

# The Big Sort: Selective Migration and the Decline of Northern England, 1800-2017

Gregory Clark, UC Davis, Neil Cummins, LSE

13 May 2017

The north of England in recent years has been poorer, less healthy, less educated and slower growing than the south. Using two sources - surnames that had a different regional distribution in England in the 1840s, and a detailed genealogy of 78,000 people in England giving birth and death locations - we show that the decline of the north is mainly explained by selective outmigration of the educated and talented. Surnames associated with the north in 1840, for example, show no disadvantage relative to those associated with the south in terms of educational attainment, occupation, and political power in 2017 in England as a whole. Similarly, in the individual genealogies migrants from the north were more educated, wealthier, and have higher occupational status than the resident southern population, even back in 1800. But stayers in the north were less educated, poorer, and with lower occupational status. This implies that policies designed to aid the population in the north in the form of regional investments, or encouragement of migration south, are likely to be ineffective in boosting outcomes for the remaining northern population.

Since at least 1918 the north of England, as well as Wales, has lagged the south in output per person, educational attainment, and life expectancy. The depressed state of the North now can be seen in a number of indicators as in Table 1 below. The north has significantly lower output per person, lower life expectancies at birth, a much lower rate of acceptance to elite universities, and much lower house values. A larger share of output is generated, also, through public sector employment.

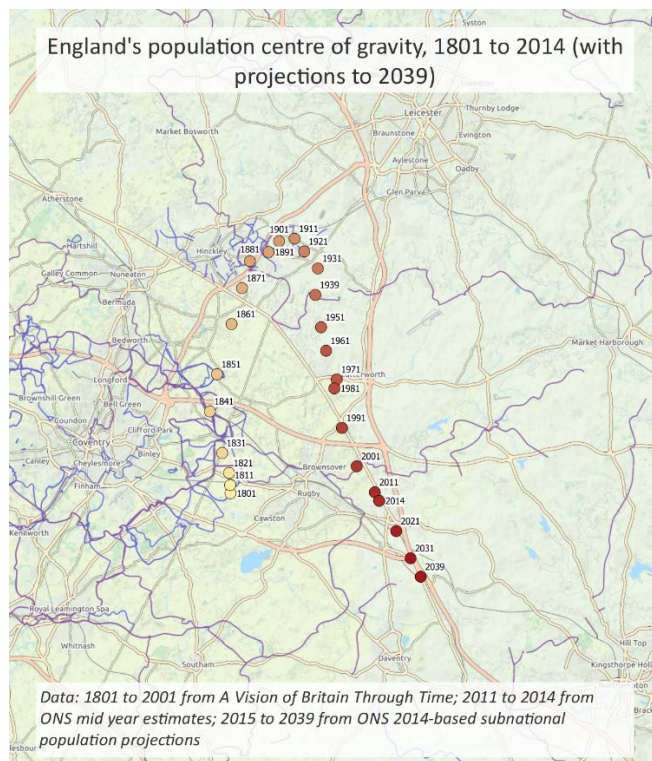
But this was not always the case. The North after all was the heart of the Industrial Revolution. It was the area that witnessed the transformation of textile production, the introduction of steam railways, and significant innovation in coal and iron production. In the Industrial Revolution era literacy rates in the north exceeded those of the south, technological advance was more rapid, wage rates in the north exceeded those in most of the south, and there was steady migration into the north (though life expectancy in the northern industrial cities was lower than in the more rural south). Figure 1, for example, shows that the population centroid of England reached its furthest north point only in 1911.

**Table 1: North and Wales versus South, 2012-2016**

Region	Gross Value Added per person, 2015	Life Expectancy at Birth, males 2012-14	Oxbridge Offers per 1,000 aged 16-17, 2013	Average House Value, 2015	Share Public Sector Employment, 2016 (%)
North	£20,821	78.2	2.6	£134,981	18.6
Wales	£18,002	78.5		£145,293	20.8
South	£28,207	80.3	4.7	£247,697	15.5

Note: North defined as the traditional counties of Cheshire, Cumberland, Durham, Lancashire, Northumberland, Yorkshire, Westmorland.

**Figure 1: Population Center of England by Decade**



The poor performance of the north has traditionally been attributed to a dramatic decline in demand for the staple industries of the north in the early twentieth century, leading to a downward economic spiral in the region that disadvantaged people inhabiting the north and their descendants.<sup>1</sup> After WWI there was a significant negative demand shock in the major industries of the north occasioned by the emergence of international competitors, and the raising of trade barriers in the 1920s and 1930s. In cotton textiles, where more than half the output was exported before 1914, Japan emerged as a lower cost competitor. In shipbuilding, where British yards produced 60% of world output 1900-1914, there was a collapse of demand post war as a result of excess capacity, the decline of trade, as well as again, the emergence of lower cost competitors such as Sweden. The decline in shipbuilding also led to declines in demand for the other staple northern industries, steel, engineering, and coal.

The new growth industries of the economy in the 1920s and later, such as airplanes, automobiles, consumer durables, and financial services, were mainly located in the south. Economies of scale and interlinkages gave the north a locational disadvantage in such industries that has persisted to this day. In the parlance of the new economic geography the north specialized in commodity production, while the south became the center for ideas and innovation, which in the modern world has much more growth potential.<sup>2</sup>

Whatever the source of these divergent locational fortunes the accident of birth in the north versus the south would thus profoundly influence people's current economic and social opportunities. It may be correct, for example, as Leunig and Swaffield (2008) argue, that ending restrictive land use policies in the south that drive up housing costs, could benefit people in the north by facilitating their relocation to the more prosperous south.

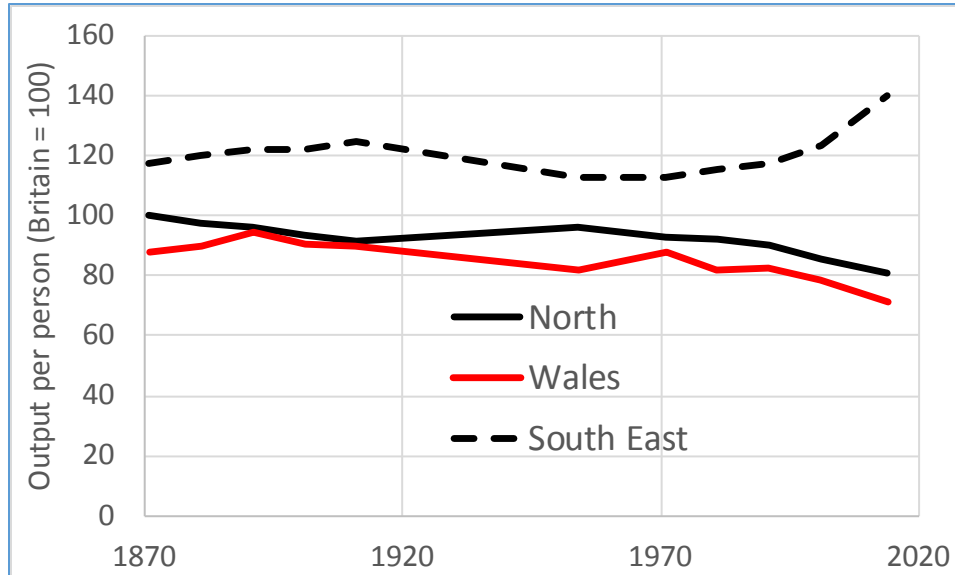
However, estimates of regional GDP per person from 1871 onwards by Nick Crafts do not reveal any sudden decline of the North in the 1920s. Indeed on these estimates the North and Wales were disadvantaged relative to the South East already in 1871 when the staple industries of the Industrial Revolution were still booming (see figure 2). That disadvantage increased in the years since 1990, but was of much longer origin. This first hypothesis is that the North was somehow blighted as a place to do business, damaging the prospects of the people born there. For shorthand we call this the "bad geography" hypothesis.

---

<sup>1</sup> See, for example, Massey, 1986.

<sup>2</sup> Martin et al., 2016, however, find little basis for such a specialization north and south 1981-2013.

**Figure 2: Output per person, North, Wales and South-East, 1871-2014**



Sources: Crafts, 2005, table 4, p. 59 (1871, 1881, 1891, 1901, 1911), table 6, p. 61 (1954, 1971, 1981, 1991, 2001). ONS, 2014. Geary and Stark, 2015, 2016 present alternative estimates. But these seem implausible based on the 2014 ONS benchmark.

The second possible source of the long run decline of the north is that there was a long standing pattern of migration out of the north of more talented and educated people. The staple industries of the north – textiles, coal, iron, and shipbuilding – were characterized by high demands for relatively unskilled labor. Thus the north retained its unskilled population, and attracted unskilled migrants, leading to a decline in the average skill and education level of the Northern population. Lower levels of output and attainment in the north may thus reflect mainly lower economic and social abilities among the resident Northern population.

Initial industrial location became a permanent disadvantage for the region as a result of selective migration flows. There may, however, be no economic cost to being born in the north now, and also no economic gains from encouraging migration to the south, or from schemes to regenerate the north. That is the higher rates of unemployment, lower life spans, and lower educational attainment may just reflect the lower inherent socio-economic status of the remaining northern population. This is the “bad people” hypothesis.

We test those two competing hypotheses using the fact that many surnames in England were regionally located in the 1837 when general registration of births, deaths and marriages began. There are many “northern” and many “southern” surnames. If the first hypothesis for the decline of the north is correct we will see a general decline in the status of these northern surnames accompanying the decline of the north. If the second hypothesis is correct, however, the decline of the north will not be associated with any general decline in the status of these surnames. Below we find the evidence is strongly in favor of the second hypothesis. The north declined mainly as a product of selective outmigration of talent from the region. However, interestingly, we find evidence that this outmigration of talent began even in the early nineteenth century. The seeds of later decline were planted at least from the beginning of the nineteenth century, and perhaps even earlier.

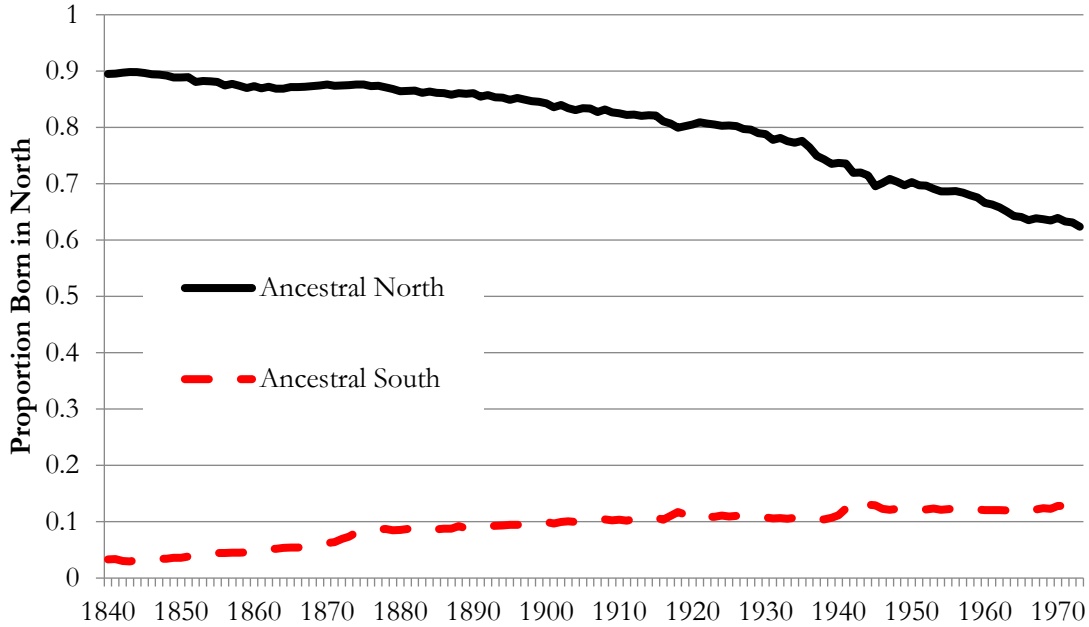
The outcomes of interest we observe are wealth at death for everyone in England dying 1892-1992 (from the probate records which we were able to digitize from image files), and educational attainment, 1800-2016, measured by enrollment rates at Oxford and Cambridge and numbers of MDs. The clear conclusion so far is that the decline of the north was mainly caused by the outmigration of talent from the region, and not by blight attached to the place itself.

### **Testing the Two Hypotheses**

We identify for the 1840s two sets of names from the records of all deaths in England 1837-1973 as revealed in the General Registry Office indexes of deaths which give name and registry district. First those where 80% or more of people dying with the name in the 1840s had deaths registered in the north of England, defined as Cheshire, Cumberland, Durham, Lancashire, Northumberland, Westmorland, and Yorkshire. Thus circa 1840 near 100% of *Ainscoughs*, *Birtwistles* and *Calderbanks* lived in the North.

Second a set of surnames where 10% or fewer of people holding the name were dying in the North or in Wales in the 1840s. Near 100% of *Northcotts* and *Vanstones*, for example, lived in the South. Figure 3 shows the proportion of people born with these surnames in the North of England 1840-1973. As late as 1973 still 62% of the ancestral northern surname holders were born in the north, and only 13% of ancestral southern surname holders were born there. So the surnames retain a very distinct regional presence, even though there is some convergence over time. In 1881 the total population with the northern names was 1.88

Figure 3: Location of Northern and Southern Names over Time



million, and for the southern 7.62 million. By 2002 the respective populations were 2.77 and 13.35 million.<sup>3</sup>

On the first “bad geography” hypothesis for the decline of the North the ancestral northern surnames should have lower status than the ancestral southern in recent years because more holders are located in the North. On the “bad people” hypothesis, there should be no difference in status between the ancestral northern and southern surnames in recent years. Also holders of ancestral northern surnames living in the south should be higher status than the other inhabitants of the South, and in particular higher status than the ancestral southern name holders in the south.

<sup>3</sup> This implies a much slower growth of the stock of people with northern names. We consider in the appendix what the reason for this difference is.

## **Are Northern Surnames lower status now?**

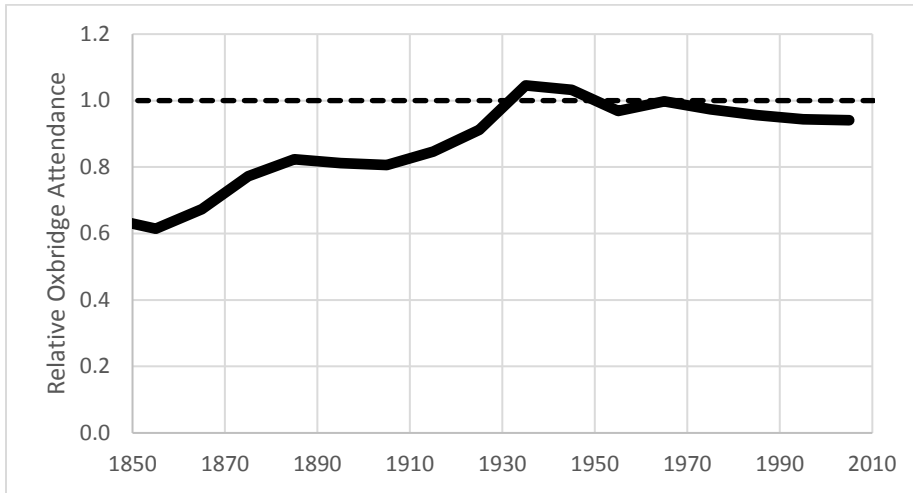
For the first test of the relative status nationally of northern and southern surnames we have a variety of outcomes we can use. These include attendance rates at Oxford and Cambridge, medical doctors per 1,000 of the surname, Members of Parliament per 1,000 of the surname, and average log probated wealth per adult death by surname type.

Figure 4 shows the relative rate of enrollment of people holding these surnames to Oxford and Cambridge by decade 1850-2009. As can be seen, despite the overall lower rate of admittance of people living in the north, shown in table 1, the rates of enrollment for ancestral northern rates actually rise over time in terms of relative representation at Oxbridge from the 1850s to the 1930s. From the 1930s to 2000s the ancestral northern surnames have very close to the same chance as the ancestral southern to enroll at Oxbridge. It seems that those with ancestral northern names who migrated outside the region must thus have a higher rate of enrollment at Oxbridge than average to counter the lower rate of admission of those who remained in the north revealed in table 1. It is interesting also that the period supposedly associated with the decline of the North is one where the descendants of northerners achieve full equality in Oxbridge admissions.

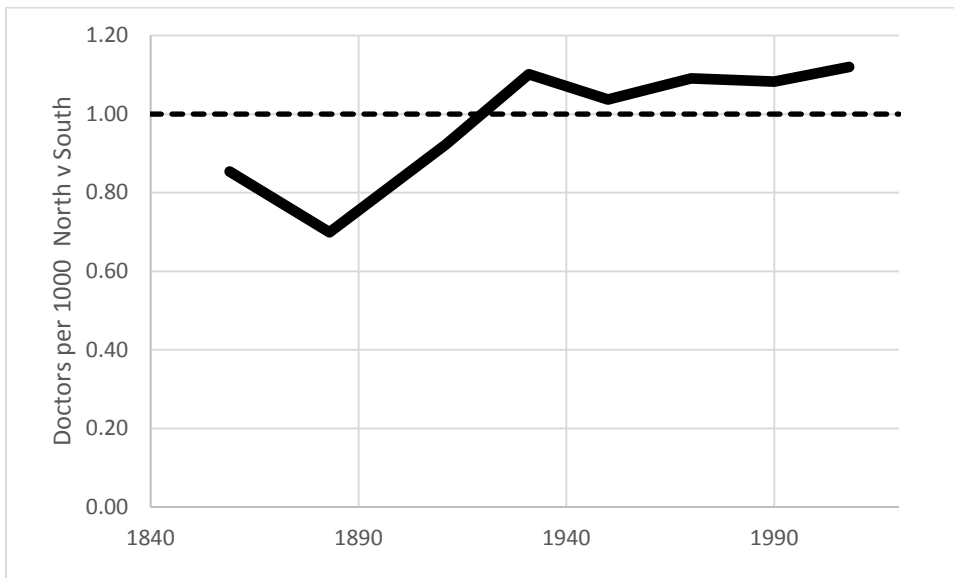
Figure 5 shows the number of doctors per 1,000 people holding northern versus southern surnames from the medical register 1859, 1883, 1911 and 1931. Also shown are the numbers of doctors currently registered by year of first registration for the periods 1940-59, 1960-79, 1980-99, and 2000-17 relative to the numbers of holders of northern and southern surnames in 2002. This shows a very similar pattern to that for Oxbridge. The numbers of doctors per person with each type of surname was in favor of southern surnames in the nineteenth century, when the north was economically vibrant, but the balance shifted modestly towards the northern surnames from 1931 on.

Figure 6 shows the relative representation of northern versus southern surnames in Parliament by decade 1800-2017, averaged across 20 year periods. Each MP is counted only on their first admission to Parliament. Here, despite the economic decline of the north, political achievement for ancestral northern surnames was greater than for ancestral southern surnames for all of the twentieth century. The northern Parliamentary constituencies, however, have tended to have less population than the southern constituencies because of faster population growth in the south between periodic revision of the constituency boundaries. This may account for some of the political success of northern origin surnames.

**Figure 4: Relative Oxbridge Admission Rate, Northern versus Southern Surnames**

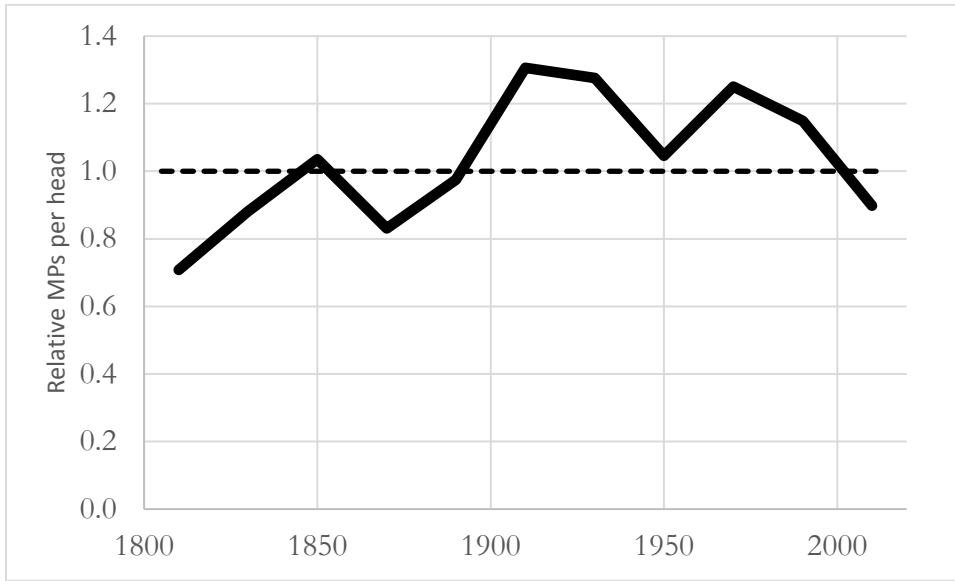


**Figure 5: Relative Representation among Medical Doctors, Northern versus Southern Surnames**





**Figure 6: Relative Representation in Parliament, Northern versus Southern Surnames**



**Figure 7: Relative Wealth at Death, North versus South and by Surname Type**

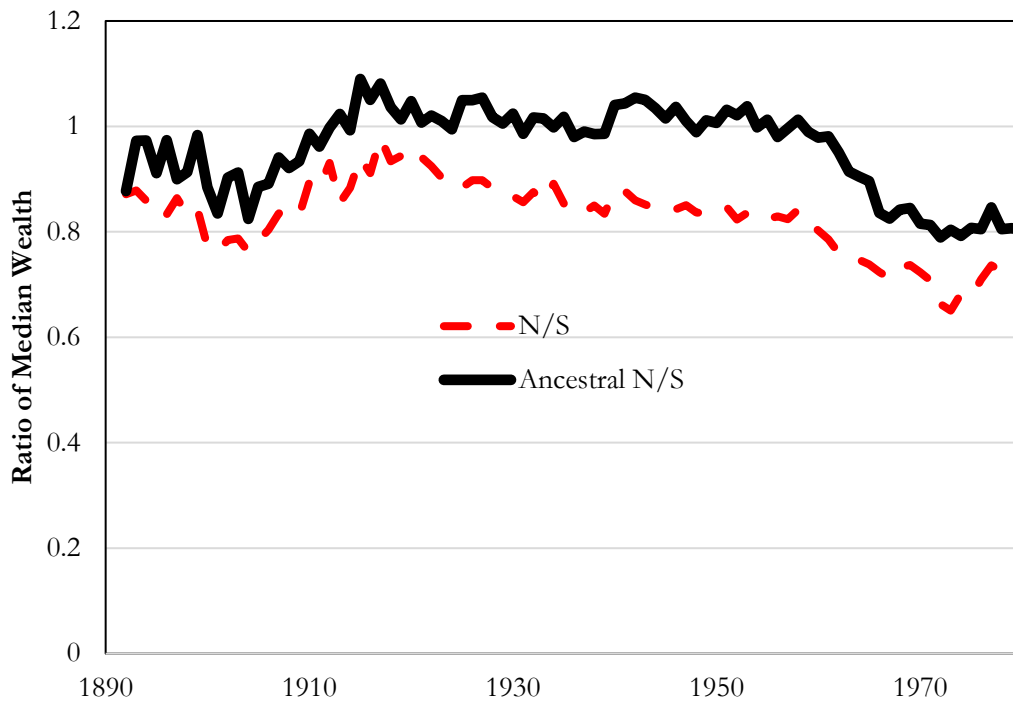


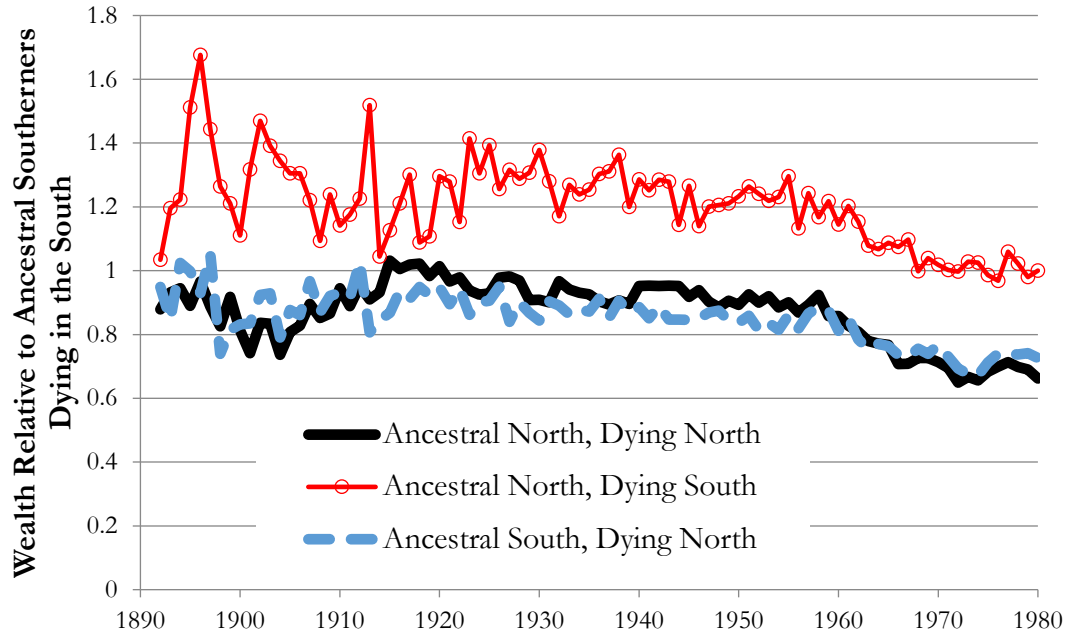
Figure 7 shows the median wealth of all people dying 1892 to 1980 and probated in the north of England relative to that of those dying in the south.<sup>4</sup> Median wealth is typically much lower for those dying in the north than for those dying in the south, in line with table 1, with an average 1892-1980 of 0.82. Also shown in figure 7 is the same measure for the median wealth of probated ancestral northern surnames compared to probated ancestral southern names. Here the average is 0.96. Overall median wealth of ancestral northern names is very close to that of southern names. Their wealth is always higher than for people in general living in the north. However, it is the case that from 1960-1980 ancestral northern surname wealth is significantly lower than ancestral southern surnames.

We can also identify ancestral northern and southern surnames by place of death, as is done in figure 8. The figure shows median wealth at death, relative to that of ancestral southern names dying in the south, of northern names dying in the north and south, and southern names dying in the north. There is clear evidence of selective migration from the north. The ancestral northern names in the south are wealthier than their native southern counterparts for most of the interval 1892-1980. But in the north the ancestral northern names have wealth lower than the native southern names in the south. However, migration from south to north seems to have been negatively selective. Ancestral southern names in the north have lower wealth than their counterparts dying in the south. In particular their wealth is no higher than the negatively selected northern surname population in the north. So these southern migrants to the north must also be negatively selected from the southern population.

---

<sup>4</sup> Median wealth is used because the wealth distribution is highly skewed.

Figure 8: Relative Wealth at Death, North versus South and by Surname Type and Location



## Individual Results

We have constructed a genealogical database of 78,000 individuals linked into rare surname family lineages for people born 1750-2006. Most of these people were born in England. We thus divide them into two groups: those born in the “north” defined here as the north of England in addition to Wales, and those born in the South, being the rest of England.<sup>5</sup> This database was designed to estimate rates of social mobility, so it oversamples the upper and lower status groups: 45% of the people are from rich lineages, 25% average, and 30% poor. The status of each surname lineage was determined by the average wealth at death of people in the lineage dying 1858-1887.

We can test, however, using this database whether the story above of selective outmigration from the North of the skilled holds true at the individual level. The database has three measures of social status: occupational status at age 40, ranked on a scale of 0-100, an indicator for attainment of higher education (0-1), and log wealth at death relative to average for the population in that decade.<sup>6</sup> The occupation and education outcomes refer just to men, while wealth is measured for both men and women. Here we look at five cohorts of people, representing roughly five generations. Those born 1780-1809, 1810-39, 1840-69, 1870-99, and 1900-29.

**Occupational Status.** Occupations are given in the censuses of 1841, 1851, 1861, 1871, 1881, 1891, 1901, and 1911 as well as the population register of 1939. There are also occupation statements in some marriage registers for both grooms and the fathers of the marriage parties, for fathers in birth registers, for the deceased in death registers, and also in some years for the deceased or for executors in probate records. We translated these various occupational statements into 242 occupational categories – carpenter, laborer, solicitor, dealer, stockbroker etc. We gave these occupations a social status score between 0 and 100. That score was created as an equally weighted factor of three elements: average normalized ln wealth at death by occupation, average fraction of people in each occupation with a university degree or equivalent, and average fraction of males in each occupation who were in school or in training when observed ages 11-20 in the censuses of 1811-1911, and the population register of 1939.<sup>7</sup> Illustrative occupational scores are shown in table 2.

---

<sup>5</sup> The South here includes the Channel Isles. The Isle of Man is not included in either region.

<sup>6</sup> This variable was labelled 1 if the person enrolled in a university or at a military college, was an attorney or doctor, or was a member of an engineering society.

<sup>7</sup> Each factor was standardized to the same standard deviation so that they played equal weight in the final occupational score.

**Table 3: Typical Occupation Scores**

---

Occupation	Score
Member of Parliament	100.0
Clergy-Church of England	95.1
Barrister	93.8
Army Colonel	51.5
Bank Clerk	29.8
Electrician	28.5
Butcher	20.4
Coal Miner	10.6
Refuse Collector	3.8

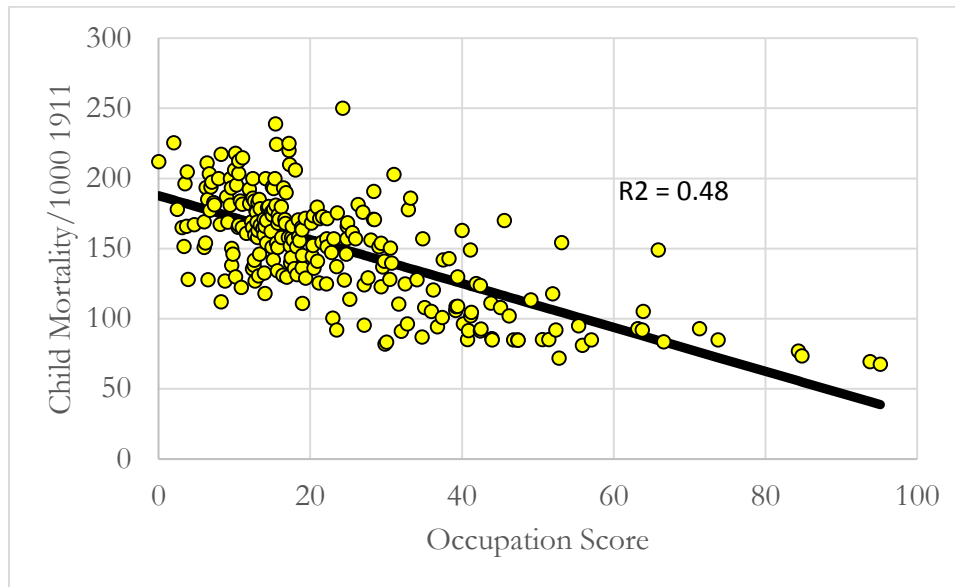
---

These occupational scores correlate well with another measure of social status in 1911, which is the mortality rate for children born to women aged under 45 years at the 1911 census by husband's occupation. This is shown in figure 9. Fitting just child mortality rates as a linear function of occupational score the  $R^2$  is 0.48.

**Higher Education.** This is an indicator variable equal to 1 (0 otherwise) if the person had a university education or ecclesiastical qualification, or was an attorney, doctor, chartered accountant, or member of an engineering society, or went to the military service academies such as Sandhurst.

**Wealth at Death.** Wealth at death comes from the Principle Probate Registry for all individuals for those dying 1858 and later. For those men dying 1825-1857 there is only a measure of wealth for those richer men probated in the Prerogatory Courts of the Archbishops of Canterbury and York. Since this censoring concerns just men of the first generation it will not create a problem for calculating the wealth correlations across generations. For the years 1858 there was a minimum wealth below which probate was not required. For these years we thus attribute to any individual not probated a wealth equal to half this minimum. This variable is normalized by estimated average wealth for all adults dying in each decade. Since the normalized variable is highly skewed we take the log of the resulting normalized measure.

**Figure 9: Occupation Scores and Child Mortality Rates 1911**



For this sample of surnames we can divide them into four groups based on average wealth at death 1858-1887: highest wealth (104 surnames), high wealth (87 surnames), average wealth (70 surnames) and lowest wealth (155 surnames).

Was there a social and economic cost to being born in the North? Without controls for lineage status or individual family status, we see in table 3 that those born in the north both for 1780-1929 as a whole, and for the subperiods 1840-69, 1870-99, and 1900-29 have quantitatively and statistically significantly lower status on all three measures.<sup>8</sup> They have lower occupational status, where the average for the sample as a whole is around 30 on this scale. They have lower average log wealth, with an average wealth around 60% lower than in the South. While men in the sample in the South have on average probability of attaining some higher educational qualification of 12%, for those in the North this probability is 8%. Notice, surprisingly, that this disadvantage in occupation, wealth and education is almost as strong for those born 1840-69, at the height of the Industrial Revolution as for 1900-29 when the decline of the North supposedly began.

---

<sup>8</sup> These estimates are not shown for the subperiods of births 1780-1809 and 1810-39 since for these periods we have very few fathers with the required status information, and then mostly for upper class families.

**Table 3: The Costs of Being Born in the North, 1780-1929**

Birth Period	Occupational Status	Occupational Status (family controls)	Ln Wealth at death	Ln Wealth (family controls)	Higher Education	Higher Education (family controls)
All	-4.00** (.72)	-0.32 (.50)	-.463** (.06)	-.029 (.05)	-.0386** (.0061)	-.0083 (.0071)
1900-29	-5.11** (1.02)	-1.30 (.84)	-.462** (.080)	-.118 (.079)	-.0459** (.0075)	-.0234* (.0104)
1870-99	-3.57** (.96)	-1.02 (.72)	-.520** (.095)	-.189* (.083)	-.0258* (.0106)	.0033 (.0108)
1840-69	-3.87* (1.70)	1.09 (1.14)	-.408** (.151)	.002 (.124)	-.0344* (.0164)	-.0040 (.0166)

Note: For the uncontrolled outcomes the sample sizes are 6,449, 9,921, and 8,505 respectively. For the sample with controls the sizes are 5,222, 8,065 and 6,777 respectively. Sample sizes are larger for wealth as an outcome since this includes women. Standard errors in parentheses. \*\*1% significance, \*5% significance.

However, if we estimate the average outcome for the North and South, but control for the lineage status of the family (highest wealth, high wealth or no wealth), and for the occupational status, wealth and education of fathers then the disadvantages of birth in the North largely disappear. Controlling for background there is no significant disadvantage in occupation, wealth or education from being born in the North. The coefficients are still negative for the North, but of very small magnitude. Northerners have poorer outcomes because their family backgrounds are poorer, not because of the location of their birth. This is consistent with the idea that the problem of the North is the people, not the place. However it may be that we are over-controlling. If the North offers poorer opportunities, then this may be already incorporated in the parents. Tables 4-9, however, show that there is clear evidence of selective outmigration from the North which would explain why outcomes for the parents in the North were poorer than in the South.

**Table 4: Social Status of Stayers and Movers, born 1780-1929**

<b>Birth-Death Location</b>	<b>Occupational Status</b>	<b>Ln Wealth at death</b>	<b>Higher Education</b>
North-North	-8.04** (.88)	-.812** (.081)	-.087** (.011)
North-South	10.77** (1.53)	.599** (.128)	.075** (.017)
North-Abroad	-0.96 (3.04)	-	0.006 (.036)
South-North	-4.65** (1.50)	-.529** (.134)	-0.025 (.018)
South-Abroad	6.12** (1.53)	-	0.017 (.016)
Mean for sample	30.1	-1.23	0.101
N	6,449	9,921	8,505

Note: In all cases the south-south group is the reference. No Controls. Standard errors in parentheses. \*\*1% significance, \*5% significance.

First tables 4-5 show outcomes, uncontrolled, as a function of place of birth and death. The outcomes here are occupational status, ln wealth at death, an indicator for higher education, an indicator for working when observed in a census aged 11-20, and adult age at death (21+). The omitted category is people born in the south and dying in the south. The five other groups are then born north-died north, north-south, north-abroad, south-north and south-abroad. As can be seen, there is evidence of strong selective movement of people. The outcomes for those moving to the south are substantially better than for those staying in the north in all five categories. Also those moving north to south have better occupational status, greater wealth, more education attainment, and less chance of being at work 11-20 than those born in the south and dying there. In contrast those moving from south to north were of lower occupational status and lower wealth than those staying in the south.



**Table 5: Social Status of Stayers and Movers, born 1780-1929**

<b>Birth-Death Location</b>	<b>Age at Death (21+)</b>	<b>Working Aged 11-20</b>
North-North	-2.94** (.46)	0.069** (.019)
North-South	-0.03 (0.73)	-0.167** (.034)
North-Abroad	0.00 (1.60)	-0.068 (.071)
South-North	0.02 (0.55)	0.027 (.023)
South-Abroad	-2.79** (0.76)	-0.047 (.033)
Mean for sample		
N	14,308	4,548

Note: In all cases the south-south group is the reference. No Controls. Standard errors in parentheses. \*\*1% significance, \*5% significance.

**Table 6: Divisions of the Lineage Sample, births 1780-1829 (%)**

<b>Share of Sample Birth-Death</b>	<b>Wealthy Lineages</b>	<b>Average Lineages</b>	<b>Poor Lineages</b>
North-North	3.7	4.2	4.0
North-South	2.4	0.9	1.0
North-Abroad	0.5	0.3	0.4
South-North	1.6	1.1	1.3
South-South	33.3	18.0	22.5
South-Abroad	3.0	0.6	1.4
All	44.5	25.1	30.4

These effects are in part driven by the different migration behavior of different social groups. The wealthy lineages in particular are more mobile, and more likely to move from North to South. Table 6 thus shows the composition of the sample, in the form of the percentage falling in each birth location-death location cell.

As noted the wealthy lineages are heavily overrepresented in this sample. Within these lineages there is substantial net outmigration from the North. 40% of those born in the North leave. There is some inflow from the South, but in each generation the net movement of those in the wealthy lineages was southward. In contrast for the average and poor lineages the net movement was towards the North. Assuming the same net fertility across these social groups, the relative stock of the rich versus the rest of the population was declining by about one fifth in each generation in the North. In contrast in the south, aided by in-migration from the North, the rich and the other social groups had no change in relative size across generations.<sup>9</sup>

The high status of migrants to the south, and the low status of those moving north was not, however, created only by more movement south of higher status social groups. Even within the lineages there was a tendency for children of higher status to be more likely to exit the north. Thus even when we control for lineage status (with indicators for very wealthy, wealthy and poor lineages), as is done in tables 7 and 8, movers north to south were typically of higher social status than stayers in the south, while movers south to north tended to be somewhat lower status than stayers in the south.

Further, there is evidence of this adverse selection against the north in movement all the way back to the heart of the Industrial Revolution. Figure 10 shows, for example, occupational status relative to those born in the south and dying in the south for those in the north-north, north-south and south-north birth and death cells, by birth generation, controlling for lineage status. The negative selection effect for those staying in the north is even more pronounced in earlier generations, starting with those born 1780-1809, than in later ones. For those moving South to North there is modest negative selection, but again getting weaker over time. Attainment of higher educational qualifications follows a very similar pattern over time, controlling again for lineage, as shown by figure 11. Educated people were leaving the North.

---

<sup>9</sup> The wealthy in the south had a much greater propensity to migrate abroad than the other groups, cancelling out the population gains from movement south of the wealthy within England.

**Table 7: Social Status of Stayers and Movers, controlling for lineage, 1780-1929**

<b>Birth-Death</b>	<b>Occupational Status</b>	<b>Ln Wealth at death</b>	<b>Higher Education</b>
North-North	-4.85** (.74)	-0.459** (.074)	-0.051** (.010)
North-South	7.18** (1.29)	0.358** (.116)	0.050** (.016)
North-Abroad	0.00 (2.57)	-	0.012 (.034)
South-North	-2.31 (1.26)	-0.400** (.121)	-0.008 (.017)
South-Abroad	2.42 (1.29)	-	-0.011 (.016)
Mean for sample	30.1	-1.23	0.101
N	6,449	9,921	8,505

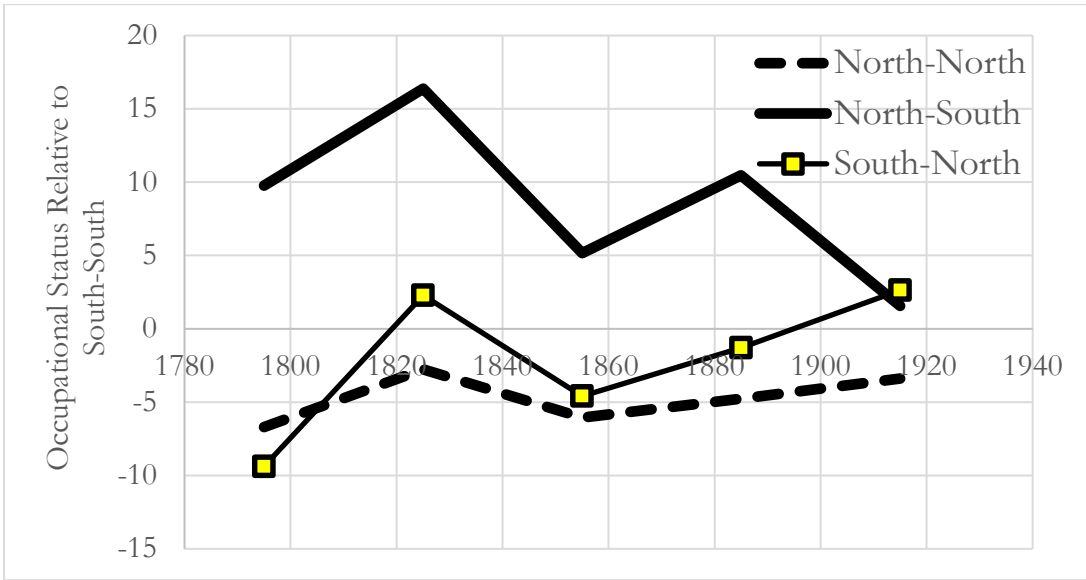
Note: In all cases the south-south group is the reference. Controlling for lineage. Standard errors in parentheses. \*\*1% significance, \*5% significance.

**Table 8: Social Status of Stayers and Movers, controlling for lineage, 1780-1929**

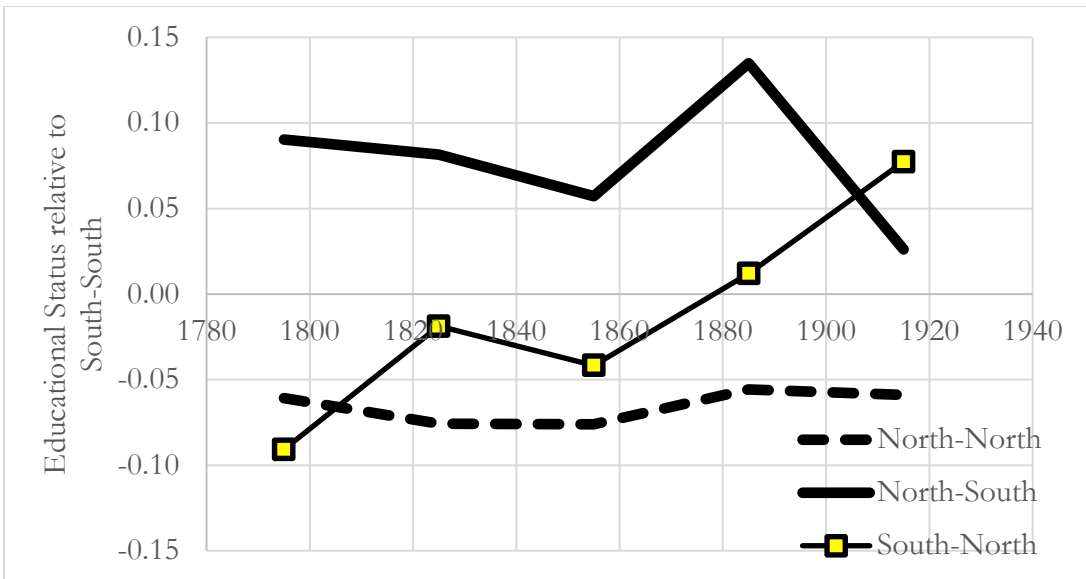
<b>Birth-Death Location</b>	<b>Age at Death (21+)</b>	<b>Working Aged 11-20</b>
North-North	-2.80** (.46)	0.028 (.018)
North-South	-0.10 (0.73)	-0.135** (.033)
North-Abroad	0.00 (1.60)	-0.055 (.068)
South-North	0.06 (0.55)	-0.004 (.022)
South-Abroad	-2.95** (0.76)	-0.032 (.032)
Mean for sample		
N	14,308	4,548

Note: In all cases the south-south group is the reference. Controlling for lineage. Standard errors in parentheses. \*\*1% significance, \*5% significance.

**Figure 10: Occupational Status by Generation and Birth-Death Location**



**Figure 11: Higher Education Status by Generation and Birth-Death Location**



We can go a step further and control also for the social status of fathers – occupation, wealth and education. Controlling for individual family status, what are the characteristics of movers versus stayers in the North of England? Table 9 shows these results for occupational status, wealth and education. The same basic effect appears where north-south movers have higher status relative to their fathers than south-south stayers, and north-north stayers have lower status. For the individual coefficients in the case of wealth this effect is no longer statistically significant. But the difference in status between movers and stayers in the North is always statistically significant even controlling for father characteristics. If one son moved south and another stayed in the north, the mover had higher occupational status, wealth and educational attainment.

Selective migration is much stronger for the upper social groups. Thus if we look at characteristics by birth and death location for just the average and the poor lineages we see the same patterns as for the data overall, but with much more muted effects. Table 10 shows these results. Migrants to the south were significantly higher in occupation status and educational attainment than the south-south population. For wealth they are estimated as being wealthier, but the effect is not statistically significant.<sup>10</sup> The north-north population is estimated on all three attributes as being lower status than south-south – but with no statistically significant coefficients. For the population moving from south to north there is no sign of negative selection as with the higher status lineages.

Confirmation of positive selection towards movement south by higher status families in the north can be found in the aggregate surname record. Figure 12 shows the proportion of births in the north by year from 1840 to 1973 for sets of ancestral northern surnames, where there were at least 100 births 1838-1859, relative to the proportion 1840-49. The first group are names where there were the most persons of this name at Oxford and Cambridge 1830-1859, by implication the most elite surnames. The second group was that where there was no one with the surname at Oxford or Cambridge. The third group was all the intermediate surnames from the North. The higher status surnames diffuse more rapidly to the South of England than do the low status surnames.

---

<sup>10</sup> The migrants south are, however, significantly higher in wealth than the stayers in the north.

**Table 9: Social Status of Stayers and Movers, controlling also for status of fathers, 1780-1929**

<b>Birth-Death Location</b>	<b>Occupational Status</b>	<b>Ln Wealth at death</b>	<b>Higher Education</b>
North-North	-1.46* (.62)	-0.104 (.069)	-0.016 (.011)
North-South	3.70** (1.06)	0.185 (.111)	0.040* (.017)
North-Abroad	2.96 (2.69)	-	0.040 (.043)
South-North	-0.11 (1.04)	-0.189 (.114)	0.019 (.017)
South-Abroad	-1.20 (1.17)	-	-0.27 (.017)
Mean for sample	29.8	-1.31	0.116
N	5,222	8,065	6,777

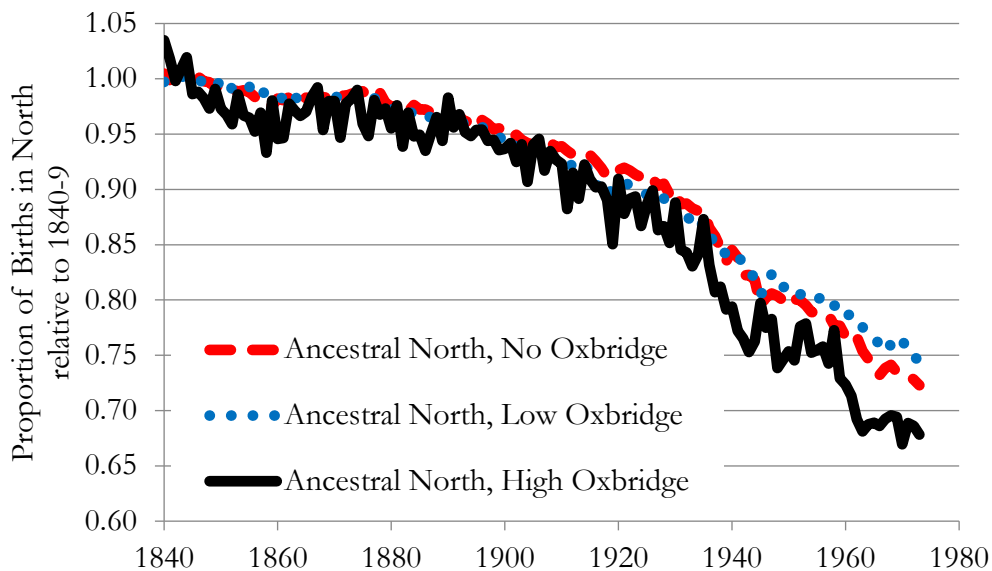
Note: In all cases the south-south group is the reference. This estimation controls for the social status of the parents. Standard errors in parentheses. \*\*1% significance, \*5% significance.

**Table 10: Social Status of Stayers and Movers, born 1780-1929, Average and Poor Lineages**

Birth-Death Location	Occupational Status	Ln Wealth at death	Higher Education
North-North	-0.43 (.61)	-0.133 (.076)	-0.004 (.006)
North-South	5.34** (1.24)	0.207 (.150)	0.030** (.012)
North-Abroad	-1.52 (3.00)	-	-0.017 (.029)
South-North	2.03 (1.08)	-0.220 (.134)	0.012 (.010)
South-Abroad	0.40 (1.52)	-	0.024 (.014)
Mean for sample	20.0	-2.25	0.015
N	3,073	4,389	3,189

Note: In all cases the south-south group is the reference. This estimation controls for the lineage status (average or poor). Standard errors in parentheses. \*\*1% significance, \*5% significance.

**Figure 12: Proportion Births in the North 1840-1973, by surname status 1840-59.**





## Conclusion

The poorer economic and social outcomes in the north of England have two possible sources. The first source is negative economic shocks in the early twentieth century that blighted the traditional industries of the north, and disadvantaged thereafter those born in the north in terms of employment opportunities, education and health. The second source is the selective outmigration of those with greater social status from the north to the south. In this paper we present good evidence in favor of the second interpretation, both using surname evidence and data on individual families.

Holders of surnames concentrated in the north in the 1840s were not disadvantaged in recent years in terms of education, occupation, political power, or wealth compared to the holders of surnames concentrated in the south in the 1840s. Since they are even now disproportionately located in the north any geographic disadvantage of that area would have reduced their social status. Further holders of northern surnames dying in the south were wealthier than holders of southern surnames dying in the south. And in sign that migration to the north was of less advantaged southerners, holders of southern surnames dying in the north were no richer than northern surname holders dying in the north. These northern surnames dying in the north were an adversely selected group, so the southern migrants must also be adversely selected.

These surname results are confirmed from a genealogical study of 78,000 people in England and Wales born 1780-1929. Those moving from the north, even those born in the period 1840-1869, were of higher social status than those staying in the north, and also of higher status than those residing in the south. In addition migrants to the north from the south were typically of lower social status. Controlling for lineage and parent status there is no significant cost to being born in the north versus the south.

What is not explained is why there was this selective migration of the skilled out of the north. One cause may be the nature of Industrial Revolution production technologies. The staple industries of the Industrial Revolution in the north – textiles, coal mining, railways, iron and steel, shipbuilding, engineering – were characterized by heavy demands for relatively unskilled labor, and limited demands for skilled and educated labor.

The policy implications of this finding is that outcomes for the northern English population would not be significantly improved by moving more of the population to the south. The implication is also that there is no geographic disadvantage that the north faces. So regional policies designed to compensate for any such perceived disadvantage are misplaced.

## References

- Crafts, Nicholas F. R. 2005. 'Regional GDP in Britain, 1871–1911: some estimates', *Scottish Journal of Political Economy*, 52: 54–64.
- Geary, Frank and Tom Stark. 2015. "Regional GDP in the UK, 1861–1911: new estimates." *Economic History Review*, 68: 123–144.
- Geary, F. and Stark, T. 2016, "What happened to regional inequality in Britain in the twentieth century?" *Economic History Review*, 69.
- Leunig, Tim and James Swaffield. 2008. *Cities Unlimited: Making Urban Regeneration Work*. Policy Exchange, London.
- Lorenz, Edward H. 1991. "An Evolutionary Explanation for Competitive Decline: The British Shipbuilding Industry, 1890-1970." *Journal of Economic History*, 51(4): 911-935.
- Martin, Ron. 1988 "The political economy of Britain's North-South divide." *Transactions of the Institute of British Geographers*, 13: 389-418.
- Martin, Ron, Peter Sunley, Peter Tyler and Ben Gardiner. 2016. "Divergent cities in post-industrial Britain." *Cambridge Journal of Regions, Economy and Society* 9: 269–299.
- Massey, D. 1986. 'The legacy lingers on: the impact of Britain's international role on its internal geography', in Martin, R. L. and Rowthorn, R. E. (eds) *The geography of de-industrialisation* (Macmillan, London) ch. 2
- Massey, D. 1987. 'Geography matters', *Geographical Review* 1(1): 2-9.
- Rubinstein, William D. 1977. 'The Victorian middle classes: wealth, occupation and geography', *Economic History Review* 30(4): 602-23.
- Anthony Slaven. 2013. *British Shipbuilding, 1500-2010: A History*. Lancaster: Crucible Books.
- Southall, Humphrey R. 1988. "The origins of the depressed areas: unemployment, growth and regional structure in Britain before 1914." *Economic History Review* 41(2): 236-258.
- von Tunzelman, N. (1981) 'Britain 1900-45: a survey', in Roderick Floud and D. McCloskey, (eds) *The economic history of Britain since 1500, vol 2* (Cambridge, Cambridge University Press) ch.1.
- Wolcott, Susan. 1993. "Keynes Versus Churchill: Revaluation and British Unemployment in the 1920s." *Journal of Economic History*, 53(3): 601-628.