

BIG STEEL, INVENTION, AND INNOVATION, RECONSIDERED *

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I. The basic issue, 457.—II. Status of the United States industry compared with the world industry as a whole, 458.—III. The United States and European industries compared, 461.—IV. Technological and economic complications in the decision process, 465.—V. The United States and Japanese industries compared, 470.—VI. The significance of 1962, 471.—VII. Conclusions, 473.

In their article "Big Steel, Invention, and Innovation" in the May 1966 issue of this *Journal* Walter Adams and Joel Dirlam state their thesis clearly and forthrightly:

For testing the "Schumpeterian" hypothesis (that large firms with substantial market power have both greater incentives and more ample resources for research and innovation) we have selected the oxygen steelmaking process—the circumstances surrounding its invention, its delayed adoption by the dominant firms in the United States steel industry, and the cost of this delay in terms of the industry's social performance.¹

Their conclusion was that the hypothesis was not supported by the data presented. In this article the same case and essentially the same sources have been examined, but quite different, and in some instances exactly opposite, conclusions have been reached.

I. THE BASIC ISSUE

The key to the analysis presented by Adams and Dirlam is the comparative delay of United States firms in introducing the LD process.² To establish the fact of this delay they present a table of data (reproduced on page 460) and state,

Reviewing the history of innovation with respect to oxygen steelmaking, the following conclusions are inescapable. First, as Table II indicates, United

* I wish to express appreciation to M. G. Clark, M. G. De Chazeau, A. E. Kahn and P. B. Burleson for comments on drafts of this article; to The Ford Foundation, Cornell University, and IESE of the University of Navarra, Spain, for Research grants and administrative support; and P. J. Schwarz for research assistance. Errors which remain are my responsibility.

1. Walter Adams and Joel Dirlam "Big Steel, Invention, and Innovation," this *Journal*, LXXX (May 1966), 169; hereafter referred to as "Big Steel."

2. In this article the several oxygen converter processes are collectively designated "OC" processes while the Linz-Donawitz, one particular process, is referred to as "LD."