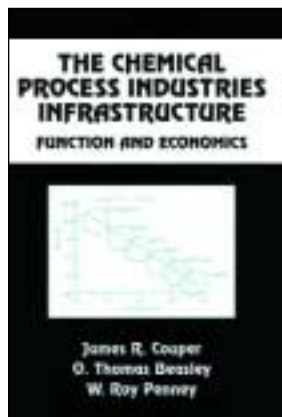


Books

The Chemical Process Industries Infrastructure: Function and Economics

**James R. Couper,
O. Thomas Beasley, and
W. Roy Penney, Marcel
Dekker,
New York, NY, 627 pp.,
\$195, 2000**



Engineering students, in general, and chemical engineering students, in particular, receive a good foundation in microeconomics when they take a course on “engineering economics.” However, few engineering students understand macroeconomics. They may take an introductory macroeconomics course, but that usually will not discuss in detail how the interactions of the various industrial segments form a national economy. Such an introductory course will certainly not discuss how the chemical process industries (CPI) contribute to a national economy, or how they interact with the other segments of that economy.

However, the students of each engineering discipline do need to understand how each technological discipline contributes to a national economy. They must also be shown how their chosen engineering discipline contributes directly to improving the national and global standard of living through technologically driven productivity increases.

To fill this gap in the education of chemical engineering students, Wei, Russell, and Schwartzlander published *The Structure of the Chemical Industries* (McGraw-Hill, 1979). Couper, Beasley, and Penney also recognize this gap in the chemical engineering curriculum, thus they wrote *The Chemical Process Industries Infrastructure: Function and Economics*.

This book begins with Chapter Zero, a Readers Guide that is for educators and the more inquisitive student. Chapter 1 introduces the student to the CPI and its position in the national economy. Chapter 2 presents basic micro- and macroeconomic concepts. Chapter 3 covers elementary accounting and financial statements. The financial flow charts on pages 115–116 are much easier to understand than most similar discussions published in managerial accounting and managerial finance books.

Input-output analysis is discussed in Chapter 4, which offers an introduction to linear programming. The major products of the process industries and the

major corporations manufacturing chemicals and marketing chemical products are introduced in Chapter 5.

Chapter 6 outlines the manufacture and economics of several chemical products, particularly methanol. Chapter 7 discusses company financial reports in a general manner, then presents brief histories of Air Products, ADM, Dow, DuPont, Merck, Mobil, Monsanto, Procter and Gamble, and Union Carbide. This list of companies demonstrates the difficulty of writing an all-encompassing text about the CPI. How many of these companies have been merged or been devoured?

The role of the CPI in a national economy, in particular, that of the U.S. is described in Chapter 8. Chapter 9 discusses the role of the CPI in the global economy and Chapter 10 presents the future prospects for the CPI.

There are six appendices in *Infrastructure*. The first three are “SIC Codes for Chemicals ...”, “Chemical Companies Listed ...” on various stock exchanges, and “Input-Output Tables.” The remaining three appendices are various indexes for the text.

The authors of *Infrastructure* say their text was developed from Wei *et al.* Actually, *Infrastructure* appears to be a second edition. Most of the chapter titles are identical to those in Wei *et al.*, as are the figures and graphs. Couper *et al.* attempted to expand Wei *et al.* by including “globalization.” However, they do not explain how this latest phase of globalization arose or how it impacts individuals, corporations, or national economics. There is also no discussion on the forces driving corporate management, such as the need for continual financial growth and increased asset utilization. There is also little mention of the rise of “chemophobia” within Western societies and its impact on the CPI. And, there is little discussion of how the CPI has greatly increased the standard of living on a global level.

Nor does *Infrastructure* credit the CPI for embracing society’s environmental initiatives and its effort to comply with those initiatives. All these topics should be presented and discussed in a macroeconomic text about the CPI.

As a demonstration of how much economic and financial information is available from companies and corporations, national governments, and international institutions, this text is successful. But this success will not make *Infrastructure* a classroom staple.

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