

Exemplar Marriages Data: Colyton*

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Introduction

This document describes some of the preliminary analysis which it would be useful to do on any of the marriages data for the 404 parishes used in E.A. Wrigley and R.S. Schofield's book *The Population History of England 1541-1871: a Reconstruction*.² The parish of Colyton in Devon is used as the exemplar. Colyton was one of the first English parishes that was subjected to the serious analysis of its parish register data.³ This paper focuses on describing the marriages data rather than trying to relate them to other data sets, and follows closely the suggestions made in the booklet *Parish Register Aggregate Analyses*.⁴

The marriages data

The marriages data for Colyton are contained in the spreadsheet 'Colyton' in the folder for the county of Devon. Within the spreadsheet they are in the worksheets 'mar_year', 'mar_10', 'mar_50' and 'mar_orig'. The data for marriage registration in Colyton cover the years 1538-1837, but there are certain years for which the data were deemed to be defective by the original researchers. These years are 1554, 1642-1649, 1651-1654, 1660-1662, 1664-1669, 1671-1679 and 1681-1696. For these years, the worksheets 'mar_year', 'mar_10' and 'mar_50' contain the corrected

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2 E.A. Wrigley and R.S. Schofield, *The Population History of England 1541-1871: a Reconstruction* (Cambridge, 1989).

3 See, for example, E.A. Wrigley, 'Family limitation in pre-industrial England', *Economic History Review* 19 (1966), pp. 82-109; E.A. Wrigley, 'The changing occupational structure of Colyton over two centuries', *Local Population Studies* 18 (1977), pp. 9-21. For a wide-ranging study of the social and demographic evolution of the parish, see P.M. Sharpe, *Population and Society in an East Devon Parish: Reproducing Colyton 1540-1840* (Exeter, 2002).

4 R.S. Schofield and A. Hinde, *Parish Register Aggregate Analyses*, 2nd edn (Alton, 2020).

totals of events, and the worksheet 'mar_orig' contains the original data as taken from the register.⁵

It would be worth looking at the original data for years that have been corrected and comparing them with the corrected data. The methods used to make the corrections 'were designed to give reasonable results over a large number of parishes, and often represented a compromise between many conflicting considerations', so they may not be ideal for any individual parish.⁶ In the case of Colyton's marriages, the original data for the years that have been corrected are shown in Table 1.

Inspection of Table 1 reveals that most of the corrections involve adding a single marriage to months, or runs of months, where the number of marriages in the original data was zero. There are some entire years with no marriages recorded (such as 1692 or 1694) but, in most of the years to which corrections were made, the number of marriages recorded was not zero, but fell below what would have been expected. The process by which the corrections were done is described by E.A. Wrigley and R.S. Schofield in *The Population History of England 1541-1871: a Reconstruction*.⁷ It involved establishing the underlying trend in the number of marriages over several years either side of the year(s) of defective registration.⁸ This gave an estimated number of marriages that should have taken place in each of the months for which registration was defective if the evolution of the numbers of marriages over time had followed the trend. However, since marriages were not evenly distributed across the months of the year, Wrigley and Schofield 'generated a set of monthly frequencies from all the parishes that were fully registered to use as a guide to [seasonal] periodical variation occurring during defective periods'.⁹ The estimated values from the trend were then adjusted to allow for this seasonal variation and the results were rounded to the nearest whole marriage. A check was then made to see whether the sum of the corrected rounded monthly values came to the same total as the sum of the corrected unrounded monthly values and, if it did not, the difference 'was randomly distributed among the months comprising the defective period with a probability of selection proportionate to the number of events recorded for that month'.¹⁰

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- 5 In the original data file supplied by the Cambridge Group for the History of Population and Social Structure, 1659 and 1670 are marked as years for which corrections were made. However, inspection revealed that the original and 'corrected' monthly totals were identical.
- 6 Schofield and Hinde, *Parish Register Aggregate Analyses*, p. 9.
- 7 Wrigley and Schofield, *Population History of England*, pp. 30-2 and 705-7.
- 8 Wrigley and Schofield, *Population History of England*, p. 31.
- 9 Wrigley and Schofield, *Population History of England*, p. 31.
- 10 Wrigley and Schofield, *Population History of England*, p. 31.

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Table 1 Original and corrected marriages data for years that have been corrected: Colyton

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1554	3	0	0	0(1)	0(1)	0(1)	0	0	0(1)	0(1)	0(1)	0
1642	0	2	1	3	3	0	0	0	2	0(1)	1(2)	0
1643	0(1)	0	1	0(1)	0(1)	0	0(1)	0	0(1)	0(1)	0(1)	0(1)
1644	0(1)	0(1)	0(1)	0(1)	0(1)	0(1)	0(1)	0	0	1	2	0(1)
1645	0(2)	0(1)	1	0	0(2)	0(1)	1	1	0(1)	0(1)	0(1)	0(1)
1646	0(1)	0	3	1	0	0	0	0	3	6	1	0(2)
1647	0(1)	0(1)	0	0(1)	0(2)	0(1)	1	0	0	0(2)	0(1)	0(1)
1648	0(1)	0	0(1)	0(1)	0(1)	0(1)	0	0(1)	0	0(1)	0(1)	0(1)
1649	0(1)	0(1)	0(1)	0(1)	0(1)	0	0(1)	2	0	0	0	0
1651	0(1)	0(1)	0	0(1)	0(2)	0(1)	1	0	1	0(1)	1	0(1)
1652	0(1)	0(1)	0(1)	0(1)	0(1)	1	0(1)	0(1)	1	2	0(1)	0(1)
1653	0	0(1)	0	0(1)	0(1)	0(1)	0(1)	0	1(3)	0	0	1
1654	0	0(1)	0(1)	0(1)	1	1	0	1	2	0	0	1
1660	1	0	0(1)	0(1)	1	0(1)	0(1)	0(1)	0	0(1)	0(1)	0
1661	0	1	0	1	0(1)	2	2	0	0(1)	2	1	0(1)
1662	0	0(1)	0	0(1)	0(1)	0(1)	0	0	0(1)	1	0	0
1664	1	1	0	1	2	1	1	1	1	0	1(2)	0
1665	0(1)	0(1)	0	0(1)	0(1)	0(1)	0(1)	0	0(1)	0(1)	0(1)	0
1666	1	0(1)	0	1	0(1)	0(1)	0(1)	0	0(1)	0(1)	0(1)	0
1667	0(1)	0(1)	0	1	1	0(1)	0(1)	0	0	0(1)	0(1)	0
1668	0(1)	0	0(1)	0(1)	0(1)	1	1	0	1	0(1)	1	0
1669	0	0(1)	0	1	0(1)	1	0	1	1	0	1	0
1671	0(1)	0(1)	0	0	0	0	0(1)	0	0	0(1)	0(1)	0
1672	0(1)	0	0	2	2	0(1)	0(1)	1	1	0(1)	0(1)	0
1673	0	0	0	2	1	1	0	0	0	0(1)	0	0
1674	0	0(1)	0	0	1	0(1)	0	0	0	0(1)	1	0
1675	0(1)	0	0	0(1)	0(1)	0(1)	0	0	1	0(1)	0(1)	0
1676	0(1)	1	1	0	1	0(1)	0(1)	0	0	0(1)	0	2
1677	0	0(1)	0	0	0(1)	0(1)	0(1)	0	0	0(1)	1	2
1678	1	1	0	1	0(1)	0(1)	0	0	0	1	0	0
1679	1	0(1)	0	1	0	0(1)	0	0	0(1)	0(1)	0(1)	0
1681	0	0	0	0	1	0	1	0	0(1)	0(1)	1	1
1682	0(1)	0(1)	0	0(1)	0(1)	1	0	0	0(1)	0(1)	0(1)	0(1)
1683	0(1)	1	0	1	1	1	0(1)	0	0(1)	0(1)	0(1)	1
1684	0(1)	0	0	0(1)	0	0(1)	0	0	2	1	1	1
1685	1	0(1)	0	1	0(1)	1	0(1)	0	0(1)	0(1)	0(1)	0
1686	1	0	0	0	1	0(1)	0	1	0	0(1)	1	0

Table 1 (continued)

1687	0(1)	0	0	1	0(1)	1	0(1)	0(1)	0(1)	0(1)	1	0(1)
1688	0(1)	0	0	0(1)	0(1)	1	0	0	0(1)	0(1)	0(1)	0(1)
1689	0	0	0	1	0(1)	0	0	1	0(1)	0(1)	0	0
1690	0	0	0	1	1	1	0(1)	1	0	0(1)	0(1)	0
1691	0(1)	0(1)	0	0(1)	0	0(1)	0	0	0(1)	1	0(1)	1
1692	0(1)	0(1)	0	0(1)	0(1)	0(1)	0	0	0	0	0(1)	0
1693	0	0(1)	0	0(1)	0(1)	1	0(1)	0	1	0(1)	0(1)	0
1694	0	0(1)	0	0(1)	0(1)	0	0	0	0	0(1)	0(1)	0
1695	0	1	0	1	0(1)	1	0	1	1	1	1	0(1)
1696	0	0(1)	0	0(1)	0(1)	1	0	1	0	2	0	0

Note: The original totals are shown outside the parentheses. The corrected totals are in parentheses where corrections were made.

Source: Parish registers of Colyton, Devon.

It is interesting to observe that in Colyton the number of corrections made to the marriage register varies seasonally. May and October received the greatest number of corrections, whereas there were no corrections at all in March from 1669 onwards. The lack of corrections in March probably reflects the fact that marriages were rare during the season of Lent and most of March falls within this season in most years, with the whole of March falling within Lent in many years. Therefore the fact that no marriages were recorded in March is likely to be correct even in years where the recording is in general believed to have been defective. The other point worth noting about the corrections is the vast majority of them simply involve changing the number of marriages recorded in a particular month from 0 to 1. Put simply, the algorithm making the corrections seems to have decided to add a certain number of marriages to specific years; it then distributed these additional marriages more or less evenly across the years in question.

Seasonal indices

The spreadsheet 'Colyton' includes a worksheet 'mar_50' which is reproduced in Table 2. The first point to note about the pattern is that there are very few marriages in March before 1750, and rather few in December throughout the period. This is because the penitential seasons of Lent and Advent largely fall in March and

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December and clergy were reluctant to hold marriage ceremonies during those periods.

The biggest single value in Table 2 occurs for January in the first period. However, we should be cautious about interpreting this, as the first period only includes 12 years so the variations observed may be due to random fluctuations. In *Parish Register Aggregate Analyses*, the suggestion is made to ‘apply a statistical test to evaluate the probability of a chance occurrence of an observed pattern ... before

Table 2 **Indices of the seasonality of marriages: Colyton 1538-1837**

Years	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1538-1549	209	82	0	46	75	123	89	89	185	134	154	15
1550-1599	140	107	5	75	109	120	109	58	144	112	192	33
1600-1649	124	94	32	104	122	128	77	75	102	149	157	38
1650-1699	87	107	34	133	150	119	92	42	133	129	122	58
1700-1749	114	68	21	175	142	136	104	104	100	107	93	38
1750-1799	85	118	89	131	108	127	102	82	87	99	96	78
1800-1837	59	82	167	173	108	96	110	90	75	104	61	73

Note: The numbers in this table give the number of marriages in that month in the relevant period as a percentage of the ‘uniform daily rate’, which is the number of marriages we should expect in that month in the relevant period if marriages were uniformly distributed across the calendar year. The details of the method of calculation are given in R.S. Schofield and A. Hinde, *Parish Register Aggregate Analyses*, 2nd edn (Alton, 2020), p. 14.

Source: Parish registers of Colyton, Devon.

embarking on finding any explanations’.¹¹ One test suggested there is the Kolmogorov-Smirnov test, which ‘can be used to evaluate a single distribution against the hypothesis of “no seasonality”’.¹²

11 Schofield and Hinde, *Parish Register Aggregate Analyses*, p. 14.

12 Schofield and Hinde, *Parish Register Aggregate Analyses*, p. 14.

We can illustrate the use of the Kolmogorov-Smirnov test using the marriages data from Colyton for the period 1550-1599. To perform the test we need to calculate the following for each month of the year during the period:

- (1) the probability that a marriage would happen on or before the last day of each month using the actual distribution;
- (2) the probability that a marriage would happen on or before the last day of each month under the null hypothesis of ‘no seasonality’;
- (3) the total number of marriages in the period.

We can calculate (1) and (3) from the worksheet ‘mar_10’ by adding up across the five decades of the 1550s, 1560s, 1570s, 1580s and 1590s (see Table 3). The total number of marriages in the period is 506. There were 60 in January, 42 in February, just 2 in March, and so on. The number of marriages occurring before the end of January is just 60, the number of marriages in January. The number of marriages occurring before the end of February is $60 + 42 = 102$, the number of marriages in January plus the number of marriages in February. We can calculate the number of marriages occurring before the end of each subsequent month in a similar manner. Finally, we calculate the probability of a marriage occurring before the end of each month by dividing these numbers by 506 (the total number of marriages). All these calculations are shown in Table 3.

To calculate (2) we need first to distribute the observed number of marriages across the months of the year assuming a uniform distribution. If the average year has 365.25 days, and there are a total of 506 marriages, then the number of marriages in each month is equal to $506 \times (\text{the number of days in the month divided by } 365.25)$. For January, this will be $506 \times 31/365.25 = 43$; for February it will be $506 \times 28.25/365.25 = 39$ (rounding to the nearest whole number in each case). We then calculate the number of marriages occurring before the end of each month by cumulating these monthly totals up to and including the month in question, and compute the probabilities by dividing these cumulative numbers by 506.

The final stage in the application of the Kolmogorov-Smirnov test is to calculate the absolute difference between the two probabilities for each month using the observed data and the null hypothesis of ‘no seasonality’.¹³ These differences are shown in the last row of Table 3. For January the difference is 0.034, for February 0.039, and so on. The largest difference occurs for August at 0.065. Are these differences statistically significant? Another way of putting this is to ask: what is the chance that we would obtain differences between the observed data and the uniform distribution as big or greater than these if the long-run

13 We refer to the ‘absolute difference’ because we do not care which of the two probabilities is the larger: all we are interested in is the difference between them.

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Table 3 Application of the Kolmogorov-Smirnov test to the marriage data for Colyton 1550-1599

Quantity calculated	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Observed number of marriages	60	42	2	31	47	50	47	25	60	48	80	14
Observed number by the last day of each month	60	102	104	135	182	232	279	304	364	412	492	506
Number of marriages assuming uniform distribution	43	39	43	42	43	42	43	43	42	43	42	43
Number by the last day of each month assuming uniform distribution	43	82	125	167	210	251	294	337	379	422	463	506
Probability of marriage happening by the last day of each month using observed data	0.119	0.202	0.206	0.267	0.360	0.458	0.551	0.601	0.719	0.814	0.972	1.000
Probability of marriage happening by the last day of each month assuming uniform distribution	0.085	0.162	0.247	0.329	0.414	0.496	0.581	0.666	0.748	0.833	0.915	1.000
Absolute difference between probabilities	0.034	0.039	0.042	0.062	0.054	0.038	0.030	0.065	0.029	0.019	0.057	0.000

Note: The numbers presented here have been rounded to the nearest whole number for marriages, and to three decimal places for probabilities.

seasonal pattern really were uniform and the differences were just generated by random fluctuations? The Kolmogorov-Smirnov test enables us to quantify this. The test looks at the month with the largest difference in the two probabilities. If this largest difference is greater than 1.36 divided by the square root of the total number of marriages used in the calculation, then the chance of getting a difference as large as this were marriages uniformly distributed across the year is less than 1 in 20. If the largest difference is greater than 1.63 divided by the square root of the total number of marriages used in the calculation, then this chance is less than 1 in 100. Using the results in Table 3, the largest difference in the probabilities is for August at 0.065. If we divide 1.36 by the square root of 506 we obtain 0.060. Since 0.065 is greater than 0.060 we conclude that the chance of obtaining the data we have if the null hypothesis were true is less than 1 in 20. Therefore it is likely that the number of marriages in Colyton varied non-randomly from season to season during the period 1550-1599. Similar calculations could be done for the other periods.

You might at this point wonder about this conclusion and about the rationale for performing the Kolmogorov-Smirnov test. Surely it is obvious that the number of marriages in March is abnormally low and the most likely reason for this is the prohibition on marriages in Lent? This is a fair point. The Kolmogorov-Smirnov test is a 'minimalist' test in the sense that it tells you only whether or not two distributions exhibit a difference that it is statistically significant. It gives no information about the nature of the difference, still less about what might have caused the difference. The nature of the difference can be ascertained by looking at the two distributions carefully: the reasons for any difference must be sought through an understanding of the context and the historical processes involved.

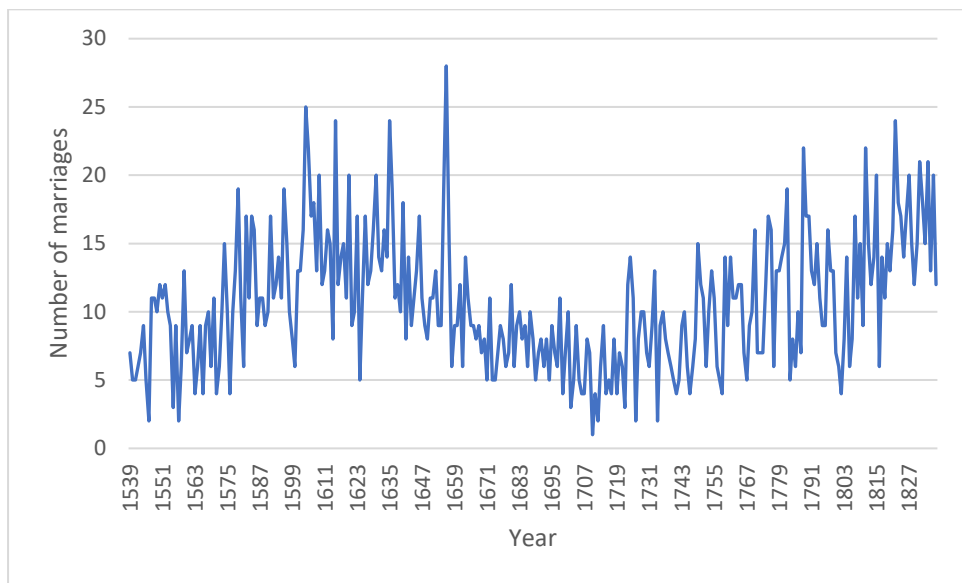
Looking again at Table 2, there is an indication that, until at least 1650, the autumn was the favoured season for marriages. Gradually, though, there is a move to a springtime peak, which is clearly noticeable after 1800. The whole question of the seasonality of marriages and its association with the rural economy has received a great deal of attention in the literature. Rather than delve into this subject here, readers are referred to that literature.¹⁴

14 A good starting point would be Wrigley and Schofield, *Population History of England*, pp. 286-305. The association between marriage seasonality and the agrarian economy is the subject of A. Kussmaul, *A General View of the Rural Economy of England, 1538-1840* (Cambridge, 1990). Examples of studies of marriage seasonality in particular parishes include W.J. Edwards, 'Marriage seasonality 1761-1810: an assessment of patterns in seventeen Shropshire Parishes', *Local Population Studies* 19 (1977), pp. 23-7; and N. Woodward, 'Seasonal marriage patterns in Chipping Campden in the eighteenth and nineteenth centuries', unpublished manuscript (n.d.) (<https://www.chippingcampdenhistory.org.uk/wp-content/uploads/2020/04/Seasonal-Marriage-Patterns-in-Chipping-Campden-in-the-C18-and-C19.pdf> [accessed 13 January 2024]).

Trend in marriages over time

A most useful initial piece of analysis is to plot the corrected annual totals of marriages for the period in question, in this case 1538-1837. However it seems sensible to omit the year 1538 as the register started part of the way through that year. The annual marriage totals for the years 1539-1837 are shown for Colyton in Figure 1.

Figure 1 Annual marriage totals: Colyton 1539-1837



Source: Parish registers of Colyton, Devon.

The number of marriages increases steadily from the beginning of the series to the 1620s or so. From the 1630s it declines more or less linearly until the second decade of the eighteenth century. After that it increases, again more or less linearly, until the series ends in 1837.

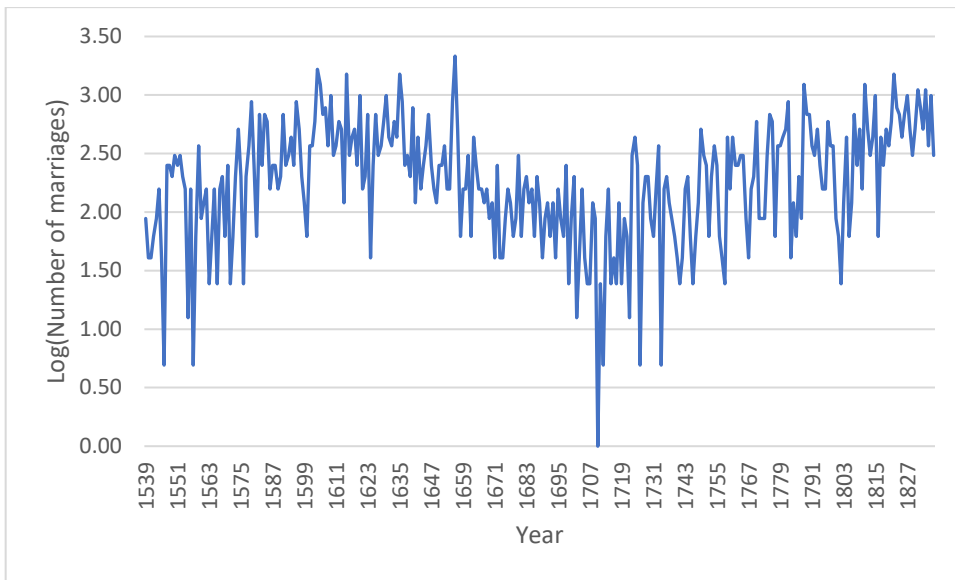
In *Parish Register Aggregate Analyses* the authors suggest that

[s]ince, for many purposes, what is at issue is not the absolute size of a fluctuation in a series, but its magnitude relative to the number of events normally being registered at that time, it is helpful to graph using a

logarithmic vertical scale. This has the advantage of making equal proportionate fluctuations in the series diverge by the same vertical distance from the prevailing level of the series regardless of how high or low the latter may be. In this way the eye can pick out the major fluctuations quite easily.¹⁵

The Colyton marriage series is plotted on a logarithmic scale in Figure 2. The variation across time follows broadly the same pattern as in Figure 1. However the fluctuations from year to year in the periods when the number of marriages was large (such as 1590-1660 and 1775 onwards) are reduced in magnitude compared with Figure 1, whereas the year-on-year variability in years when the number of marriages was smaller is enhanced (see, for example, the first couple of decades of the series).

Figure 2 Annual marriage totals: Colyton 1539-1837 plotted on a logarithmic scale



Note: The logarithm used here is the natural logarithm, or the logarithm to the base e .

Source: Parish registers of Colyton, Devon.

15 Schofield and Hinde, *Parish Register Aggregate Analyses*, pp. 14-15.

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The fluctuations in the number of marriages from year to year make it harder to visualise the underlying trend. One way to extract the trend is to calculate a *moving average*. The moving average for a given year is calculated by using the average of the given year and several years either side. In *Parish Register Aggregate Analyses* an 11-year moving average is suggested consisting of the given year and the five years either side, that is a ‘window’ of 11 years.¹⁶ The longer the window used, the smoother the resulting series. There is a balance to be struck between using a window long enough to remove ‘random’ fluctuations and highlight the underlying trend, but not using a window so long that it hides medium-term changes that might be of substantive interest. There is also the problem that it is not possible to compute a moving average for the years at either end of the series. With an 11-year moving average we ‘lose’ five years at either end; with a 25-year moving average we would lose 12 years at either end.

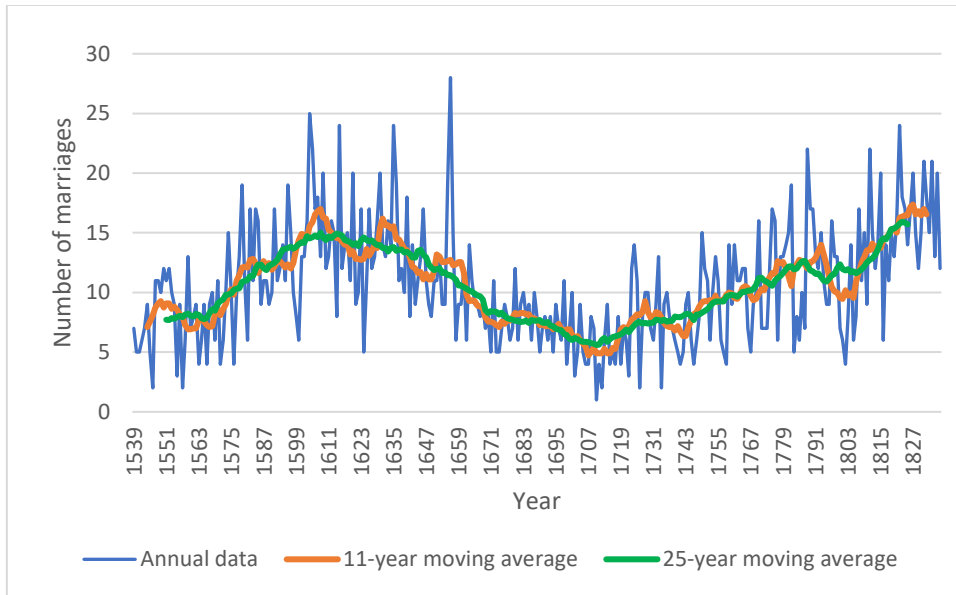
Figure 3 shows the original marriage series for Colyton with an 11-year and a 25-year moving average superimposed. The 25-year moving average smooths away all short-term and medium-term fluctuations, leaving only the long-run trend of a rise in the annual number of marriages from the 1550s to the 1620s followed by a decline, a bottoming-out around 1710 and then an increase until 1820, with a slight hiatus from about 1780 to about 1805. The 11-year moving average reveals the same pattern, but also emphasises some shorter-run fluctuations. The ‘slight hiatus’ in the rising trend between 1780 and 1805 is revealed to be due to a pronounced dip in the number of marriages in the first decade of the eighteenth century. Thus both the 11-year and the 25-year moving averages are useful in aiding an understanding of trends in the number of marriages over time in this example.

This analysis of marriage patterns suggests that there must have been a number of phases within Colyton’s population history that are reflected in these patterns, but it does not provide definitive answers as to what might have characterised these phases. One possibility is that there was population growth in the late sixteenth century, a gradual decline in the population through much of the seventeenth century and then a resumption of population growth in the eighteenth century. Another is that, from the early seventeenth century, there was an increase in the proportion of Colyton’s population who were dissenters, which resulted in a decline in the proportion of marriages that took place in the Church of England.¹⁷ One purpose of this kind of preliminary descriptive analysis is to indicate where the efforts needed to explain these patterns should be directed.

16 Schofield and Hinde, *Parish Register Aggregate Analyses*, p. 15.

17 A rise in dissent is not the only reason that marriages may have been solemnised outside the Anglican church. Until Hardwicke’s Marriage Act came into effect in 1754 a marriage was considered valid provided vows were exchanged before witnesses, regardless of where the exchange of vows took place (see Wrigley and Schofield, *Population History of England*, p. 29).

Figure 3 Colyton marriages 1539-1837: original data and moving averages

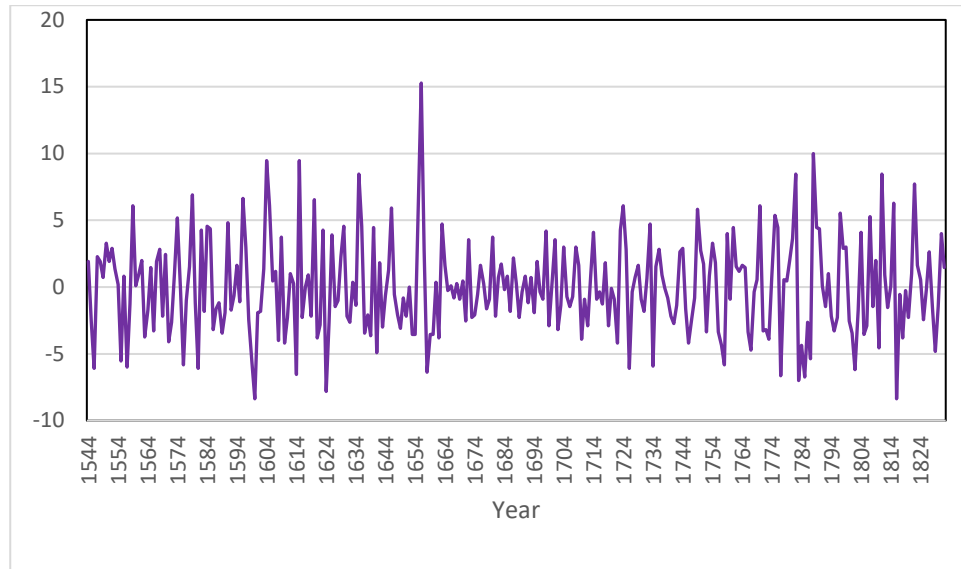


Source: Parish registers of Colyton, Devon.

Figure 4 plots difference between the original figures in the series and the 11-year moving average. This is a measure of the size of the fluctuations in the annual data. The fluctuations appear to be rather larger before the 1660s than they were afterwards, although their magnitude does gradually increase during the eighteenth century. For a more objective summary of the trend over time in the size of the fluctuations we can calculate the mean absolute percentage deviation from trend, something which is achieved by adding together the individual annual percentage deviations from trend in each quarter-century, treating negative deviations as if they were positive, and dividing by the total number of years for which the adding up has been done.¹⁸ Table 4 shows the outcome. The variability of the marriage series is high in the period 1550-1574 and lowest in the last quarter of the seventeenth century. But the variability is generally higher in the period after 1700 than in the earlier period.

¹⁸ Schofield and Hinde, *Parish Register Aggregate Analyses*, p. 15.

Figure 4 Deviation of annual data from 11-year moving average:
Colyton marriages 1544-1832



Source: Parish registers of Colyton, Devon.

Comparison with other parishes and regions and with national trends

When working on the data for a particular parish, it is always worth comparing the patterns and trends observed in the parish with the national patterns and trends.

In *The Population History of England*, E.A. Wrigley and R.S. Schofield identified the 20 years in which the annual percentage deviation of the national marriage rate above or below a moving average was the greatest.¹⁹ There is a complication here, in that, when they drew up this list, Wrigley and Schofield used years running from 1 July – 30 June, as these were felt to be more appropriate for comparison with fluctuations in the standard of living, so that to effect a valid comparison we need to compute the numbers of marriages for Colyton for years defined in a similar

¹⁹ Wrigley and Schofield, *Population History of England*, p. 323.

Table 4 **Mean absolute percentage deviation from 11-year moving average trend by quarter-century: Colyton marriages 1550-1824**

Quarter century	Mean absolute percentage deviation from 11-year moving average trend
1550-1574	32.4
1575-1599	25.4
1600-1624	25.6
1625-1649	21.5
1650-1674	26.7
1675-1699	19.4
1700-1724	36.2
1725-1749	30.0
1750-1774	28.0
1775-1799	33.3
1800-1824	36.0

Source: Parish registers of Colyton, Devon.

way. This is straightforward to do using the original marriages data.²⁰ Table 5 shows the ten years for which the percentage deviations above and below the national 25-year moving average birth rate were greatest, and gives the corresponding percentage deviations for the marriage series for Colyton (using a 25-year moving average).

Generally speaking, in years that the national marriage rate was most notably above the trend, the number of marriages in Colyton was also unusually high. This was especially true of the year 1655-1656. Similarly, in all but one of the ten years in which the national marriages were below trend to the greatest extent, the number of marriages in Colyton was unusually small.

²⁰ All the calculations carried out in the paper are reproduced in the Excel spreadsheet 'Colyton PLUS marriages' in the worksheet 'mar_year', save the calculations for the Kolmogorov-Smirnov test, which are in the worksheet 'mar_10'.

Exemplar Marriages Data

Table 5 **Years in which the greatest percentage deviations from a 25-year moving average are observed for the national marriage rate compared with corresponding deviations in the Colyton marriage series**

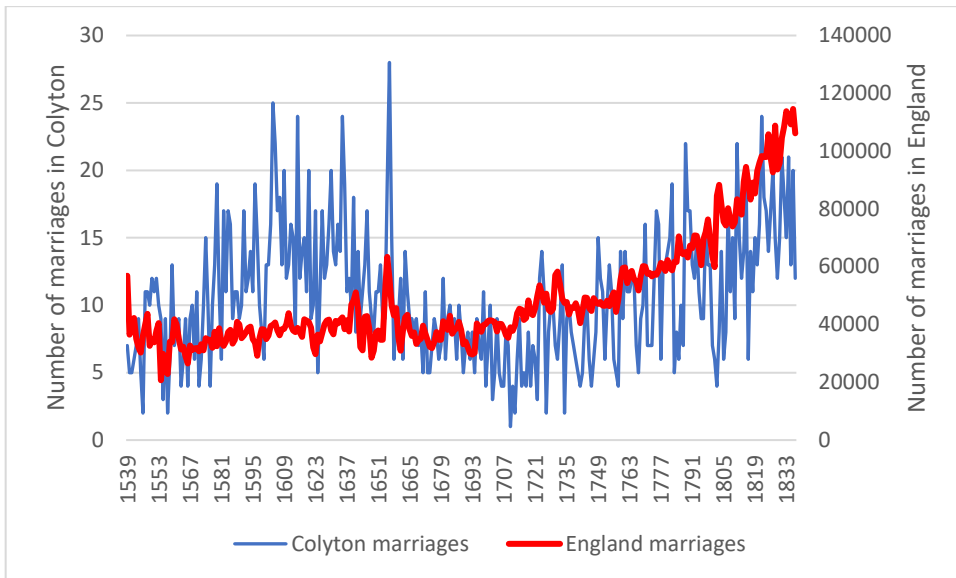
	Year	Annual percentage deviation above or below moving average	
		National marriage rate	Colyton marriages
Above	1655-1656	67.5	143.9
	1654-1655	36.1	4.2
	1561-1562	29.9	13.1
	1641-1642	28.2	-8.5
	1731-1732	27.4	19.7
	1730-1731	26.3	22.3
	1559-1560	25.7	57.8
	1639-1640	24.3	11.3
	1547-1548	23.5	na
	1802-1803	22.8	-58.1
Below	1556-1557	-41.8	-11.2
	1648-1649	-35.0	-25.7
	1643-1644	-30.6	-17.4
	1554-1555	-23.5	-34.9
	1693-1694	-23.3	-4.9
	1652-1653	-21.8	-7.8
	1622-1623	-21.1	-7.9
	1660-1661	-20.5	-14.8
	1553-1554	-20.0	39.6
	1692-1693	-19.9	-33.2

Note: na – not available. It is not clear how the deviation from the 25-year moving average was computed by Wrigley and Schofield for the year 1547-1548, as the 25-year moving average for that year requires data for the years 1535-1536 to 1559-1560 inclusive, and the parish register series do not start until 1538.

Sources: Parish registers of Colyton, Devon; E.A. Wrigley and R.S. Schofield, *The Population History of England 1541-1871: a Reconstruction* (Cambridge, 1989), p. 323.

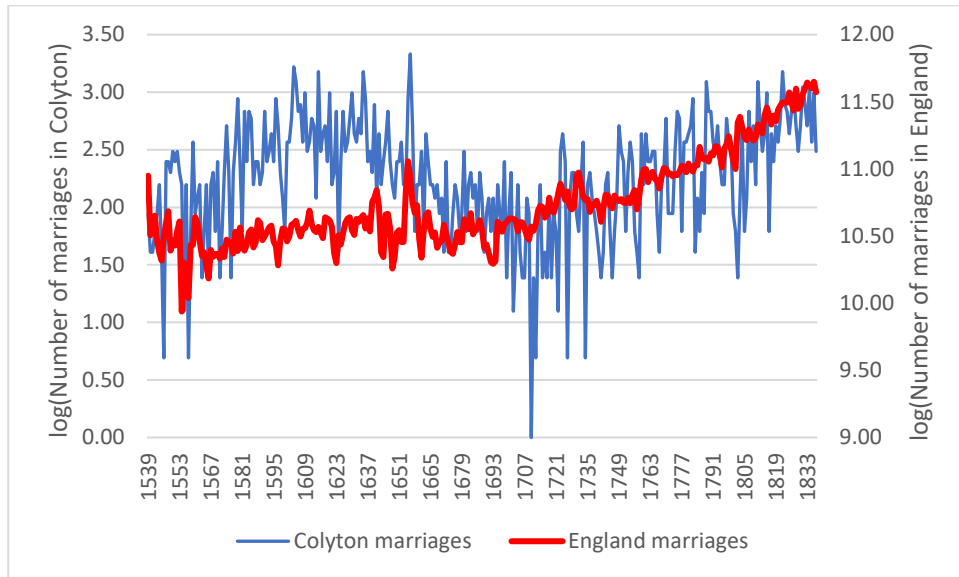
Finally in this section we can compare the pattern of marriages over time in Colyton with that in England as a whole. Here we use the estimated number of marriages in England and Wales rather than the estimated number of births, so that we are comparing like with like. Figure 5 shows the number of marriages in Colyton each year from 1539 to 1837 plotted on the left-hand axis and the number of marriages in England and Wales, plotted on the right-hand axis. Figure 6 shows the Colyton and whole of England series plotted on a logarithmic scale. For convenience, we have used two different scales, one for Colyton on the left-hand axis and a second for England as a whole on the right-hand axis.

Figure 5 Annual marriage totals, Colyton 1539-1837; and estimated annual marriage totals, England 1539-1837



Source: Parish registers of Colyton, Devon; E.A. Wrigley and R.S. Schofield, *The Population History of England 1541-1871: a Reconstruction* (Cambridge, 1989), pp. 537-44.

Figure 6 Annual marriage totals, Colyton 1539-1837; and estimated annual marriage totals, England 1539-1837, plotted on a logarithmic scale



Source: Parish registers of Colyton, Devon; E.A. Wrigley and R.S. Schofield, *The Population History of England 1541-1871: a Reconstruction* (Cambridge, 1989), pp. 537-44.

It is convenient to interpret these in two periods: 1539 to about 1700, and around 1700 to 1837 and to take the more recent period first. During the eighteenth and early nineteenth centuries the number of marriages in England rose from about 40,000 to over 100,000. In Colyton the increase was of a similar order of magnitude, from around 5-10 per year to around 15 per year, but took place later, not beginning until the second half of the eighteenth century. It is clear that most of the increase in the national total of marriages derived from increasing population (more women being in the population to get married), but that some was due to an increased propensity of the population to get married.²¹ For Colyton we do not have reliable population data before 1801, but we know that the population of the parish increased from 1,641 in 1801 to 1,774 in 1811, 1,945 in

21 See A. Hinde, *England's Population: a History since the Domesday Survey* (London, 2003), pp. 177-91 especially p. 188.

1821, 2,182 in 1831 and 2,451 in 1841.²² The increase in population from 1801 to 1831 was thus almost 33 per cent, and the increase in the number of marriages over the same period was about 42 per cent (from 12 per year to around 17 per year). This is consistent with most of the increase in the number of marriages being due to a rising population with an additional element deriving from a greater likelihood that individuals would at some point in their lives get married.

In the earlier period the trends in marriages in Colyton were rather different from those in England as a whole. In England as a whole the number of marriages increased very slowly, and approximately linearly, between the mid sixteenth century and the turn of the eighteenth century. In Colyton, on the other hand, the number of marriages rose between the mid sixteenth century and the 1620s before falling away again. The difference in the temporal pattern between Colyton and England as a whole can only be understood by looking at the specific context of Colyton, for example whether there were likely to have been changes in the completeness of registration in the parish, or whether the base population in Colyton might have shown trends different from those in the country as a whole. A major reason for making the comparison between Colyton and the whole of England is to highlight features of the Colyton experience which were different from that in the entire country.

Conclusion

This short paper has illustrated the marriages data in the file 'Colyton' and suggested some initial analyses which should be done before using the data to address more substantive questions about, for example, the association between demographic change and economic and social change in the parish. The analyses are generally straightforward and they are contained in the spreadsheet 'Colyton PLUS marriages', which readers of this paper could study for further details. The spreadsheet 'Colyton PLUS marriages' also includes the data for the national series for England which are used in this paper.

22 Census of Great Britain, 1851, *Population tables, I. Number of the inhabitants in 1801, 1811, 1821, 1831, 1841 and 1851. Vol. I*, British Parliamentary Papers 1852-53 LXXXV (C. 1631), p. 40.