

TRADE AND INDUSTRY IN TUDOR AND STUART ENGLAND

Sybil M. Jack

HISTORICAL PROBLEMS



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Volume 5

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AND STUART ENGLAND



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*For my mother, Vera Edith Thorpe
and in memory of my father,
Laurence Henry Thorpe*



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INTRODUCTION



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The Problem of Growth in Sixteenth and Seventeenth Century English Society: the Overall Economic Matrix

Economic historians have always been principally concerned with growth and development or their absence. For the last two hundred years in England growth has been associated with industrialisation and with the transfer of factors of production, particularly labour and capital, away from agriculture. At the same time, there was a transfer of people from the country to the town, so that the growth of urbanisation, the process whereby the typical or average Englishman came to live in a community more than 5,000 strong, has been associated with the process of growth.¹

What constitutes growth, however, and how is it related to development? Obviously, man cannot consume more goods and services than he produces. Only if man can produce more can he improve his standard of living. A pre-industrial economy, however, is generally characterised by a low level of *per capita* production, and this low labour productivity caught mankind up in a vicious circle of hunger, malnutrition, lassitude, inefficiency and low productivity. There were other reasons for a small output, of course, particularly primitive tools and limited known sources of power. To increase man's output, to raise the productivity of labour, is to generate growth. In part, such an increase is the result of better tools and labour-saving equipment, and such machinery represents one facet of the investment of capital in an industry. Instead of applying labour directly to the end in view it is diverted to making equipment which will ultimately increase the yield of a smaller amount of labour applied directly. This withholding of labour from immediately productive ends is not as easy as it sounds, for such labour has to be fed

and housed during the period in which the new work is being made, so an accumulation of resources is a necessary preliminary.

On the whole, new machinery or new processes have had their most dramatic effects in manufacturing industry. The rate of growth in such industry can be geometric, while the rate of growth in agriculture is rarely more than arithmetic. For this reason, the importance of agricultural growth has often been underrated. Some economists have even suggested that the sole significant role of agriculture was to make resources available for use in another, more profitable, area. Few people, however, would now adopt so extreme a view, but the division of the economy into areas is a very convenient analytical tool and one that will be used extensively in this section. Economists generally divide the economy into five sectors:

- (1) agriculture, forestry, fishing;
- (2) manufacturing, mining and industry;
- (3) trade and transport;
- (4) domestic and personal;
- (5) public, professional and all other.

A pre-industrial economy will typically have a lot of its population employed in sectors (1) and (4). The growth associated with industrialisation is generally marked by a shift of population, measured as a percentage, from those sectors to (2) and (3).

The process of transition to a highly capitalistic industrial society is, however, complex and there has been much learned disagreement over the nature and significance of the various factors involved. Clearly much depends on the nature of the labour force. A sober, educated, hard-working labour force with a propensity to work steadily and reliably at its task and a strong sense of personal responsibility is obviously more desirable than a community of lethargic gamblers of erratic habits accustomed to getting by on hand-outs. More conveniently measurable, however, is its size and composition and what economists term its 'elasticity': the ease with which it can be expanded and mobilised.

Much, too, depends on the capital available, its distribution amongst the various social, economic and political groups and the ease with which it can be accumulated, borrowed or transferred. Much, again, may depend on the technological level of the community and the rapidity with which new ideas can be developed and accepted by the community. Other matters to be taken into account include market conditions, the mechanisms whereby goods can be distributed and the institutions of trade, commerce and finance.

Moreover, to list these elements as if they were autonomous is to beg a number of crucial questions about their interrelations. To give a single but critical example: is invention an autonomous gift from outside the system or is it an induced response to a particular set of circumstances?

Many historians, moreover, no longer think that economic factors alone are a sufficient explanation for a sudden spurt of growth being transformed into a continuing and constant feature of the economy. State policy, man's acceptance of a particular structure of society and man's perception of his own goals must play a significant, if not a dominating role. Recently North and Thomas have laid stress on what they call 'socio-economic' institutions as a necessary framework without which the individual initiative which we call capitalism is unlikely to flourish. By this they mean, for example, that the law must be structured in such a way that the greater part of the benefit of what an individual does is realised by that individual and not by another. They think that structures which encourage the proliferation of 'free riders', that is, those who benefit from the actions of others without contributing in any way to the risks or costs, are adverse to economic growth in a capitalist system.²

Even within a narrower economic explanation, differences of opinion on the nature of the forces for growth have always existed, particularly since the impact of many factors varies from situation to situation. Price rises, for example, may stimulate production or make it unprofitable; population growth can provide necessary additional labour or create a 'Malthusian trap' in which pressure on existing resources becomes unbearable and ultimately results in starvation, famines or war.

Arguments about the relative importance of different factors have, moreover, been accompanied by some argument about when the process could properly be said to have begun. Historians divided into two main schools: those who were gradualists, who saw history as a seamless fabric in which the appearance of new colours and designs, at first scarcely perceptible, grew steadily until they dominated the whole material; on the other hand were those who sought for what are called the 'significant discontinuities', who looked for a moment at which a marked and measurable difference was perceptible.

Until the early 1930s most historians considered that such a difference was first noticeable in the late eighteenth century, the period which Toynbee had labelled the Industrial Revolution. Then in 1930 an American scholar, John Nef, made a new suggestion which threatened to disrupt all accepted ideas, and which caused a lot of people to re-examine more carefully than before the earlier history of the English economy. To understand the enduring debate over the industrial

developments of the period 1540–1640, Nef's theory and the objections to it must be examined briefly.

HISTORIOGRAPHY OF THE DEBATE

'There have been two industrial revolutions in England, not one.'³ 'There have been at least two "industrial revolutions" in Great Britain.'⁴ 'The opinion is gaining strength that there was at least one period during which the rate of change was scarcely less striking.'⁵ So wrote Professor Nef. This idea first came to him when he was working on his first and least-disputed work, *The Rise of the British Coal Industry*. He was deeply impressed by the increase in coal output between the dissolution of the monasteries and the outbreak of the Civil War; and he found when he examined the impact that coal had had on other industries that a good case could be made for giving it a very important place in various developments, so that he could claim, with some reason, that 'by the beginning of the seventeenth century, men had already begun to count coal a national asset'⁶ and that 'the general economic and social development of the period from 1550 to 1700 cannot be understood unless account is taken of the part played in it by the coal industry . . . the process by which the ultimate triumph of industrial capitalism was assured would have been fundamentally different without [it]'.⁷

Much of Nef's case rests on the conviction that there was a major crisis in the timber industry which was both too great and too rapid in its development to be accounted for by the rise in population in England. The crisis was caused, he suggested, by increased demand for timber both as a fuel and as building material in industry and manufacture. To prove it, he sought to show 'that a sharp expansion of native industrial enterprise did in fact occur under Elizabeth and James I', and then to give grounds for believing that this expansion made extensive inroads upon the forests.⁸

In demonstrating the second part of the statement he had ample help in the complaints which streamed from the pens of contemporaries both in lawsuits and in pamphlets, complaints which taken at their face value would suggest that the face of England was rapidly becoming totally denuded of trees. In demonstrating the first part, that there was a rapid development of industry and manufacture 'more than proportionate to the increase of population', he was in greater difficulties, partly because there was, and still is, no satisfactory evidence about how fast that rate of increase was.

Nef, however, confident that he could demonstrate a general industrial

development accompanied by technical improvements and changes in organisation, was thus led to his first formulation of the idea 'that the late sixteenth and seventeenth centuries may have been marked by an industrial revolution only less important than that which began towards the end of the eighteenth century'.

His first need was to discount evidence of decline in the period, in such industries as tin mining in which G. R. Lewis had shown declining output. This must be not only untypical but unimportant: the industry must stagnate rather than decline ('a slight decrease'), a movement offset by the rise in the developing brass industry which replaced it, and by the supposedly flourishing state of the lead industry. After this he went on to a demonstration that the iron industry under Elizabeth and James expanded considerably and that even when domestic output of crude iron became stationary, the domestic manufacture of iron goods continued to expand on the basis of imported Swedish iron. The demonstration was partly indirect – an attempt to show that additional demands arose in other 'rapidly expanding' industries such as ship building, house building, saltpetre and gunpowder manufacturing, salt making, alum and copperas manufacturing, soap boiling, sugar refining and the dyeing of cloth.

Ultimately, however, he chose to rest his case on three growth industries: the production of ships, of salt and of glass; and of these he produced most evidence for salt and glass making. In the case of salt, he argued that output from the brine pits must have increased since in Henry VIII's time total domestic consumption was 40,000 wey a year, three quarters of which was imported, while by 1681 production might be reckoned as 20,000–25,000 wey a year from the Cheshire brine pits alone. On top of this came the manufacture of salt from sea water (with the aid of coal) which he felt grew from nothing to 15,000 tons or weys a year, or more by the late 1630s. This progress was maintained under the Restoration.

Both here and in his later works Nef conveys an impression that nearly all the salt England consumed was by the seventeenth century domestically produced. Since salt was a crucial preservative, the industry was certainly an important if minor one. In the case of glass he had greater difficulty since most people were agreed that the monopoly Sir Robert Mansell obtained was a hindrance rather than a help to development, but he tried to show that output grew between 1580 and 1615, and that it recovered after the Civil War, while the Mansell patent for making glass with coal gave the English glass makers a great technical lead over their continental competitors. Finally, Nef went on to the minor industries, where he attempted to pile up instances of improvements.

At this point, however, he was more concerned to show how crucial coal was to the development as a substitute for the increasingly costly wood fuel, and to demonstrate its substitution in various processes such as glass making, soap boiling, beer brewing and the like. Coal, he wrote, made lime cheap, so that the husbandman could improve agricultural production; coal stimulated the shipping industry; coal stimulated improvements in wagon ways; coal was significant in nearly all the patents applied for at the period; coal was breaking down regional isolation in economic matters.⁹

In accordance with current economic orthodoxy, he considered that the investment of large units of capital and the development of large-scale organisations, as well as technical innovations, were signs of an industrial revolution, so he stressed such factors wherever they appeared: the increasing costs of starting a colliery, the introduction of new apparatus (especially the invention of boring rods which helped in prospecting) and the development of sophisticated organisations, especially the need for partnerships and the appearance of joint stock companies. 'There were probably not more than 50 men in Elizabethan England with sufficient wealth to finance single handed the largest colliery of the day, even had they been able to realize all their assets.'¹⁰ The coal industry, Nef claimed, proved 'a fertile field for the growth of capitalistic forms of industrial organisation'¹¹ and it also, by tending to bring about the concentration of industries in certain districts, and thus by widening the market for the product, made conditions favourable for an increase in the size of establishments.

At the same time, Nef looked at the picture from the consumption side and put forward a view of an increasing standard of living. 'Throughout the country, houses of brick and stone, soldered with lime for mortar, each with its chimney, replaced the older, cruder dwellings of light timber, thatch and straw; the inhabitants, in most cases for the first time, looked out of glass windows, sat in comparative comfort round coal fires in iron grates, set their tables with earthen and china ware, knives, forks, and spoons of metal, and drinking vessels of glass.'¹²

This thesis was received cautiously; most reviewers praised the work on the coal industry, but were only moderately enthusiastic about the wider implications. Professor Lipson, reviewing the book for the *Economic History Review*, spoke of it as a substantial work of great value, and praised Nef for his gift of imagination. Nevertheless, he issued a caution:

'With a pardonable emphasis on coal, he leaves somewhat in the shade the economic progress achieved prior to, and independent of, the rise