lcaar_m=0;
     ucaar_m=caar_m + 1.96*secaar_m;

     caar_t=t_iaa,
     secaar_t=sqrt(vcaar_t);
     lcaar_t=caar_t -1.96*secaar_t;   if . lt lcaar_t lt 0 then lcaar_t=0;
     ucaar_t=caar_t +1.96*secaar_t;

     casar_t=t_ias;
     secasart=sqrt(vcasar_f+vcasar_m);
     lcasar_t=casar_t - 1.96*secasart;  if . lt lcasar_t lt 0 then lcasar_t=0;
     ucasar_t=casar_t + 1.96*secasart;

     call symput('aar_fc',put(caar_f,10.2));
     call symput('secaar_f',put(secaar_f,10.4));
     call symput('lcaar_f',put(lcaar_f,10.2));
     call symput('ucaar_f',put(ucaar_f,10.2));

     call symput('aar_mc',put(caar_m,10.2));
     call symput('secaar_m',put(secaar_m,10.4));
     call symput('lcaar_m',put(lcaar_m,10.2));
     call symput('ucaar_m',put(ucaar_m,10.2));

     call symput('aar_tc',put(caar_t,10.2));
```

```
    call symput('secaar_t',put(secaar_t,10.4));
    call symput('lcaar_t',put(lcaar_t,10.2));
    call symput('ucaar_t',put(ucaar_t,10.2));

    call symput('asar_tc',put(casar_t,10.2));
    call symput('secasart',put(secasart,10.4));
    call symput('lcasar_t',put(lcasar_t,10.2));
    call symput('ucasar_t',put(ucasar_t,10.2));

    age_gp='Total'; output _sum;
  end;
   %end;

     %if %upcase(&print) ^=N  %then %do;
  label age_gp='Age/Int.' w='Int./Width'  c='*/*/*/*'
        f_i='Female/(G)' m_i='Male/(H)' t_i='Total/(I)'
        f_cix='Female/(M)' m_cix='Male/(N)' t_cix='Total/(O)'
        f_rc='Female/(P)' m_rc='Male/(Q)' t_rc='Total/(R)';
  title8"CUMULATIVE and CORRECTED INCIDENCE: Population= IPOPN          ";
  proc report data=_ci2       headline headskip;
      column age_gp w c  ("_ Incidence _" "(x100,000)" f_i m_i t_i)
                      c ("Cumulative Incidence" "(end of int., x100)"
                      f_cix m_cix t_cix)
                  c  ("_ Corrected Incidence _" "(x100,000)" f_rc m_rc t_rc);
      define c / group;
      define age_gp / group;
       break after age_gp / skip;

   %if &adju_pop ne %then %do;
  footnote" Summary Corrected Rates       Incidence    S E.            95% C.I.      ";
  footnote2"                               (x100,000) (Poisson)     Lower       Upper";
  footnote3 "-------------------------------------------------------------------------
-----";
  footnote4"Age adjusted ------Females  &aar_fc  &secaar_f  &lcaar_f &ucaar_f";
  footnote5"Age adjusted --------Males  &aar_mc  &secaar_m  &lcaar_m &ucaar_m";
  footnote6"Age adjusted --------Total  &aar_tc  &secaar_t  &lcaar_t &ucaar_t";
  footnote7"Age & sex adjusted --Total  &asar_tc  &secasart  &lcasar_t &ucasar_t";
  title9"                                  Adjusting popn.= &adju_pop";
   %end;
  footnote9 "NOTE: Corrected incidence assumes no disease-related mortality";
  footnote10"      or migration and no important calendar time trends.     ";
  run; footnote; title8;
    %end; * end of loop for printing;

   data &outdatac; set _ci2       _sum;
   keep  age_gp w f_i m_i t_i f_cix m_cix t_cix f_rc m_rc t_rc
   %if &adju_pop ne  %then %do;
    f_ap m_ap t_ap
    caar_f secaar_f lcaar_f ucaar_f
    caar_m secaar_m lcaar_m ucaar_m
    caar_t secaar_t lcaar_t ucaar_t
    casar_t secasart lcasar_t ucasar_t
   %end; ;
  label age_gp='Age group' w='Width of age interval'
        f_i='Female incidence(x100,000)'
        m_i='Male incidence(x100,000)'
        t_i='Total incidence(x100,000)'
        f_cix='Female cumulative incidence(end of int.,x100)'
        m_cix='Male cumulative incidence(end of interval,x100)'
        t_cix='Total cumulative incidence(end of interval,x100)'
        f_rc ='Female corrected incidence(x100,000)'
        m_rc ='Male corrected incidence(x100,000)'
        t_rc ='Total corrected incidence(x100,000)'
   %if &adju_pop ne  %then %do;
        f_ap='Female adjusting popn' m_ap='Male adjusting popn'
        t_ap='Total adjusting popn'
        caar_f='Female correctd age-adj. rate(x100,000)'
        caar_m='Male correctd age-adj. rate(x100,000)'
        caar_t='Total correctd age-adj. rate(x100,000)'
        casar_t='Total correctd age-sex-adj. rate(x100,000)'
        secaar_f='SE of caar_f' secaar_m='SE of caar_m'
        secaar_t='SE of caar_t' secasart='SE of casar_t'
        lcaar_f='95% lower limit of caar_f'
        lcaar_m='95% lower limit of caar_m'
        lcaar_t='95% lower limit of caar_t'
        lcasar_t='95% lower limit of casar_t'
        ucaar_f='95% upper limit of caar_f'
        ucaar_m='95% upper limit of caar_m'
        ucaar_t='95% upper limit of caar_t'
        ucasar_t='95% upper limit of casar_t'
   %end; ;
 %end; *end of loop for corrected incidence;
 * OPTIONS NODQUOTE SOURCE NOTES;
%MEND IRATE;

  /*
 ************************************************************************
 * COMMENT 5 : THE FOLLOWING MACRO(AGEGRP) IS USED IN THE MACRO IRATE   *
 *             AND CREATES A CHARACTER VARIABLE AGE_GP OF LENGTH 5      *
 *             FROM THE NUMERIC VAR AGE_GRP USING THE BEGINNING AGE     *
 *             INTERVALS SPECIFIED IN THE CRATE MACRO CALL.  IT ALSO    *
 *             DELETES ANY OBSERVATIONS OUTSIDE THE DESIRED AGE GROUPS.*
 ************************************************************************
  */
 %MACRO AGEGRP;
    %LET BE=X;
    %LET I=1;
    LENGTH AGE_GP $ 5;
    %DO %UNTIL (&BE= );
         %LET BI=%SCAN(&B_AGE,&I);
         %LET BE=%SCAN(&B_AGE,&I+1);
         %IF &I=1 %THEN %LET MINAGE=&BI; ;
         %LET BEE=%EVAL(&BE-1);
         %IF &BE^=  %THEN %DO;
              %IF &BE<=&BI %THEN %DO;
                   PUT 'BAD AGE INTERVALS';
              %END;
              IF &BI <=AGE_GRP< &BE THEN AGE_GP="&BI-&BEE";
         %END;
         %IF &BE= %THEN %DO,
              %IF 1<=&MAXAGE<=84 %THEN %DO;
                IF AGE_GRP>=&BI THEN AGE_GP="&BI-&MAXAGE";
              %END;
              %IF &MAXAGE >=85 %THEN %DO;
                IF AGE_GRP>=&BI THEN AGE_GP="&BI+";
              %END;
         %END;
         %LET I=%EVAL(&I+1);
    %END;
         IF &MINAGE LE AGE_GRP LE &MAXAGE ;
 %MEND AGEGRP;
*** END OF INCIDENCE MACRO;

  /*
  *** CREATE THE CASES DATASET NEXT AND THEN SUPPLY THE MACRO CALL;
  */
```

APPENDIX B: POPULATIONS 1930-1990

Table 6C

Olmsted Balance Uncorrected

		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
S	G	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
E	R	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7
X	P	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
FEMALE	0	388	382	377	370	365	359	354	348	342	336	331	329	327	326	324
FEMALE	1	1517	1495	1472	1450	1427	1405	1383	1361	1338	1316	1293	1273	1253	1233	1213
FEMALE	5	1525	1578	1629	1682	1733	1786	1838	1890	1942	1994	2046	1995	1945	1894	1844
FEMALE	10	1255	1311	1366	1423	1479	1535	1590	1646	1703	1758	1814	1799	1785	1770	1756
FEMALE	15	814	855	896	938	979	1020	1060	1101	1143	1184	1225	1275	1325	1375	1425
FEMALE	20	851	871	891	911	931	950	969	989	1009	1029	1049	1066	1084	1101	1119
FEMALE	25	840	880	922	962	1004	1044	1084	1126	1166	1208	1248	1265	1282	1299	1316
FEMALE	30	816	841	868	893	918	944	970	995	1020	1047	1072	1103	1136	1167	1198
FEMALE	35	756	767	778	790	801	812	822	833	845	856	867	913	959	1006	1052
FEMALE	40	642	654	666	678	690	702	714	726	738	750	762	798	833	868	904
FEMALE	45	575	589	602	616	630	643	656	670	684	697	711	722	733	745	756
FEMALE	50	488	496	506	514	524	532	540	550	558	568	576	590	603	616	630
FEMALE	55	429	437	446	453	462	470	478	487	494	503	511	526	542	557	572
FEMALE	60	372	378	384	390	395	401	408	413	419	425	431	438	446	453	461
FEMALE	65	265	272	280	287	294	302	309	316	323	331	338	345	351	358	365
FEMALE	70	223	227	231	236	240	244	249	253	258	262	266	271	276	280	285
FEMALE	75	160	162	163	164	165	167	169	170	171	172	174	181	188	195	202
FEMALE	80	95	96	97	96	97	98	99	100	99	100	101	106	110	116	120
FEMALE	85	57	59	59	61	62	63	64	66	67	68	69	78	87	95	104
TOTAL(F)		12068	12350	12633	12914	13196	13477	13756	14040	14319	14604	14884	15073	15265	15454	15646
MALE	0	426	419	411	404	397	390	383	376	369	361	354	351	350	347	345
MALE	1	1548	1535	1521	1509	1496	1482	1469	1456	1444	1430	1417	1395	1371	1349	1325
MALE	5	1660	1708	1757	1805	1854	1903	1951	2000	2048	2097	2145	2089	2033	1977	1921
MALE	10	1324	1391	1457	1523	1590	1657	1723	1790	1856	1922	1989	1968	1948	1927	1907
MALE	15	932	981	1030	1079	1128	1177	1226	1275	1324	1373	1422	1470	1516	1564	1611
MALE	20	750	749	748	747	746	745	744	743	742	741	740	799	859	918	978
MALE	25	871	900	930	959	989	1019	1049	1078	1108	1137	1167	1188	1208	1229	1250
MALE	30	810	840	871	900	931	961	991	1022	1051	1082	1112	1130	1147	1166	1183
MALE	35	796	809	820	833	845	857	870	882	895	906	919	960	1001	1041	1082
MALE	40	708	718	728	738	748	758	768	778	788	798	808	845	881	917	954
MALE	45	666	675	685	693	702	712	721	730	738	748	757	775	793	810	828
MALE	50	542	549	555	562	569	576	583	590	597	603	610	628	646	663	681
MALE	55	470	481	493	504	515	527	538	549	560	572	583	595	607	620	632
MALE	60	433	433	433	434	434	434	435	435	436	436	436	442	449	455	461
MALE	65	313	319	323	329	333	339	345	349	355	359	365	374	382	391	399
MALE	70	218	224	231	237	243	249	255	261	267	274	280	280	281	281	282
MALE	75	185	184	182	181	180	178	176	175	174	172	171	174	177	180	182
MALE	80	92	94	94	96	98	99	100	102	104	104	106	108	112	114	117
MALE	85	57	59	60	62	63	65	67	68	70	71	73	72	71	70	69
TOTAL(M)		12801	13068	13329	13595	13861	14128	14394	14659	14926	15186	15454	15643	15832	16019	16207
TOTAL		24869	25418	25962	26509	27057	27605	28150	28699	29245	29790	30338	30716	31097	31473	31853