

Population Growth and the Increase of Socio-Economic Inequality in Britain.

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Abstract

Thomas Piketty has traced historical patterns of socio-economic status, including a significant rise in inequality in Britain since the 1980s. He has attributed these changes mainly to economic factors, but the present paper presents evidence to show that demographic forces have had an independent influence on patterns of inequality. It is argued that population growth historically brought about an increase in inequality in Britain through the creation of labour surpluses. Additionally, the paper presents evidence to show that falling mortality in China led to a rapid increase in its population after the middle of the twentieth century, resulting in the creation of a large amount of cheap labour. This has enabled it to export manufactured goods on major scale, resulting in the erosion of the manufacturing base of Britain's economy, leading to significant regional socio-economic inequalities.

Keywords

Population, mortality, surplus labour, Britain, history, regional inequality, China, manufacturing activity.

Introduction

In his study of income and wealth inequalities, Thomas Piketty has written that:

For far too long economists have sought to define themselves in terms of their supposedly scientific method. In fact, those methods rely on an immoderate use of mathematical methods ... the new methods often lead to a neglect of history and of the fact that historical experience remains our principle source of knowledge. (Piketty 2014: 574-575)

Piketty has quoted historical evidence for England, including the structure of income and wealth in the early nineteenth century through the works of Jane Austen. This paper seeks to place the debate about socio-economic inequality in a broader historical context, in part by examining the relationship between population and socio-economic status in England & Wales from the sixteenth century onwards, as well as analysing the impact of global population growth on current patterns of inequality.

Malthus was one of the first to recognise the role of surplus labour in the growth of inequality, concluding that at the beginning of the nineteenth century 'farmers and capitalists are growing rich from the real cheapness of labour'. (Malthus 1989, Volume 1: 28). This

directly links the incomes of the poor with the wealth of the rich, and I will examine accounts of the lives of the poor to provide a counterpoint to Austen's descriptions of the lives of the wealthy.

Malthus has been the most important influence on thinking about the relationship between demographic and economic development. In his theoretical work, he emphasized the impact of economic factors on fertility and population levels, through shifts in the incidence of marriage. (Malthus 1989, Volume 1: 15, 92, 192, 193) He had been influenced by Adam Smith, who had argued that 'the demand for men, like that for any other commodity, necessarily regulates the production of men; quickens it when it goes on too slowly, and stops it when it advances too fast.' (Smith 1976, Volume 1: 98) Malthus's work in turn influenced Ricardo, Marx, Marshall and other classical economists, who all assumed the primacy of economics over demography. The exception was Keynes, who accepted that population affected levels of aggregate demand – he was a strong admirer of Malthus – but had little or nothing to say about the impact of population growth on the supply side, in particular the supply of labour. (Keynes 2010 and 2012).

Although Malthus's theory of population stressed the economic basis of marriage and fertility – a growth in income leading to earlier marriage and a rise in fertility – in his account of England's experience he reversed his analysis. He concluded that mortality associated with the disease environment was the key driver of population growth, (Malthus 1803: 311) and that

... the gradual diminution and almost total extinction of the plagues which so frequently visited Europe, in the seventeenth and the beginning of the eighteenth centuries, produced a change [in the incidence of marriage] ... in this country [England] it is not to be doubted that the proportion of marriages has become smaller since the improvement of our towns, the less frequent return of epidemics, and the adoption of habits of greater cleanliness. (Malthus 1989, Volume 2: 198).

Malthus in his empirical writings gave a sociological rather than an economic analysis of marriage: 'It is not ... among the higher ranks of society, that we have most reason to apprehend the too great frequency of marriage ... [it is] squalid poverty ... [which] prompt universally to early marriage ...' (1989, Volume 1: 439, Vol. 2: 114, 150).

Population change and economic inequality

The relationship between demographic and economic development was explored by H.J. Habakkuk who put forward a general thesis on the relationship between population and economic history in England before the nineteenth century. He presented a 'heroically simplified version of English history', which ran as follows

... long-term movements in prices, in income distribution, in investment, in real wages, and in migration are dominated by changes in the growth of population. Rising population: rising prices, rising agricultural profits, low real incomes for the mass of

the population, unfavourable terms of trade for industry – with variations depending on changes in social institutions, this might stand for a description of the thirteenth century, the sixteenth century and the early seventeenth, and the period 1750-1815. Falling or stationary population with depressed agricultural profits but higher mass incomes might be said to be characteristic of the intervening periods. (Habakkuk 1965: 148)

This argument assumes that population change was largely independent of economic development, an assumption confirmed by research which has established that population growth was mainly the consequence of reductions in mortality resulting from changes in the disease environment. (Razzell 1993; Razzell 2016). This in effect establishes population as an exogenous variable in economic growth, contrary to the assumptions made by classical economists and the majority of economic theorists.

It is not possible to test Habakkuk's thesis in any detail because there is no consensus on economic trends and changes in the economy during the early modern period. For example, there is a fundamental disagreement between Gregory Clark on the one hand, and Stephen Broadberry and colleagues on the other about long-term economic growth in England in the period between the fifteenth and early the nineteenth century. The former concluded that there were no significant change in per capita incomes between the fifteenth and eighteenth centuries, whereas Broadberry et.al. have argued that GDP per head approximately doubled in the same period. (Clark 2007; Broadberry et.al. 2015) The different conclusions are the result of disagreements on estimates of population, employment and occupational levels. The problem is that there is no reliable national evidence to evaluate competing ideas, and attempts to resolve these difficulties have led to the use of mathematical models which necessarily require a range of arbitrary assumptions. The lack of reliable national evidence has bedevilled the long standard of living debate, which is unlikely to ever be resolved by econometric data.

There is however local statistical and literary evidence for specific periods that can be used for an evaluation of Habakkuk's thesis and illuminate the relationship between population change and socio-economic inequality. The second half of the sixteenth century was a period of rapid population growth and an increase in prices. Population grew by over 30 per cent in the period 1570-1609 and prices more than doubled between 1550 and 1600. (Wrigley and Schofield 1981; Mitchell and Deane 1971: 484-486; Thirsk 1967: 857, 858, 1861; Phelps-Brown and Hopkins 1962, Volume 2: 193-195). Lawrence Stone noted the changes that had taken place in English society during the sixteenth century as a result of population growth: 'the excess supply of labour relative to demand not only increased unemployment, but forced down real wages to an alarming degree ... [there was] a polarisation of society into rich and poor: the upper classes became relatively more numerous and their real incomes rose; the poor also became more numerous and their real incomes fell.' (Stone 1966: 26-29, 49)

Recent research by Alexandra Shepard using church court depositions indicates that wealth inequality increased markedly during the sixteenth century. In the mid-sixteenth century the mean evaluation of wealth of yeoman was £9.88; by the second quarter of the seventeenth century it had risen to £143.06. By contrast labourers' average wealth rose from

£2.03 to £4.75, and allowing for inflation, the real wealth of labourers diminished during this period. (Shepard 2015: 68-72)

Population growth and the life of the poor in the eighteenth and nineteenth centuries.

After a period of stagnation in the second half of the seventeenth and first half of the eighteenth century, population began to grow after the middle of the eighteenth century, accelerating rapidly at the end of the eighteenth and beginning of the nineteenth century. (Wrigley and Schofield 1981; Razzell 2017) There is no current consensus on the changing pattern of real income and economic inequality during the seventeenth and eighteenth centuries. (Humphries 2013: 693-714; Lindert 2000) However, there is evidence from contemporary witnesses on the lives of the poor to suggest that the labourers became increasingly pauperized in the late eighteenth century. (Snell 1985: 25, 26) Admiral Horatio Nelson in a letter to the Duke of Clarence in 1790 described the condition of the poor in Norfolk as follows:

That the poor labourer should have been seduced by promises and hopes of better times, your Royal Highness will not wonder at, when I assure you, that they are really in want of everything to make life comfortable. Hunger is a sharp thorn, and they are not only in want of food sufficient, but of clothes and firing. (Nicolas 1845: 295)

Nelson also claimed that labourers could not afford candles, soap or shoes, and for ‘drink nothing but water, for beer our poor labourers never taste.’ (Coleman 2001: 101; Nicolas 1845: 297)

One of the most detailed accounts was provided by the Reverend John Howlett, who had been the Vicar of Great Dunmow in Essex for about 50 years. Describing the condition of labourers in his parish he wrote in 1796:

... for the last forty or fifty years, some peculiarly favoured spots excepted, their condition has been growing worse and worse, and is, at length, become truly deplorable. Those pale famished countenances, those tattered garments, and those naked shivering limbs, we so frequently behold, are striking testimonies of these melancholy truths. (Howlett 1796: 2)

He argued that these developments were the result of ‘the rapid increase of population on the one hand and from the introduction of machines and variety of inventions ... [which have led to] more hands than we are disposed or think it advantages to employ; and hence the price of work is become unequal to the wants of the workmen.’ (1796: 19) He compiled figures of income and expenditure, using details of wages from farmers’ wage books and local knowledge of family incomes and consumption, for the two ten-year periods, 1744-53 and 1778-87. The annual expenditure per family in the first period was £20.11s.2d and earnings £20.12.7d, leaving a surplus of 1s.5d. In the second period the figures were £31.3s.7d and £24.3.5d, leaving a deficit of £7.0s.2d. (1796: 19) Howlett concluded that

Of this deficiency the rates have supplied about forty shillings; the remaining £5 have sunk the labourers into a state of wretched and pitiable destitution. In the former period, the man, his wife, and children, were decently clothed and comfortably warmed and fed: now on the contrary, the father and mother are covered with rags; their children are running about, like little savages, without shoes or stockings to their feet; and, by day and night, they are forced to break down the hedges, lop the trees, and pilfer their fuel, or perish with cold. (1796: 49)¹

Although there is no reliable national statistical data to support the local evidence, there is some data for southern and western counties which indicates that there were sharp falls in the real incomes of poor men and women in the late eighteenth and early nineteenth century. Keith Snell has compiled figures of the annual wages of southern and western farm and domestic servants taken from poor law settlement examinations. These figures cover the whole period 1741-1840 and have the advantage of relying on direct witness statements. They focus on unmarried young men and women hired by the year, which conferred poor law settlement. They relate to employment for the whole year, and were paid at the end of the year, addressing the major difficulty of establishing changing unemployment levels. These categories of worker were boarded and lodged during the year, so in that sense were safeguarded from many of the effects of price fluctuations. Frequently their statements were checked by parish authorities, providing some independent surety for their reliability. There is some evidence from other sources which suggests that these trends proximate to weekly wage trends affecting other largely unskilled rural and market-town workers in these southern and western English counties. (Snell 1985: 23-28)

Table 1: Mean Real Wages (£) of Farm and Domestic Servants in Southern and Western Counties, 1741-1840. (Snell 1985: 29, 411-417; Phelps-Brown and Hopkins 1962)

Period	Mean Real Male Annual Wages (£)	Mean Real Female Annual Wages (£)
1741-50	7.398	4.802
1751-60	5.919	4.546
1761-70	7.994	4.532
1771-80	7.361	4.226
1781-90	7.751	4.007
1791-1800	6.614	3.541
1801-10	5.212	3.319
1811-20	4.9	3.574
1821-30	5.43	4.421
1831-40	4.828	4.086

¹For a similar account of the condition of labourers, see (Davies 1796: 7). Contemporaries were almost unanimous in depicting the plight of labourers and the poor in Southern and Midland counties in a similar vein to that described by Howlett. For a bibliography of these accounts see (Snell 1985: 25).

Male mean wages were more-or-less constant in the period between 1741 and 1790 but fell sharply in the period 1791-1840. Female real wages fell gradually from the 1740s onwards, with a slight recovery in the two decades between 1821 and 1840.

Real wages were higher in the North of England (Mitchell and Deane 1971: 346, 347) but there is some evidence that the pauperisation of the working class was not confined to the South of England. (Razzell and Wainwright 1973: xix-xxiv). Charles Shaw in his autobiography described the conditions of workers in the Staffordshire Potteries in the 1830s and 1840s:

All the great events of the town took place ... [in] the market place. During the severity of winter I have seen one of its sides nearly filled with stacked coals. The other side was stacked with loaves of bread, and such bread. I feel the taste of it even yet, as if made of ground straw, and alum, and Plaster of Paris. These things were stacked there by the parish authorities to relieve the destitution of the poor. Destitution, for the many, was a chronic condition in those days, but when winter came in with its stoppage of work, this destitution became acute, and special measures had to be taken to relieve it. The crowd in the market-place on such a day formed a ghastly sight. Pinched faces of men, with a stern, cold silence of manner. Moaning women, with crying children in their arms, loudly proclaiming their sufferings and wrongs. Men and women with loaves or coals, rapidly departing on all sides to carry some relief to their wretched homes – homes, well, called such ... This relief, wretched as it was, just kept back the latent desperation in the hearts of these people. (Shaw 1980: 42-43)

Underlying many of these conditions were the increasing employment of cheap labour. (Mayhew 1980) In 1809, the abolition of protective legislation had allowed the increasing employment of children and unskilled workers in the new factories. (Thompson 1980: 529) Over 80 per cent of the labour force in English and Scottish factories in 1833 was women and children, paid about a third of the wages of male workers. (Humphries 2010; Razzell 2016: 106).

Not all the worst conditions were found in the new factories, they were often found in small sweated workshops and among garret masters working from home, described by Mayhew in such detail. (Mayhew 1980, 6 Volumes) Many people were forced to work in these places because of a surplus of labour. One of Mayhew's informants told him:

The speculators find plenty of cheap labour among the country lads. A hand fresh up from the country can't get employment at the best shops, unless he's got some friends, and so, after walking all London, he is generally down to look for a job among the speculators at low wages. (1980, Volume 5: 108)

It was not just low wages, but a high incidence of unemployment that was the cause of much poverty. Mayhew stated that 'in the generality of trades the calculation is that one-third of the hands are fully employed, one third partially, and one-third unemployed throughout the year.'

(1980, Volume 2: 300) One boot-maker in Mayhew's survey directly linked demographic trends with its impact on aggregate demand and increasing poverty levels:

The cause of the trade being so overstocked with hands is, I believe, due in great measure to the increase in population. Every pair of feet there is born, certainly wants a pair of shoes; but unfortunately, as society is at present constituted, they cannot get them. The poor, you see sir, increase at a greater rate than the rich. (1980 Volume 3: 139)

A witness before the 1833 House of Commons Select Committee on the State of Agriculture stated that 'it is the surplus of labourers that are suffering, of which there are many in almost every parish, and these men are very badly off ... It used to be customary to have them [employed] for a whole year and employ them in the winter, but that is not the case now.' (Neuman 1982: 20) A detailed account of the life of agricultural labourers was provided by the Morning Chronicle Survey in the middle of the nineteenth century:

Their labour is at the command of anyone who bids for it; and as their employment is precarious, and their wages fluctuating, their lives are spent, in the majority of cases, in constant oscillation between their homes and the workhouse ... If the reader will accompany me, I shall lead him into a cabin constituting the abode of [the labourer] ... As you enter, a woman rises ... and has an infant in her arms, and three other children ... There are two boys who are out with their father at work ... the mother takes a pot from the fire, and pours out of it a large dish of a quantity of potatoes. This together with a little bread and some salt butter for the father and the two eldest boys, forms the entire repast. (Razzell and Wainwright 1973: 3-5)

The growth of capitalism

Many of the above developments were associated with the growth of capitalism, linked to the creation of labour surpluses resulting from population growth. (Whittle 2000; Shaw-Taylor 2012; Harley 2014; Razzell 2016: 99-108) The development of capitalism in the sixteenth century can be illustrated by the economic activities of Shakespeare and his father John Shakespeare. The latter had carried out extensive trading practices – the illegal sale of wool, lending of money and the hoarding of grain and other foodstuffs. (Razzell 1990: 16-20) His son William was associated with these activities, and in 1598 was prosecuted for the illegal storage of grain. This practice however was carried out by nearly all the wealthy men in Stratford, along with the four local magistrates who were meant to enforce the legislation against the forestalling and hoarding of grain. This was a time when about 40 per cent of Stratford's population were designated as poor. (1990, 141-143)

At the end of the eighteenth century Cobbett described the further development of capitalism, arguing that bankers and city merchants played a significant role in the consolidation of estates and farms:

The small gentry, to about the third rank upwards ... are all gone, nearly to a man, and the small farmers with them. The Barings [merchant bankers] alone have, I should think, swallowed up thirty or forty of these small gentry without perceiving it ... The Barings are adding field to field and tract to tract in Herefordshire; and as to the Ricardos, they seem to be animated with the same laudable spirit ... [acquiring a number of] estates ... (Cobbett 2001: 223)

He further described the way the gentry and aristocracy employed urban stock brokers to speculate in stocks and shares, directly linking rural and urban capitalism (2001: 6, 115), which is confirmed by Stone's account of the economic activities of the aristocracy in the eighteenth and nineteenth centuries:

By 1750 there were few great landlords who did not have some money – often a great deal – in the public funds of the Bank of England. In this sense they were themselves becoming inextricably linked with the monied interest, and their mental attitudes to banking and stock speculation changed accordingly ... Others poured surplus cash into canal companies and turnpike trusts in the eighteenth century, and into railroad companies and dockyards in the nineteenth. From the early seventeenth century onward many were deeply involved in urban development of London. (Stone 1995: 189)

The poverty of workers in factories was directly linked to the increasing wealth of the factory owners, described by an anonymous cotton spinner in 1818 as follows:

... with very few exceptions, they [the employers] are a set of men who have sprung from the cotton-shop without education or address ... but to counterbalance that deficiency, they give you enough of appearances by an ostentatious display of elegant mansions, equipages, liveries, parks, hunters, hounds ... They bring up their families at the most costly schools ... and to support all this... their whole time is occupied in contriving how to get the greatest quantity of work turned off with the least expence ... the greater part of the master spinners are anxious to keep wages low ... for the purpose of taking the surplus to their own pockets. (Razzell 2007: 199, 200)

In England, the growth of capitalism was linked to economic development, and Harley has recently concluded that 'the emergence of Britain's modern growth depended more on a long history of capitalism than on the industrial revolution.' (Harley 2014: 492)

Global population growth and regional inequality in Britain

Piketty has provided convincing evidence that socio-economic inequality has grown significantly in Britain since the 1980s. (Piketty 2014: 316, 319, 323, 344) He has presented two main hypotheses to explain this trend: 1. The ability of owners and managers of large companies to set high incomes and bonuses for themselves, linked to the growth of

monopolistic global companies. 2. The greater increase of the returns from capital compared to the rate of growth in the overall economy. (2014: 24, 25)

Both these hypotheses are compatible with known trends in the economy, but fail to mention the influence of demographic factors on current levels of socio-economic inequality. The period since the 1970s is one of economic globalisation, and inequality has been significantly shaped by global demographic trends. As with the history of England & Wales, most world-wide population growth has resulted from reductions in mortality. This has been driven not by economic development but by the control of the disease environment, through applications of modern medicine and improvements in personal and public hygiene. (Preston 1975; Easterlin 1999; Cutler, Deaton and Llera-Muney 2006; Easterlin 2012; Razzell 2016: 120-122) This has occurred sometimes in very poor countries which have benefited from medical and other forms of aid. (Caldwell 1986) This has invariably happened during periods of high fertility as a part of the demographic transition (Harper 2016), and as in England & Wales led to rapid population growth and the creation of labour surpluses. (Razzell 2016)

The most important global demographic development was that which occurred in China. Its population grew rapidly after 1960, fuelled largely by increasing life expectancy.

Table 2: Life Expectancy and Population Growth in China, 1960-2015. (World Bank Data Online)

Year	Life Expectancy (Years)	Population Size
1960	43.8	667,070,000
1980	66.6	981,235,000
2015	76.1	1,379,000,000

Its real income per head was a fraction of that in the United Kingdom, even after a period of significant growth between 1970 and 2016.

Table 3: GNI per Capita (U.S.A. Dollars) in China and the United Kingdom, 1970 and 2016. (World Bank Data Online)

Year	China	United Kingdom
1970	120	2,430
2016	8,260	42,390

China's very large population and cheap labour allowed it to develop a highly competitive manufacturing export industry, gradually eroding the manufacturing industries of Britain, Europe and the United States. As Nicholas Comfort has concluded, 'Over the decades that followed [from 1989 onwards] China, whose Communist Party had approved the opening up of the economy as far back as 1978, would embrace a rampant capitalism ... that would in turn generate an export-led boom giving it a near-stranglehold over the global economy.' (Comfort 2013: 170)

These developments in China and elsewhere in Asia have had a major impact on Britain's economy and society. Manufacturing as a proportion of all employment in the

United Kingdom fell from 22% in 1982 to 15% in 1992 and 8% in 2015. (Manufacturing Statistics 2015). Multinational companies have exploited labour surpluses for the maximisation of profit, transferring industrial production from developed to developing countries, with an increasing reliance on services in the developed world. The impact of these changes on the UK's economy has been summarized as follows:

In 1950, in the aftermath of the Second World War, the UK accounted for more than 10% of global exports, yet by 2009 that share had declined to just under 3%. The UK's manufacturing sector has shrunk by two-thirds in the three decades between 1980 and 2010. Whereas a million people made cars in the UK during the 1960s, but by 2009 that number was just 180,000 ... by the 1980s the cotton industry had vanished. In 1983 there were 170 working coal mines, but by 2009, there were 4. After World War 2, manufacturing accounted for almost 40% of UK's economy. Manufacturing is now just a tenth of the UK economy ... and the service industry is now 75.8%. (Taylor 2011)

These changes have had a major impact on patterns of socio-economic inequality. As the *Economist* has recently observed: 'When countries with lots of low-wage workers begin trading with richer economies, pay for similarly skilled workers converges. Those in poor countries grow richer while in richer countries workers get poorer.' (The *Economist* 21st October 2017: 20). This process has a particular impact on the different regions of the wealthier countries, creating poverty in the old industrial communities but increased wealth in regions specializing in services. An example of this is to be found in patterns of household expenditure and property prices in different regions in England & Wales.

Table 4: Regional Gross Disposable Household Income and Property Prices in England & Wales. (GovUk Online 2017)

Region	Manufacturing As A Proportion Of All Jobs, 1991	Manufacturing As A Proportion Of All Jobs, 2015	Gross Disposable Annual Income Per Head, 2014 (£)	Average House Price, March 2017 (£)
West Midlands	30%	11%	15,611	180,293
East Midlands	30%	12%	16,217	176,213
Yorkshire & Humber	25%	11%	15,498	149,606
North West	25%	9%	15,776	150,250
North East	24%	9%	15,189	122,298
Wales	23%	10%	15,302	147,746
East	22%	8%	18,897	277,127
South West	19%	8%	18,144	240,222
South East	17%	6%	20,434	311,514
London	11%	2%	23,607	471,742

Although not a perfect correlation, the northern regions with the greatest historical reductions in the amount of manufacturing industry have lower household incomes and property values than elsewhere. This is the reverse of the pattern in the nineteenth century, where incomes were higher in the industrial regions of the north of England. (Mitchell and Deane 1971: 346, 347)

The impact of the process of de-industrialization has been summarized by Aditya Chakraborty in 2011 as follows:

Before moving to Yale and becoming a bestselling historian, Paul Kennedy grew up on Tyneside in the 50s and 60s. "A world of great noise and much dirt," is how he remembers it, where the chief industry was building ships and his father and uncles were boilermakers in Wallsend. Last year the academic gave a lecture that reminisced a little about those days. "There was a deep satisfaction about making things," he said. "A deep satisfaction among all of those that had supplied the services, whether it was the local bankers with credit; whether it was the local design firms. When a ship was launched at [the Newcastle firm] Swan Hunter all the kids at the local school went to see the thing our fathers had put together ..."

Wandering around Wallsend a couple of weeks ago, I didn't spot any ships being launched, or even built. The giant yard Kennedy mentioned, Swan Hunter, shut a few years back, leaving acres of muddy wasteland that still haven't lured a buyer. You still find industrial estates, of course ... The biggest unit on one estate is a dry cleaner; on another, a warehouse for loft insulation dwarfs all else. At a rare actual manufacturing firm, the director, Tom Clark, takes me out to the edge of the Tyne, centre of the industrial excitement remembered by Kennedy. "Get past us and there's nothing actually being made for miles," he says, and points down the still waterfront.

At his firm, Pearson Engineering, Clark introduces me to a plater called Billy Day. Now 51, he began at the firm at 16. His 23-year-old son William is still out of work, despite applying to dozens of small factories. As the local industry's gone, so too have the apprenticeships and jobs. "No wonder you get young kids hanging out doing whatever," says Day. "We've lost a whole generation."

You can see similar estates and hear similar tales across the country, from the north-west down to the Midlands and the old industrial parts of suburban London. But it's in the north-east, the former home of coal, steel, ships and not a lot else, that you see this unyielding decline at its most concentrated. It's a process I've come to think of as the de-industrial revolution, in which previously productive regions and classes are cast adrift. (The *Guardian*: 15th November 2011)

These conditions have had political consequences, summarized by the *Economist* as follows: 'Votes for Brexit and for Mr Trump were often cast as an expression of anger at a system that seems rigged. Unless policymakers grapple seriously with the problem of regional inequality, the fury of those voters will only increase.' (The *Economist*, October 21st 2017: 24) These problems are unlikely to diminish in the short-run, but a part of the long-run solution will only occur if fertility in developing counties reduces to levels found currently in the

developed world. This is likely to happen according to demographic transition theory (Harper 2015), although this raises speculative issues beyond the scope of the present paper.

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