

# **The Occupational Structure of England 1750-1871 Some Preliminary Results**

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*An ESRC Funded Project*

*Male Occupational Change and Economic Growth 1750-1851*

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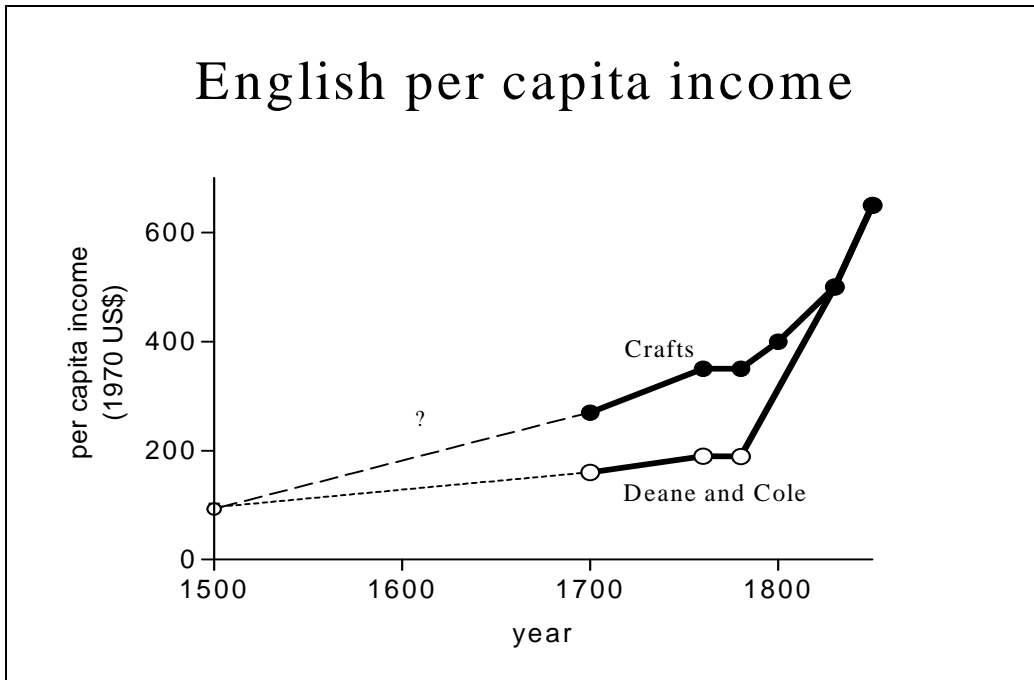
*Note to readers. This is not a paper as such but a summary of findings to date for an ongoing research project.*

Tony Wrigley and I hold a three-year research grant from the ESRC to reconstruct the evolution of English Male Occupational Structure from 1750 to 1850. We are now a little over two-thirds of the way through our initial funding. What I want to do today is present some preliminary findings based on the first phase of data collection.

This is the first stage of a longer-term research project the aim of which is to provide a broad overall picture of the development of England's occupational structure from the early sixteenth century through to the culmination of the industrial revolution during the nineteenth.

### **Historiographical Background**

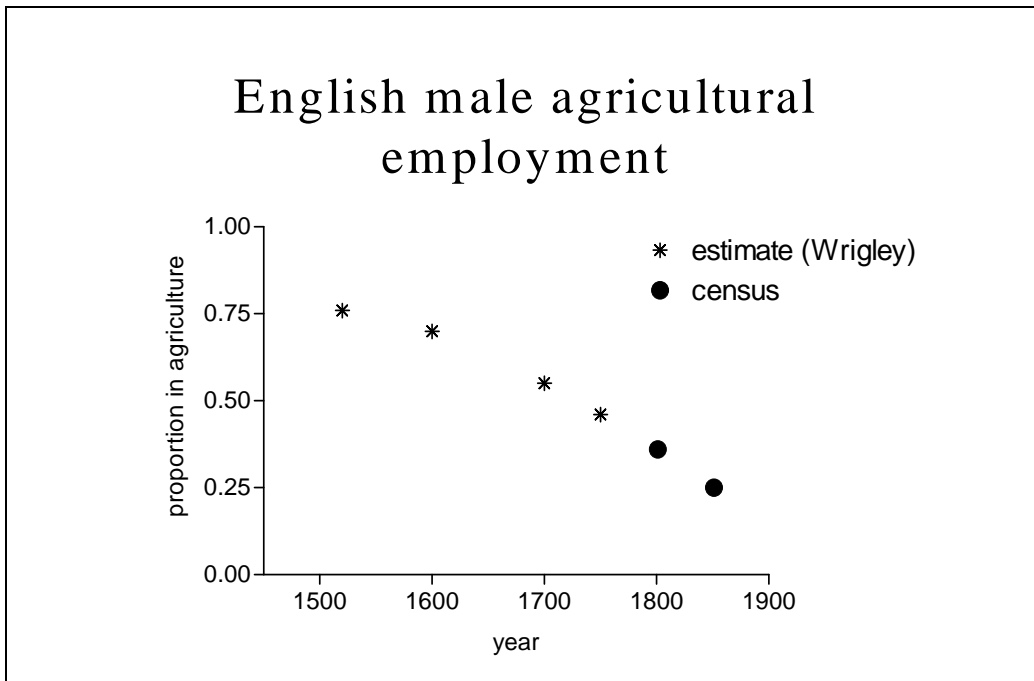
Over the last three decades the literature on the industrial revolution has stressed much slower economic growth between 1700 and 1850 than had been argued by an earlier generation of historians. The corollary of this, illustrated in the overhead is that GDP per capita must have been much larger in 1700 than was once supposed



This carries the further implication that much economic development preceded 1700.

However, beyond this, we lack any overall map of the timing and geography of change between the early sixteenth and the early nineteenth centuries. We know a great deal, in much detail, about some industries and some localities in particular sub-periods though nothing about some surprisingly important industries. But we have no satisfactory overall narrative.

However, if it were possible to know the occupational structure of the economy and how it changed over time: that is, how many men and how many women were employed in each sector of the economy and how this changed across the period then we would have an overall template to which all the detailed studies that have accumulated could be fitted. It would also pinpoint the areas where further research is most needed.



This OHP shows estimates made some years ago by Tony Wrigley of agriculture's share of adult male employment over time.

The first census was not taken until 1801 and that tells us little more than that only 40% of the English population worked in agriculture. This is remarkable in itself because at this time elsewhere in Europe the figure varied from 60% to 80%.<sup>1</sup> Only with the censuses of 1841 and 1851 do we finally get a clear picture of the occupational structure of the economy – and this is why there is no dispute about the structure of the economy from the middle of the nineteenth century onwards.

Before 1800 we have no reliable figures for the relative sizes of different economic sectors. We can say that the proportion of the population engaged in agriculture fell from an estimated 80% in 1500 to 40% in 1800. But the pre-1800 figures shown on the overhead are estimates rather than hard data. The implied rise in agricultural productivity revolutionised the economy by enabling the proportion of the workforce not engaged in agriculture to rise from 20% to 60%. But we cannot, at present, specify reliably, either the timing or the regional patterning of this development.

#### The Research Project

The first three year phase of our longer-term research project has been funded by the ESRC and is primarily concerned with male occupations from 1750 to 1850 simply because these are relatively well documented and will provide a secure anchor point from which we can subsequently move backwards towards 1500 and sideways to look at female employment.

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<sup>1</sup> As late as 1870 50% of the German workforce in the primary sector, 49% of French. Italy and Spain were 55% and 56% as late as 1910. The English figure was 25% in 1841.

# The Occupational Structure of England 1500 - 1850

Males	1750-1850	ESRC funded major project* 1801 & 1841 censuses militia ballot lists baptismal registers
	1500-1750	pilot projects funded by ESRC* testamentary evidence poll tax records baptismal registers
Females	1500-1850	pilot projects funded by ESRC* church court depositions probate accounts

\*ESRC Award RES-000-23-013 £597,000

The critical importance of this first phase of the project is that we will be able to specify, in considerable detail, for the first time, what the English economy looked like in the 1750s and 1760s at the beginning of the classic industrial revolution period.

In the next few minutes I want to describe briefly the sources we are using before moving on to present some preliminary results.

I will treat the sources in reverse chronological order. At the end of our period we are principally using the published 1841 and 1851 census material which is available at both national and at county level.

Our second key source is baptism registers from 1813-20. In 1812 Rose's Act decreed that Anglican baptism registers should record the occupations of fathers whenever a child was baptised. This was almost universally practiced at parish level. By abstracting fathers' occupations for the years 1813-20 we are able to produce a snapshot of male occupational male structure a generation before the 1841 census for more or less any parish in the country.

Prior to 1813 we are dependent on two different sources. The first of these are militia ballot lists. These are documents which were compiled between 1757 and 1831 as part of the process of selecting men to serve in the militia. Parish constables were required to draw up lists of adult males initially aged 18-50 and subsequently 18-45 and to enumerate their occupations. Some categories of men were exempt but they were supposed to be recorded and then ruled through. These lists were then used as the basis for a ballot to select men to serve in the militia. Wherever these documents survive on a reasonable scale we are abstracting the occupational information.

Unfortunately militia ballot lists are very rare for Lancashire and the West Riding of Yorkshire. But fortunately in these and some other northern counties it was not uncommon to record fathers' occupations in baptism registers well before 1813. Such registers form our second set of pre-1813 sources. Each of our sources has it's own potential sources of bias. I don't have time to discuss these but I am happy to come back to them in the questions.

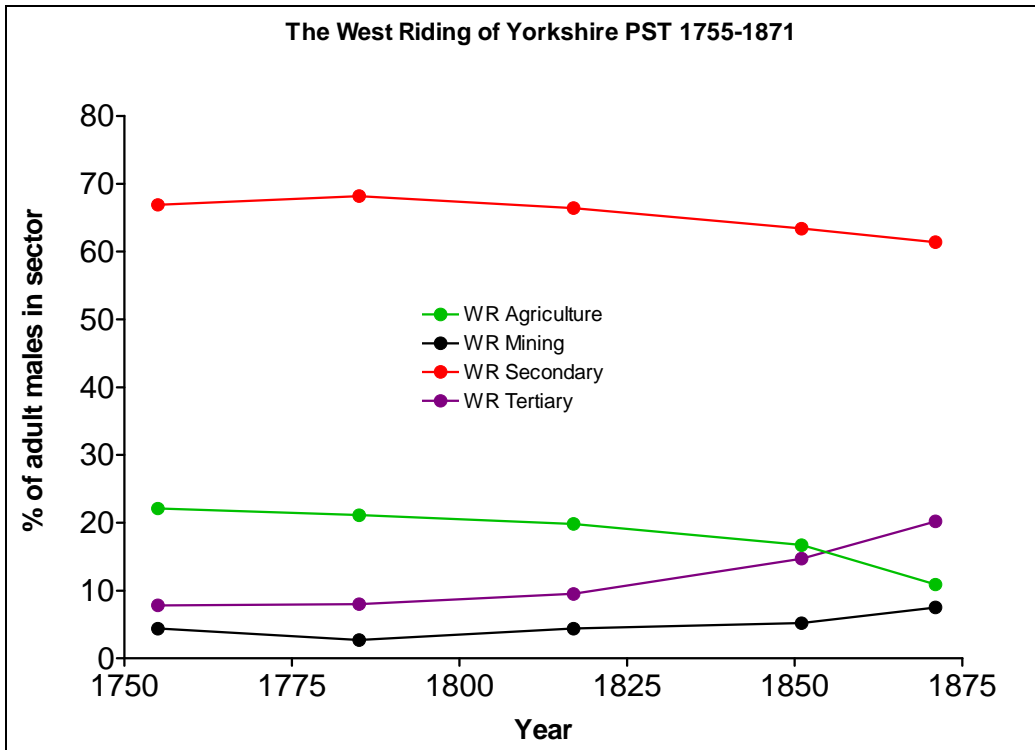
### Case Studies

The core of the project consists of case studies of a number of counties for which there are good sources of data for the eighteenth century. We currently have datasets for the West Riding of Yorkshire (the second most important industrial county), Northumberland (coal-mining), London, Hertfordshire (agricultural) and Northamptonshire (de-industrialising). In a few more months we will have Lancashire. Maps one and two give a very clear indication of the critical importance of Lancashire, the West Riding of Yorkshire and London for any understanding of England's economic development 1750-1851. As can be seen these three areas, together with the Birmingham area formed the only really important concentrations of adult male secondary sector employment in 1851.

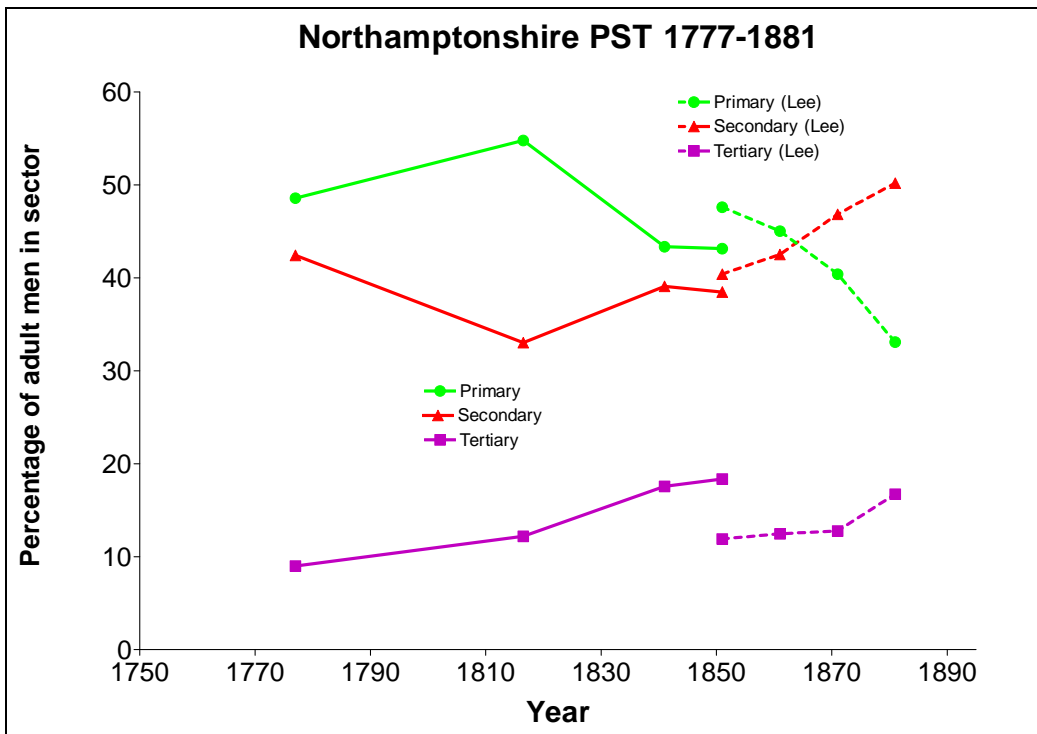
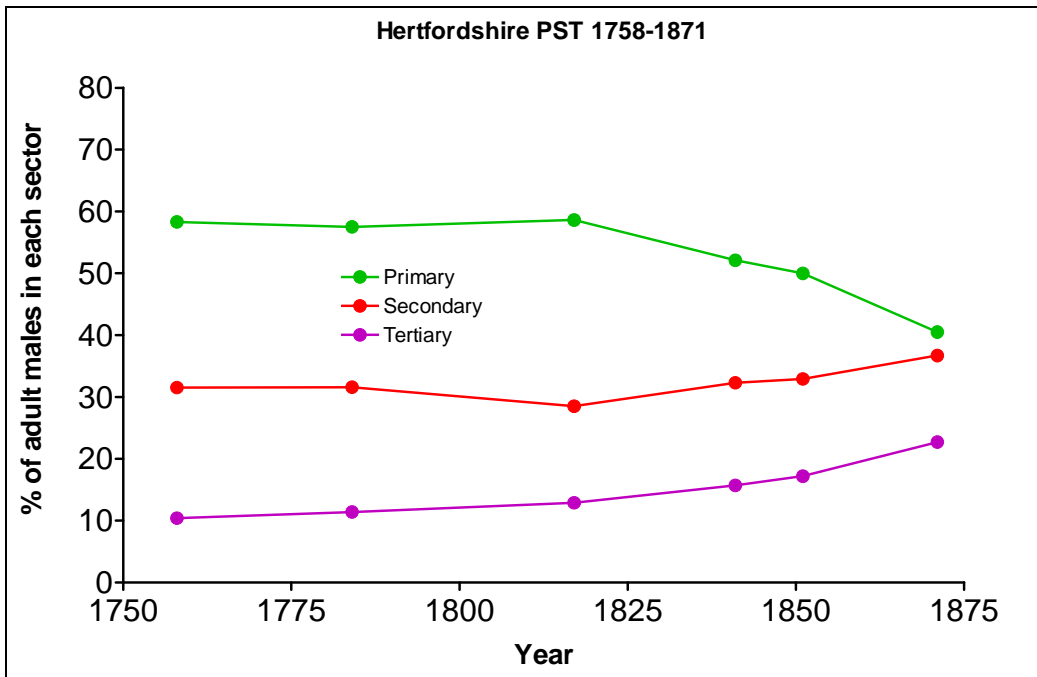
**Map one here**

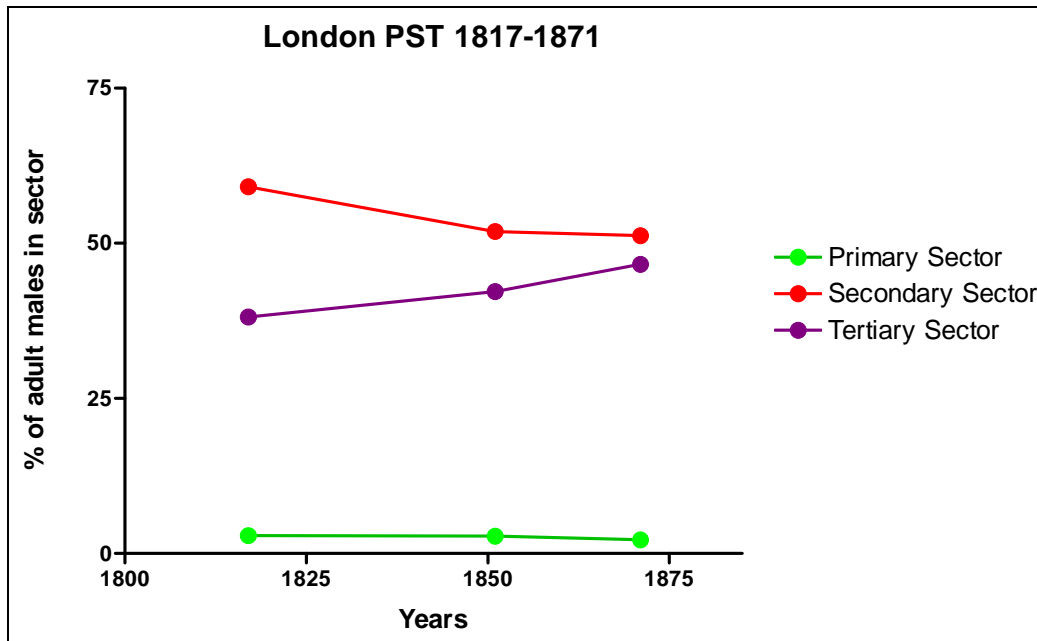
**Map two here**

I have not written a text for the case study section of the paper but am including the figures below which summarise the evolution of the primary, secondary and tertiary sectors in the counties for which we presently have data.<sup>2</sup>



<sup>2</sup> Except for Northumberland since my research associate has gone on holiday and taken all the evidence with him!





### Some VERY preliminary conclusions

I want to conclude the paper by offering some very tentative conclusions. They are tentative for three reasons. Firstly, we have no comparable datasets for changes in female and child employment. Secondly, we do not have data for the whole country. Thirdly, we only put the London, West Riding and Northumberland datasets together in the last fortnight and it is always possible that we have made some horrendous mistakes in a hurried and preliminary analysis.

Much has been written in the last couple of decades about the importance of regional development during the industrial revolution. In particular it has been suggested that reliance on national aggregate measurements of national growth rates in GDP per capita have obscured profound structural changes taking place at the regional level.

The evidence presented here suggests a different view. At the regional level, changes in male occupational structure turn out to have been surprisingly muted. So far we have found no evidence anywhere of a marked growth in the proportion of adult males employed in the secondary sector. We do not, of course, yet have data from Lancashire. But we do have evidence from London, the West Riding of Yorkshire, Northumberland, Northamptonshire and Hertfordshire. None of these places experienced a radical growth in the size of the secondary sector and both London and the West Riding actually experienced a slight decline whilst Northamptonshire experienced significant, albeit temporary, de-industrialisation.

However, since counties with high concentrations of non-agricultural employment experienced much more rapid population growth than relatively agricultural counties it follows that there was a radical change in the male occupational structure between 1750 and 1871, though we do not yet have enough data to quantify this. However, this change will be visible only at the aggregate national level. So whereas it is often argued that national aggregate change obscures radical change at the regional level the reverse appears to be true. Stability at the regional level obscures radical change at the national level.

Our findings so far suggest that highly distinctive regional male occupational structures were in place by the mid-eighteenth century, and perhaps earlier. For the next 120 years at the regional level the size of the secondary sector varied little, but from the late eighteenth century the size of the tertiary sector, especially transport grew rapidly and in the early nineteenth the agricultural sector began to decline. At national but not regional level the shift from agriculture to the secondary sector must have been pronounced between the mid eighteenth and the late nineteenth centuries, though we are not yet in a position to quantify this.

Since the demographic evidence suggests that fertility and mortality were not very different in different parts of the country this broader structural change was driven by migration from areas which at an early date had highly agricultural occupational structures to areas which had high levels of non-agricultural employment by the mid eighteenth century.

One reason our conclusions need to remain tentative is that we do not yet have data from Lancashire. Another is that we do not have data on changes in female occupational structure over time. The female experience was undoubtedly different but there are no compelling reasons to think it would change the story being suggested here.

Reported market economic activity rates for adult women varied massively around the country in 1851.

### **Map 3 here**

In most of the country reported adult female activity rates were between 20% and 50%. They were above 50% in most of the textile districts of the West Riding and Lancashire and very high in some of the lightly populated districts further north which had probably experienced considerable out-migration to nearby industrial and mining areas. They were high in some of the smaller textile zones in the West country and East Anglia and in the straw and lace districts of the south-east Midlands, Nottinghamshire and Devon.

But on the Durham coal-field they fell below 20%. Reported participation rates, therefore, varied astonishingly from under 20% in some coal-field areas to over 70% around Luton.

Whether female participation rose or fell overall during industrialisation is a much disputed point. The answer no doubt varied very considerably around the country.

I want now to compare the geography of population growth with the gendered geography of employment opportunity.

### **Map 4 here**

There are four areas with a notable concentration of population growth: the industrial districts of Lancashire and the West Riding, the area around Birmingham, London and the Durham coal-field. This differential population growth, driven by migration, would have produced most of the national shift from agricultural to non-agricultural employment between 1750 and 1870. But this migration took place to areas with very high levels of adult male employment in the non-agricultural sector. Areas characterised by high levels of economic opportunities for adult women but not for adult men, most strikingly the south-east Midlands, did not experience rapid population growth. Areas with high levels of economic opportunities for men but with relatively low or very low opportunities for adult women such as London or the

Durham coal-field nevertheless grew rapidly. In short relative population growth appears to have been driven largely by the opportunities for adult male employment. This reflects the importance of the male-breadwinner economy documented by Jane Humphries and Sara Horrell. A much more careful statistical analysis of these data will obviously be required to test this hypothesis adequately.

To summarise. We have three broad tentative conclusions:

- One: There was no radical expansion of secondary sector employment at the regional level.
- Two: There was a dramatic growth of the tertiary sector and a decline in the agricultural sector from the late eighteenth century in all regions.
- Three: The bulk of the growth of the secondary sector at national level was caused by differential migration driven by male employment opportunities.

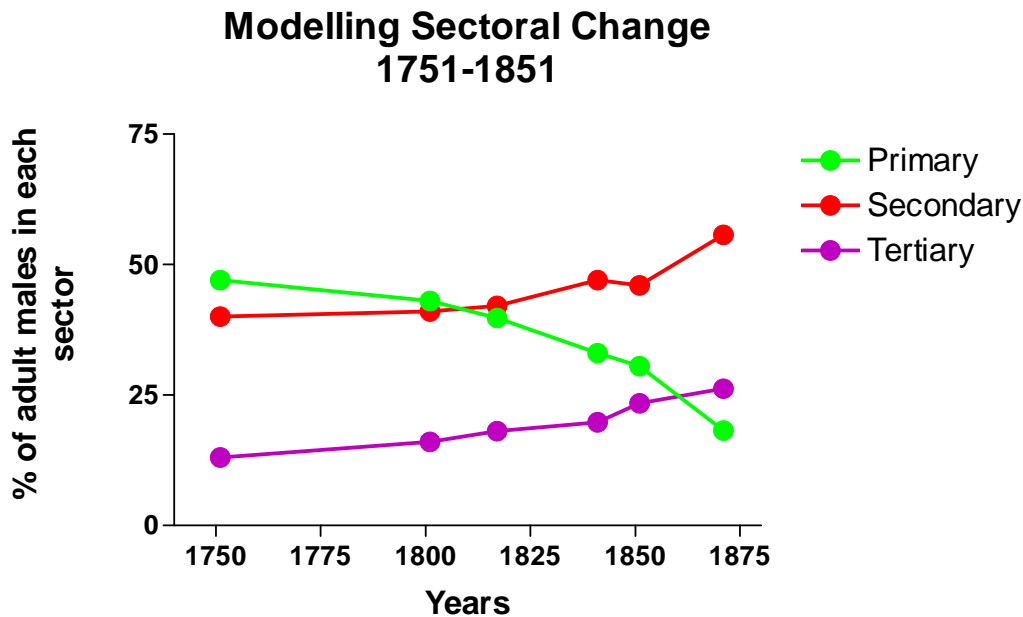
## A Speculative Addendum

### Modelling Sectoral Change in England 1751-1851

The case studies we have to date suggest the following stylised assumptions for adult males could be used in conjunction with population data from registration districts for 1801 and 1851 and occupational data from registration districts in 1851 to model the change in male occupational structure:

- (1) At local or regional level the secondary sector accounted for the same proportion of employment across the period 1751-1851.
- (2) At local or regional level the tertiary sector rose 0.5% p.a across the period 1751 to 1801 (the average rate in the West Riding, Northamptonshire and Hertfordshire from the mid C18th to 1817) but rose at 0.75% from 1801 to 1851 (the average national rate from 1817 to 1851).

These assumptions produce the result shown below. The data from which these assumptions have been derived are graphed at the end of this document. I have assumed the relative population growth rates for registration districts was the same in 1751-1801 as in 1801-1851 but have constrained them to fit Wrigley and Schofield totals.<sup>3</sup>



The results are promising. The data for 1841, 1851 and 1871 are derived from the published census. The data for 1817 derive from a random national sample of 300 parish registers drawn by Tony Wrigley some years ago.<sup>4</sup> The data from 1801 and 1751 are the estimates derived by back-projecting the 1851 RD data on the basis laid out above. The new 1801 estimates are very plausible in terms of the 1817 estimates.

<sup>3</sup> By inflating the population totals for each RD in 1751 by 31% above what they would be if pop growth had been as 1810-1851. Pop growth was 31% higher 1801-1851 than 1751-1851 according to W&S.

<sup>4</sup> Thanks are due to a number of volunteers, recruited through an appeal in *Local Population Studies* who collected these data.

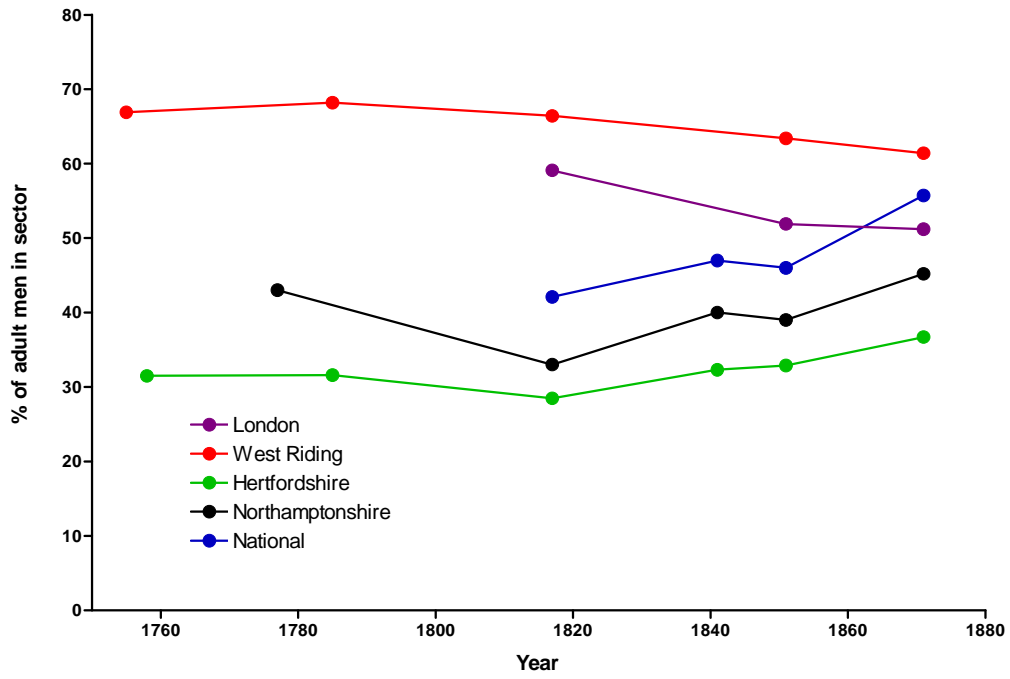
The 1801 primary figure is 43 % compared with Wrigley's figure for agriculture in 1811 of 39.3% . However mining accounted for 1.7% in the 1817 sample. If we assume the same figures held in 1801 and deduct from the primary total to get an estimate of the agricultural total we get a figure of 41.3%.<sup>5</sup> This is quite close to Wrigley's figure for ten years later of 39.3%. Our figure of 1.7% for mining may itself be an underestimate by as much as 50%. This is because (a) the sample is too small (at 300 parishes out of 10,000) to be confident for such a spatially concentrated activity (b) the figures for 1841, 1851 and 1871 are respectively 3.2, 3.8 and 3.2 which do not suggest a rapidly increasing sectoral share.

Note: The primary sector calculation is calculated as a residual and hence prone to the highest errors.

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<sup>5</sup> A better estimate of all these figures could be made by back projecting using AMST (Agriculture etc, Mining, Secondary and Tertiary) and modelling mining separately. I do not yet have enough data to do this.

## The Growth of the Secondary Sector



## The Growth of the Tertiary Sector

