

Book Reviews

EUROPEAN ECONOMICS

The Unbound Prometheus

Technological Change and Industrial Development in Western Europe from 1750 to the Present. By David S. Landes. Pp. ix + 566. (Cambridge University Press: London, July, 1969.) 25s; \$2.95.

PROFESSOR LANDES has set himself an ambitious task in surveying the course of technological change and industrial development over the past two centuries. In effect, he has virtually written an economic history of Western Europe, though attention is chiefly focused on Britain, France and Germany with emphasis on their industrial development. He has assembled an enormous amount of factual information relating to the industrial progress of these countries and technological aspects are discussed within the wider aspect of economic growth. He analyses in some detail the factors responsible for differential rates of development between countries over the same period of time. The book will certainly be consulted widely by those interested in the industrial heritage of Western Europe.

But, and perhaps inevitably in a book of this sort, the writer lays himself open to criticisms. These are both of a general and specific nature and do not arise solely on matters of interpretation which conflict with those of this reviewer, though there are plenty of the latter. For example, Landes stresses, and probably quite rightly, the importance of technological change in modern industrial development. But I feel he never really defines explicitly what he means by this concept, nor does he attempt to measure precisely its contribution to growth. Thus the main burden of proof lies in the detailed (sometimes too detailed) descriptive accounts of technical developments in the main industries, the sheer weight of which allows them to assume overwhelming importance. In other words, he eschews modern growth analysis and relies on argument by example and illustration. This is all very well, but it is not easy to form a clear idea of the role of technology without it. Admittedly, firm analysis is not easy for the earlier period because of the severe data limitations, but for the past hundred years the statistical problem is less insuperable. In fact, as Landes shows, there is a considerable volume of statistical data not all of which is always put to good use. Some of it is presented in a rather indigestible form while some of the figures are so shaky and meaningless as to be not worth quoting.

This criticism should not detract from the fact that the author has brought together much useful material on technology and industrial development which is not easily accessible. But the fact remains that it could have been put to better use given a more rigorous analytical framework. Undoubtedly Landes is at his best when dealing with the micro-technological aspects of industrial development. When he moves on to a broader canvas

his arguments are less convincing and, even allowing for possible differences of interpretation, often give rise to some very doubtful premises. The following are some of the more obvious points on which issue must be taken: "In Britain, the Industrial Revolution had been built on the cotton manufacture" (page 174); the suggestion that the cotton industry showed more vitality and adaptability than any other established British industry between 1870-1914 (page 215); the implication that British growth rates turn up after 1900 (page 234); and that Britain would certainly have been spared her balance of payments crises after 1945 had exports grown faster (page 512).

Again, there are the more debatable points which I accept are open to wider interpretation than those quoted above. The impact of changes in legal institutions in the middle of the nineteenth century is surely exaggerated and it is not made clear how they affected the cycle, if at all (incidentally there is no mention of Juglar cycles). Was France's industrial growth markedly slower than that of Britain in the early stages of development? Was the divorce between science and industry so sharp in the Industrial Revolution? Finally, the contrast between German and British enterprise in the late nineteenth century is perhaps plugged a little too hard. After all, British enterprise showed up in a different light in comparison with the French.

Insufficient attention has been given to matters of detail in the final preparation of the book. There are a number of misprints and incomplete cross-references. Some of the footnotes are misleading. For example, the reference to the efficiency of capital in the cotton industry (page 146, note 1) is not very clear and it should be noted that in real terms the capital-output ratio was stable between 1834 and 1886. Opportunity should also have been taken to revise certain points in the first part of the text which was originally published in volume six of the *Cambridge Economic History of Europe* in 1965. Thus we are left with a very curious reference to Habakkuk's book on *American and British Technology* on page 355, while on page 191 we are told that the national income estimates for Britain start from 1870 (in fact they now go back to 1855). There are, too, a number of instances where Landes has not made use of the most up to date statistical series.

In spite of these criticisms, the book remains stimulating and controversial, not least for its debatable arguments some of which lack supporting evidence. It will certainly rank as an important contribution to economic history. Perhaps in a later edition Landes will remove some of the rougher edges to the satisfaction of a critical reviewer.

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SPIRIT OF CHINA

Within the Four Seas

The Dialogue of East and West. By Joseph Needham. Pp. 228. (Allen and Unwin: London, June 1969.) 40s.

IN barely two decades, a new world power with immense resources has arisen, strong enough to assert itself first on the Indian north-east frontier and now in Eastern Siberia. However non-aggressive China's intentions may be, the world will have to reckon with a country that is likely to advance as quickly as Japan but with ten times the strength. As regards China's internal progress, the professional "China watchers" have been consistently wrong. Two years ago, I was called up urgently by the BBC, who had set aside the advertised Home Service programme for a special programme on China because (according to their information) Mao was going to be out of office by the end of the week. Needless to say, this notion appeared utterly ridiculous to anyone who had recently been in China. It could only arise out of complete ignorance, not only of the political issues involved,