HUNTLEY   1551-1801

A   STUDY   IN   POPULATION   GROWTH

Introduction

The research into the population of Huntley started in 1975. Its purpose is to establish and compare trends of this small Gloucestershire parish with surveys on parishes in other parts of the country.

This paper represents a summary of one part of the study in hand, and is restricted largely to the analysis of the population growth prior to the regular ten-year census which started in 1801.

Before any real analytical work can be undertaken it is necessary to establish the base population at various dates. This presents a number of difficulties. One is forced, for example, to consider births, marriages and burials before arriving at any trends. If these details are inaccurate, they will influence the findings, and the very nature of their inaccuracy will tend to support the resulting population trend. It is, however, difficult to treat pop- ulation trend in isolation. Births, marriages and deaths are an integral part of the trend and it would be impossible 'to exclude these details completely.

Some statistics which have been used to enhance the basic facts have been derived from other parts of the study which are not discussed in this paper. The temptation to use these details further has been resisted.

Under-registration, although found to be a problem, does not appear to be significant except between 1661 and 1678. During this period the rector did not keep proper records (1). Details in the registers were found to be very basic in some cases, and in constructing the population figures some assumptions have had to be made.

Certain formula suggested by eminent local historians have been used in the study and are believed to have short- comings. Any criticism made or implied relates solely to their application to the data available for Huntley.

As with any small population minor variations in trends can distort the true picture and indicate dramatic fluctuations in population movement. It is, therefore, important to remember that these variations need to be considered in the light of the small populations on which they are based. At first sight, it may seem strange that the estimated populations quoted later seem to suggest a precise and accurate count of the population. The apparent accuracy results from the method used to produce the estimate. In the

first instance, the base figure is derived from a count of people actually known to have been resident in the parish. A percentage was then applied to this figure to allow for under registration.

It may have seemed logical to "round-off" the result, but this would have introduced a further subjective assessment, and it was, therefore, considered better to leave the estimate as the known base figure plus the percentage which was applied.

The analysis has been based on a number of records which are available. The prime sources of reference have been the parish registers which exist from 1661 and the overseer's accounts which are available over a similar period. These records have been supplemented by the Probyn estate papers, land tax returns and hearth tax return. While the registers are a primary source for establishing births, marriages and burials, the other records mentioned help establish residency.

There is limited information available for earlier years and data has largely been drawn from a study carried out by Dr. Alicia Percival (2).

Population Prior to 1661

The first published statistics relating to the population of Huntley appear in the Domesday Survey of 1086, when a total of eleven men were recorded. Of this number four were villeins, six were cottars and one was a serf. Hoskins (3) suggests that the average number of people per household was probably about five at the time the Survey took place. If serfs are excluded, the total population of Huntley was probably about fifty in number. On the assumption that each recorded man, except the serf, was married, it is possible that there were about twenty-five children in the village, if we make some allowance for the possibility of one or two widows, widowers and people not married. Based on this assumption, there were just over two children per family. This would have allowed for a growth rate of about 0.65% or an increase of one person every three years. J.C. Russell, quoted by Hoskins (3) felt that a multiplier of 3.5 would give a more realistic population figure, but this would indicate a total of only thirty-six inhabitants. If the total number of people who were married was in the same ratio as that given above, there would have been twelve children with an average of less than two per family which would not have been sufficient to maintain even a stable population.

There would not appear to be any other details of population until those quoted in Bishop Hooper's visitation of 1551. The purpose of the visitation was primarily concerned with the attitude and knowledge of the clergy rather than the size of the population. However, this survey does include details of communicants, but these can only be taken as approximations (2). Using an assumption suggested by Hoskins (4) that 40% of the population at this time were

aged 15 years or less, the 120 recorded communicants would indicate that there were about 200 people resident in the village.

Twelve years later another investigation took place by command of the Privy Council. This survey addressed a number of questions including the number of households in each parish. It would seem unlikely that there was any dramatic change in Huntley's population since the Bishop Hooper investigation so that it is probably safe to estimate the average size of a household at five, at this time.

It was another 40 years before any further attempt was made to collect population statistics. A survey in 1603 was commissioned by Archbishop Whitgift and was a further attempt to establish the number of communicants in each parish (2). As its prime purpose was to measure the strength of the Anglican church, it may be seen as being more accurate than the investigation carried out by Bishop Hooper. However, there is also the danger that the figures may have been inflated in some parishes in order to impress the newly arrived King James from Scotland. This survey revealed that the number of communicants was thirty more than the previous count in 1551. Using the formula suggested above, the population may have risen to about two hundred and fifty. This increase represents an annual growth rate of 0.48% which would not seem to be unrealistic for Huntley.

The final study of the population before the parish registers became available was in 1650 when Parliament ordered an enquiry into the type of incumbant and the number of families in each parish (2). This Parliamentary enquiry showed fifty families. If the average family size had remained at about five the population may have remained reasonably stable for a period of almost 50 years.

Circumstances dictate the limit of analysis which is possible on the available data for this period. These limitations not only restrict the analysis but, as illustrated, force the introduction of certain assumptions in order to allow any form of comparison between earlier and later periods. As can be seen below the use of ratios to calculate population trends can be far from satisfactory. Any further attempt to interpret the available data would only add to the speculation and would further encourage spurious accuracy.

Period 1661-1800

The population after 1660 can be assessed more accurately than for earlier years because the parish registers are available for analysis. However, parish registers still present certain limitations because of under-registration and migration.

There are several methods available to produce population estimates, and these are discussed so that the reader may assess the accuracy of the techniques which can be used. The apparent rate of population increase using each method can be seen in Appendix A.

Hoskins (5) suggests that the average number of baptisms over a ten-year period multiplied by a factor of 30 will give a reasonable estimate of the size of the population. The use of this factor assumes a constant birth rate of about thirty-three per thousand. Although under-registration is a problem other factors will also influence the results obtained including the proportion of the female population, and also the proportion who are married. Although it is generally assumed that approximately 50% of the population will be women there are indications that at various times there was an adverse sex ratio in Huntley (Appendix D) in favour of the male population.

A method suggested by Dr. D.E.C. Eversley (6), produces wide fluctuations in population from one decade to another. The unrealistic results are probably caused by applying the formula to a small population. If the formula is modified to incorporate an assumed birth-rate it predicts a population similar to that obtained using the Hoskins method.

Although the formula given below appears more scientific in its approach, it suffers similar limitations to other methods. In the first instance it depends on the accuracy of the parish registers and secondly it employs an assumed birth-rate. Whilte the use of the assumed birth-rate has certain advantages over the Hoskins formula, which uses a constant rate, the result does depend on the accuracy of the assumption. In this study, the assumed rate has been derived from other studies. One disappointing feature of the formula (as modified) is that it prevents any comparison being made with other birth-rate statistics which may be available.

The formula suggested by Eversley is:-

$$\frac{1000 \quad x \quad \text{Average Baptism}}{\text{Birth-rate}}$$

Dr. Eversley suggests a method to estimate the birth-rate but in this study an assumed birth-rate has been substituted for the calculated rate.

Dr. Brownlee, quoted in Tate (7), noted that the death-rate throughout the 17th and early 18th centuries was a constant thirty-two per thousand, and, in consequence, suggested that the average number of deaths could be multiplied by 31 to arrive at a population. (In this study burials have been assumed to be the same as deaths). This approach, as applied, ignores three important factors:-

    (a)   the possibility of epidemic or plague.
    (b)   the generally accepted factor that death-rate
           showed a slow but progressive decline for the
           country as a whole.
    (c)   under-registration.

This method, like those above, prevents any comparison with other statistics because of the assumed death-rates. The calculations used in this study try to make some allowance for the declining death-rate, but the relevance to Huntley is questionable.

It has also been suggested that estimates can be based on the number of marriages which took place. In Huntley, the number of marriages in any one period was small and any attempt to apply a ratio produces wide fluctuations which tends to indicate that the method is not suitable for small parishes.

All the methods discussed above rely on ratios being applied to entries found in the parish registers. A comparison between the first three can be seen in Appendix B. As mentioned earlier, Hoskins and Eversley show a similar picture, and both reveal an underlying trend which shows an increasing population. The increase with the Hoskins method is a little steeper than that found using the Eversley method. Brownlee, on the other hand, produces a very different picture. During the first half of the period, population is seen to increase although during the latter period, the growth rate is not maintained. There are also more fluctuations than by the other methods. The estimated population in 1801 using the burial figures suggests that population would have only been two thirds of the figure found in the 1801 census.

Perhaps the biggest disadvantage with any of the above methods from a demographic point of view is that any further analysis must likewise employ estimates and ratios to determine other factors.. It is, therefore, desirable to seek alternative methods of analysis which will allow comparisons with other data.

One such method is known as "net change". This technique requires a known population at a specific date; usually the 1801 census figure. It is then necessary to work backwards in time by subtracting the number of births and adding the number of burials to the census figure. The resultant population estimate for Huntley is completely unrealistic (Appendix A) showing less than fifty people in the Parish before 1741.

The method used extensively in this study uses data available from the parish registers and other records. The presence of each person at specific dates was noted, where possible from baptism to burial. In order to arrive at a feasible population figure even this method requires a number of assumptions to be made, the two principle being:-

(a) unless there is evidence to the contrary a person is assumed to be resident in the parish between successive recorded dates.
(b) children are assumed resident in the village until the average age of marriage (viz. 17th century, 26 for men and 25 for women, and during the 18th century, 28 for men and 26 for women) providing there is evidence that at least one parent was also resident in the parish during this period.

There are obvious possibilities for inaccuracies with this method but it is suggested that any degree of over-counting will be balanced by other factors, including migration. The assumption that children will be resident until the average

age of marriage should not unduly influence the final result; even without this assumption the result would have only been about 10% less than the suggested figure. Migration also presents a problem as residence has only been credited up until the last entry found in the records, although it is recognised than in many cases the person or family could have left the village some years later.

The result of the "physical" count of people is shown graphically in Appendix B and also in tabular form in Appendix D. The result has been "refined" to compensate for under-registration, by comparing the count with Atkyns's estimate of 1712 and Rudder's estimate of 1779. It is estimated that the figure for 1799 is approximately 7% below the actual figure, while the estimates for 1711 and 1781 were respectively 12% and 9% below the figures given by Atkyns and Rudder. Using these figures as a crude assessment of under-registration, it is possible to arrive at an estimate for Huntley's population by extrapolation from these percentages.

Despite the limitations of the data and method of analysis there are nevertheless certain advantages with this approach.

1. It uses factual evidence of residence.
2. It makes allowances for migration.
3. It is not restricted to one source of data.
4. Assumptions made, and the basis of calculations are known.
5. It permits further analysis.
6. It allows comparisons to be made with other studies.

The results of all the methods are compared in Appendix B which also illustrates the maximum and minimum population figures derived from the employment of ratios. It is interesting to note that the difference between the maximum and minimum figures becomes greater towards 1801. It has already been noted that Hoskins and Eversley methods produce similar figures; with the exception of 1731 they always give the maximum figure.

If the estimated "head-count" were to be superimposed on Chart 1, there would be only three points on the graph where this method produces figures outside the limits suggested by other methods, otherwise this method produces a similar trend to that based on formula given by Hoskins or Eversley.

Characteristics of the Population Trend

Although the available data before 1671 is probably unreliable, it does tend to indicate that Huntley experienced an increase in population during the second half of the 16th century, whereafter it remained reasonably stable for about 50 years before showing a decline. The parish registers are not available before 1661 and for the first 20 years are likely to include a number of inaccuracies. It is quite possible that the figures quoted for this period are less accurate than those for later periods. The figure for 1671

has been inflated by 46% to compensate for this error. This percentage has been derived from a straight line extrapolation from the 1681 figure which is, itself, 17% above the figure found by counting the inhabitants as explained above.

Population continued to rise until about 1721 when the trend was reversed and in the next 20 years the population fell by about 85; a drop in population of 30%. In 1741 population started to climb again and by 1761 had reached about 264. The next 30 years saw a period of apparent stagnation before a further increase is seen. This latter increase continued through to the early years of the 19th century.

Space does not permit a full explanation of all the factors which affected the population during this period. There are signs that migration played a significant part in the formation of the population, however other factors did influence the parish. The baptism rate declined after 1700 and did not regain its former level until 1731. There was another period of an unusually low baptism rate between 1751 and 1760. The burial rate, in contrast to baptism, shows a steady decline throughout the whole of the study period. The only unusual characteristic is that alternate decades, starting with 1681-90 and finishing with 1741-50, show higher burial rates than the intervening decades.

The Period from 1721 until 1750

The sharp decline in population after 1721 has already been mentioned. There are a number of factors which could have contributed.

Under-registration, although a possibility is not considered a serious problem. The rector, who was installed in 1726, appears to have taken a considerable interest in the parish registers, and under-registration of any significance is though unlikely. Although there are known to be some inaccuracies during the incumbancy of his predecessor, no serious omissions have been found. One of the factors which cannot be ascertained is whether baptisms in the village became "unfashionable" for some reason, however a study of the figures allows this theory to be dismissed with reasonable confidence. The number of baptisms remains constant at an average of 6.4 per year between 1711 and 1740 before showing an increase.

The effect on the population of applying the "net change" approach (baptisms minus burials) is illustrated in Appendix C. There was obviously a decline between 1721 and 1730 due to an excess of burials over baptisms. The death-rate between 1721-30 was at one of its peaks and the baptism rate was just beginning to recover after reaching its lowest point in 1721.

Although the burial rate was high there is no evidence of any epidemic during this period. Smallpox was known to be present in Taynton, about 2 miles away, in 1715 although no cases are recorded in Huntley until 1754. Infant mortality

was at its lowest between 1691 and 1700 after which the trend reversed and reached a rate of 153 per thousand between 1721 and 1730. There was some improvement during the next ten years although it still remained high. After 1741 infant mortality reached an all time high of 157 per thousand.

For a period of about 25 years after 1710 male births exceeded females by over 20%. This factor undoubtedly influenced the structure of the population some ten to fifteen years later when we find a similar surplus of men in the population as a whole. This may have contributed to the migratory trends and provided a more stable situation which allowed the population to increase after 1741.

During the period 69 marriages took place in the parish but only 19 couples remained in the village after their marriage. This introduced nine people into the village but of the remaining 100 people who married, 48 former residents left the parish. The effect of migration associated with marriage is illustrated in Appendix C. Two final factors need to be considered. Migration, for reasons other than marriage, may have been influential. It would have only been necessary for three families to leave the village over a 20 year period to produce the population indicated. The other factor which may possibly have played its part was the change in property ownership as Sir Edmund Probyn progressively increased his land holding in the parish.

It is unfortunate that it has not been possible to establish, with any degree of certainty, the reasons for the decline in population, and one can only suggest a combination of factors, namely a probable decline in birth-rate coupled with an increased death-rate and migration to adjacent parishes.

Conclusion

The analysis of population trend obscures a number of other interesting facts about births, migration and death. In concluding it is worth looking briefly at some information which is available and contributes to the structure of the population.

Nearly 10% of recorded baptisms relate to children whose parents resided outside the parish boundary. In 1790 two baptisms took place where place of residence was stated to be Jamaica. After 1720 illegitimate births showed an increase, however this could have been the result of more accurate recording by the rector.

It is believed that migration had a significant influence on the development of Huntley's population. About 60% of couples who were married in Huntley left after marriage. The number of parishioners leaving the parish after marriage was even higher than this figure. Although further work needs to be undertaken to fully understand the impact of migratory trends this degree of movement would not appear to be unusual. The rate of infant mortality was unusually high for the parish between 1720 and 1760. No comparisons have been made with

other studies so it is not known whether this period is
unusual in national terms. Life expectancy at birth was 29
years for boys and 25 for girls. Of those surviving to the
11-15 age group, life expectancy increased to 47 for men and
49 for women. Of all burials about 12% were from people not
normally resident in the parish. About 10% of burials of
parishioners were recorded as being infants. However, other
analysis suggests that this figure is low and a figure nearer
25% may be more realistic. It is also noted that male babies
were more likely to die in infancy than females.

The estimate of population before 1671 unfortunately
has many limitations. It is, nevertheless, interesting that
there may have been a decline in population during the first
half of the 17th century, although it seems unlikely that it
will be possible to establish this fact. The use of ratios
for later periods, after the parish registers become available,
raises many questions about the accuracy of the various methods.
It is felt that the "head count" method produces a more
accurate result although it must be acknowledged that both
Hoskins and Eversley produce similar results.

The results of the study from 1086 until 1801 are
shown in Appendix E.

Obviously, an analysis of population trend reveals
limited information about the social and demographic structure
of Huntley. However, it forms a vital basis for further work
and is a mjor step in completing the study. It is now possible
to develop other facts which have emerged.

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References

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2. Percival, "Gloucester Village Populations" Local
   Population Studies, No.8 (Spring 1972).
3. W.G. Hoskins, Local History in England (1972), p.167.
4. Ibid, p.171.
5. Ibid, p.169.
6. D.E.C. Eversley, An Introduction to English Historical
   Demography (1955) p.264.
7. W.E. Tate, The Parish Chest (1946), p.81.

Other Sources Used During The Study

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Glos.R.O.,P184 IN 1/2   Parish registers 1776-1812.
Glos.R.O.,P184 IN 1/4   Parish registers 1754-1806.
Glos.R.O.,P184 CH 2   Charity records 1712-1779.
Glos.R.O.,P 49 IN 4/1   Commonplace Book of Rev.John Jelf (Blaisdon)
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POPULATION ESTIMATES

- COMPARISON OF VARIOUS METHODS

YEAR	METHOD					
	(a)	(b)	(c)	(d)	(e)	(f)
1671	141	154	174	(13)	118	172
1681	156	168	115	2	157	184
1691	186	197	186	3	169	196
1701	210	220	146	26	183	210
1711	240	248	220	35	211	240
1721	189	193	177	41	253	286
1731	198	199	279	17	216	242
1741	189	186	133	37	179	199
1751	249	243	174	64	223	245
1761	279	268	140	112	242	264
1771	210	198	140	137	246	266
1781	282	261	155	181	249	266
1791	378	344	183	249	247	264
1801	348	314	161	313		313

METHODS USED:

(a) Hoskins - Average Baptisms x 30.

(b) Eversley - Average Baptisms and Assumed Birth Rate.

(c) Brownlee - Average Burials x 31.

(d) Net Change - Subtract births; add burials from 1801
census.(13) indicates negative result.

(e) Estimate based on analysis of parish registers

(f) As (c) with allowance for under-registration -
1801 figure is taken from census.

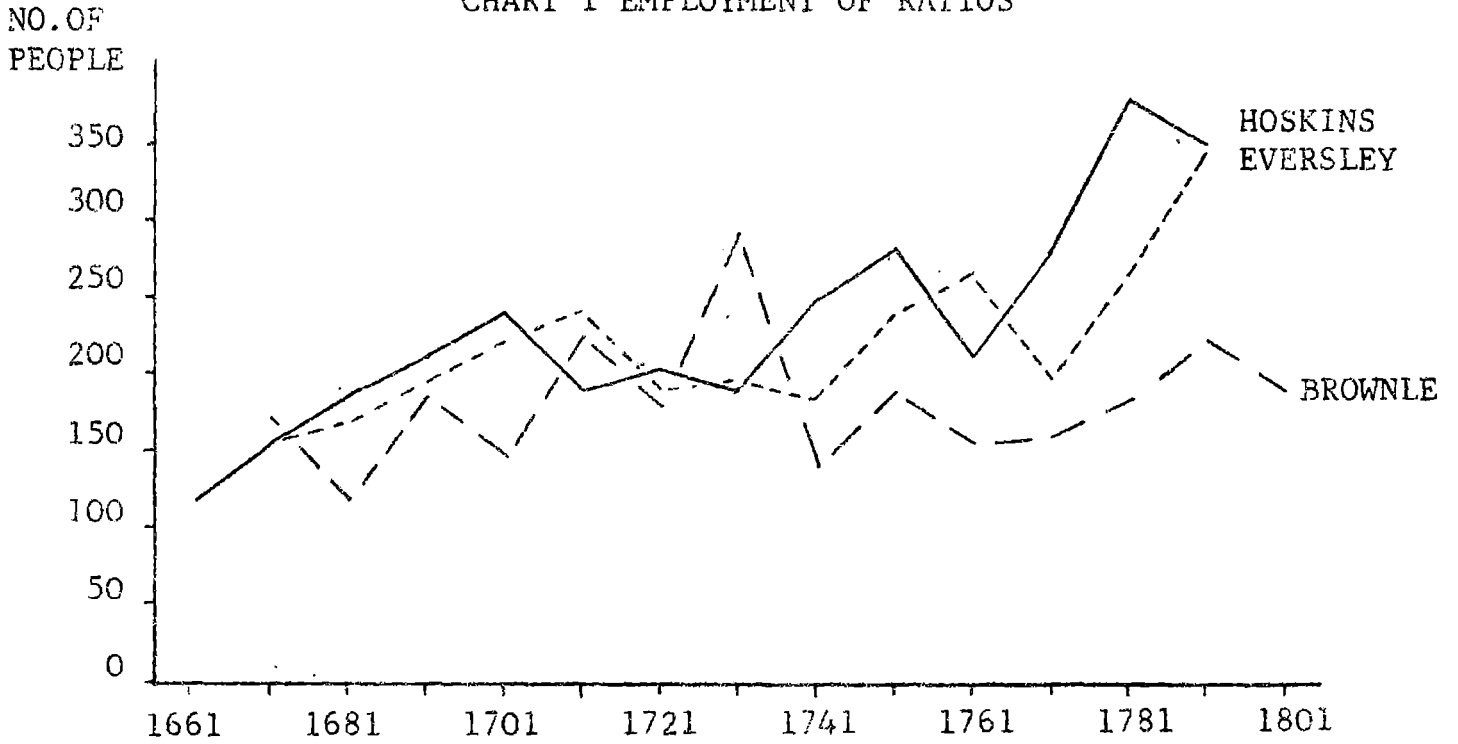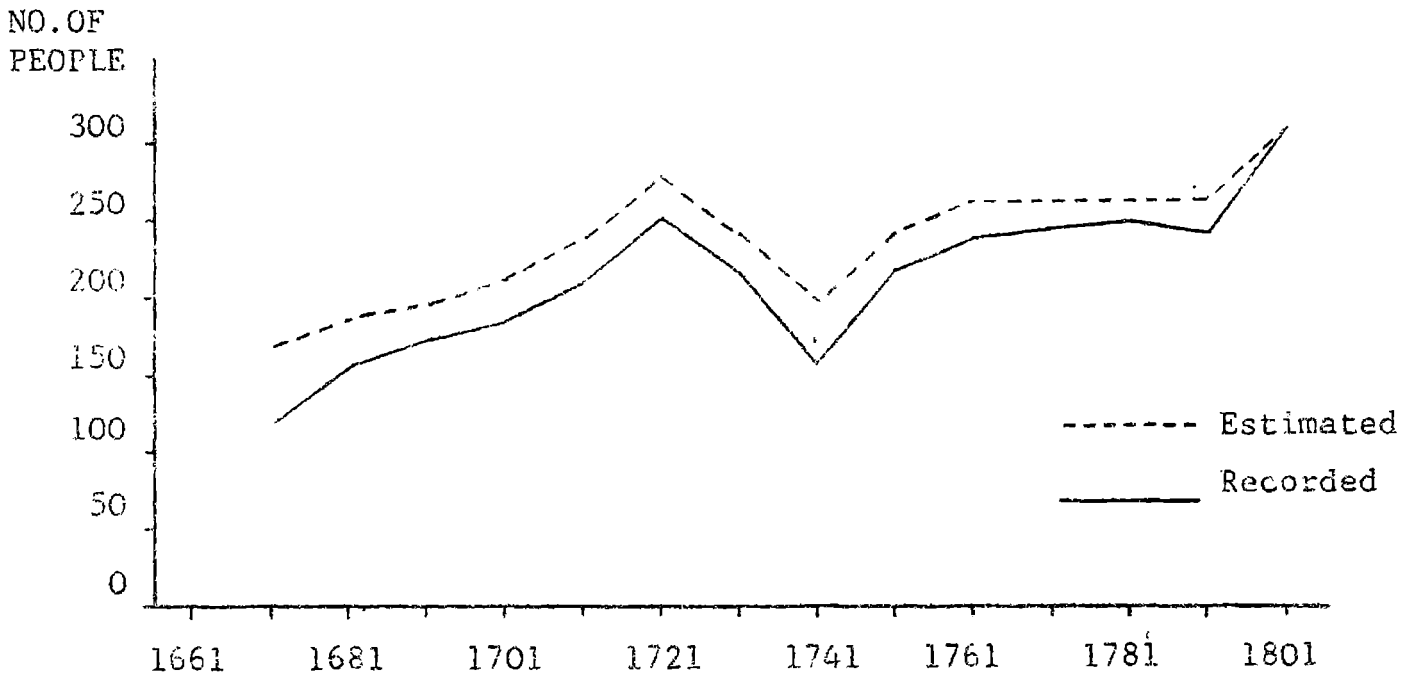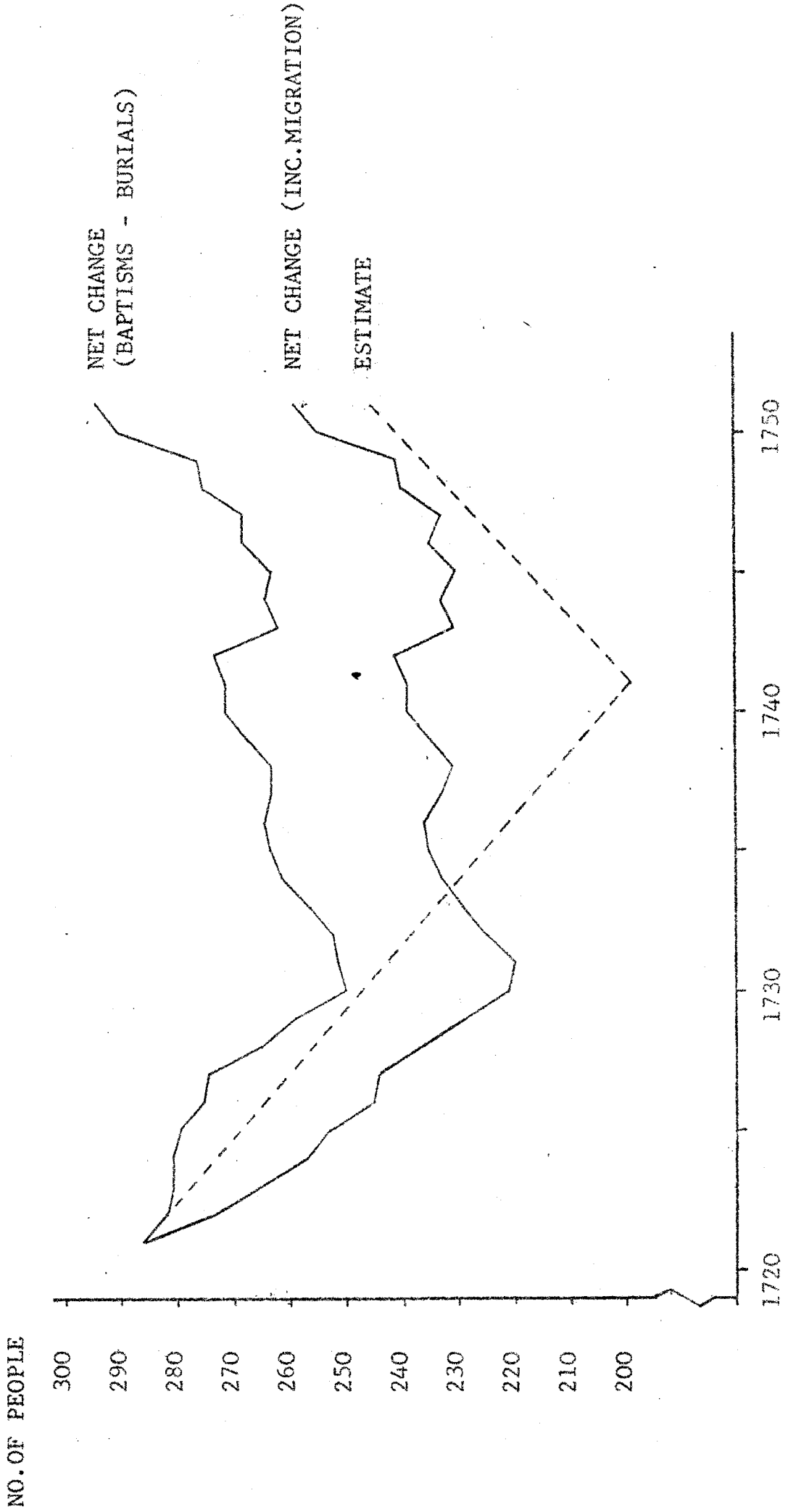## COMPARISON OF POPULATION ESTIMATES

CHART 1 EMPLOYMENT OF RATIOS

CHART 2 ESTIMATE BASED ON RECORDED DATA

POPULATION ESTIMATE 1721 - 1751

NO. OF PEOPLE

NET CHANGE
(BAPTISMS - BURIALS)

NET CHANGE (INC. MIGRATION)

ESTIMATE

POPULATION ESTIMATE BASE
ON AGGREGATE ANALYSIS OF PARISH
RECORDS - 1671-1801

YEAR	RECORDED			ESTIMATE		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1671	57	61	118	83	89	172
1681	76	81	157	89	95	184
1691	88	81	169	102	94	196
1701	94	89	183	108	102	210
1711	100	111	211	114	126	240
1721	125	128	253	141	145	286
1731	119	97	216	133	109	242
1741	100	79	179	111	88	199
1751	106	117	223	116	129	245
1761	126	116	242	138	126	264
1771	127	119	246	137	129	266
1781	133	116	249	142	124	266
1791	137	110	247	146	118	264
1801	165	148	313	165	148	313

NOTES:

1. Recorded - facts as established from entries in recor

2. Estimate - based on an assessment of under-registrati
   males and females in same ratio as those recorded.

3. Sex Ratio - number of males per 100 females.

4. 1801 figure taken from Census.

POPULATION ESTIMATE 1086 - 1801

NO. OF
PEOPLE

300
250
200
150
100
20
0

1050   1150   1250   1350   1450   1550   1650   1750