

W. W. ROSTOW

THE WORLD  
ECONOMY

—History and Prospect—

W.W. Rostow

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# **The World Economy**

History & Prospect

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# The World Economy

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*To Lois Nivens*

## Preface

I began as an economic historian in the 1930's by studying the British economy of the nineteenth century. It soon became clear that its development could not be fully understood except as part of the evolution of an expanding world economy. I decided, therefore, to study and teach economic history as the interaction between pervasive forces generated in the world economy and the stories of national growth. For some twenty years my graduate students and I turned the saga of the world economy, thus conceived, around in our hands. In 1972 I concluded it was time to try to put between covers this way of looking at things and to do so in a form which might help illuminate present and future problems in the world economy. The first result of this exercise in summation was *How It All Began*, initially planned as the opening chapter to the present volume; but the subject took on a life of its own and emerged as a separate book.

The present study is both an essay in history and a challenge to conventional neoclassical and neo-Keynesian economic theory. With all their virtues, neither provides, nor do both together, a sufficient framework for understanding the dynamic past or the character of the economic problems the world economy now confronts. Part Six, dealing with the latter, is something of a tract for the times. In this aspect, as well as in its challenge to conventional theory, the book belongs with an old tradition among economic historians, a tradition reaching back to the origins of the subject in both Adam Smith and the German historians who took exception to some of Smith's policy precepts.

As the book fell into perspective, I found that its applications to current policy were more numerous than I had originally perceived. To include these applications fully in Part Six, however, would have distorted the proportions of the study. I have chosen, therefore, to write a separate volume addressed wholly to policy matters. Part Six seeks, therefore, to define an appropriate framework for policy rather than offer detailed prescriptions.

I have aimed here at a level of exposition accessible to interested nonprofessional readers and upper-level undergraduates, to whom I have, in fact, taught much of the substance of the book over the past several years. Professional issues in contention among economic historians and analysts of economic growth are mainly confined to the notes. Although there are a good many tables and charts for those who find them useful, the major conclusions to be drawn from them are stated in the text.

In filling gaps in the data required for this study, many helped: Moses Abramovitz, Stephen Baer, Thomas Berry, T. G. Beynon, Herbert J. Bickel, William Braisted, Hollis Chenery, Howard Cottam, L. J. Deman, Alexander Eckstein, O. J. Firestone, Edward Fried, Robert Gallman, William Glade, S. A. Goldberg, Kermit Gordon, Doreen Goyer, James Grant, Walter Heller, Hans Heyman, John Holsen, Frances James, Tomasson Jannuzi, Herman Kahn, Charles P. Kindleberger, Philip Klein, Simon Kuznets, Wassily Leontief, W. Arthur Lewis, Vitaly P. Lomykin, Robert McPheeters, Wilfred Malenbaum, Edwin Martin, Ilse Mintz, B. K. Nehru, Douglass North, H. D. Potter, Stanley Roe, Paul Rosenstein-Rodan, Henry Rosovsky, Anna Schwartz, Gary Walton, Anthony Wiener, Charles Zraket, economic officers in the Australian, British, Indian, and Turkish embassies in Washington, and the OECD in Paris.

I wish to thank, in particular, Professor Berry for making available unpublished United States national income calculations and Professor Kuznets for permitting me to use unpublished national income worksheets for thirty-two countries.

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Pamela Grisham, Virginia Fay, and Lois Nivens typed the various drafts of the manuscript with good cheer. In addition, Miss Nivens was, as always, a devoted editor. Carolyn Cates Wylie, of the University of Texas Press, was extraordinarily helpful and meticulous in preparing the final copy for publication.

The National Endowment for the Humanities generously provided assistance in mobilizing the data which underlie the twenty national economic histories summarized in Part Five. I had experimented in *The Process of Economic Growth* (Appendix I) with assembling and charting aggregate and sectoral data on national economies. In the course of extending that procedure, in the present study, Stuart Greenfield, my research assistant in 1975, suggested that we put the data into a computer. The N.E.H. agreed that we divert a portion of its grant for this purpose. James Peach designed a flexible interacting computer program. At various times, Joseph Pluta and Terri

Hempe, as well as Stuart Greenfield, helped mobilize the data. Frederick Fordyce and then Faisal Nasr checked the data against original sources and consolidated Appendix D. Gerald Fay designed the method and format for reducing the computerized charts of Part Five to their present form. Stephen Chase worked with the Visual Instruction Bureau of The University of Texas at Austin to complete the job and, in addition, made a good many of the charts this book contains. The Bureau of Business Research of The University of Texas at Austin kindly assisted in the reproduction of the charts used in other parts of the book.

Sources for the data charted in Part Five are given in Appendix D. The data and information on the manipulations permitted by the computer program are available from: Project Mulhall, Economics Department, Room 400 B.E.B., The University of Texas at Austin, Austin, Texas 78712. Some of my colleagues and I are now expanding the initial historical data base with respect to both the number of countries and the range of statistical series embraced, and sharing it with all who may be interested.

Publication of this study at its full length has been made possible by a grant from the Sid W. Richardson Foundation to the University of Texas Press. I am indebted, therefore, both to the generosity of the Richardson Foundation and to the enthusiasm and technical skill of my colleagues at the Press.

June 1977  
Austin, Texas

W. W. Rostow

# Introduction

I have chosen to tell the story of the world economy since the eighteenth century by surveying that era from five successive perspectives: the demographic transition; the overall sweep of production, trade, and price movements; the more or less regular sequence of trend periods or Kondratieff cycles; the timing and character of more conventional business cycles; and then an account of how twenty economies have thus far moved through the stages of growth, economies embracing about two-thirds of the world's population, 80 percent of its output. Each of the first five parts of the book thus marches up to the present, ending with problems that the world economy now faces. When these problems are collected, they form the policy agenda addressed in Part Six.

Contrary to the view presented in formal analyses of the limits to growth, the most critical period for industrial civilization emerges as the next quarter-century, rather than the first half of the twenty-first century. The framework for policy developed in Part Six embraces not only the fields of population, agriculture, energy, raw materials, and the environment, but also the return to regular full employment and the achievement of price stability in the advanced industrial countries.

I have structured the book in ways which deal with the past two centuries as an analytic unit because I have gradually become convinced it is possible and useful to view the saga of modern economic growth as a whole. I hope this book encourages further studies from this long perspective. Similarly, I hope the exercise of trying briefly to tell the story of twenty national economies in Part Five will convince readers that it is not impossible to get to know each of them (and others) like old friends. Put another way, I believe we need a somewhat broader and less parochial view of economic history, less chopped up by periods and nations, less reduced to statistical averages, to see clearly where we have come from and what we, as a human community, confront in the times ahead.

All works in history and the social sciences are rooted in theory. The theory used by the author determines the facts selected as rele-



vant, the book's structure, and, ultimately, its conclusions. It is important, I believe, for an author to be explicit about his theory.

From beginning to end this book is shaped by a particular dynamic, disaggregated theory of production and prices. Portions of that theory are stated in the opening chapters of Parts Three, Four, and Five. The interested reader can find it elaborated as a whole in *The Process of Economic Growth*. It may, nevertheless, be useful briefly to summarize its character, because it differs, to a degree, from the theory of production and prices which we conventionally teach our students and which pervades the way we look at economic phenomena beyond the classroom.

At its hard core, conventional economic theory excludes or deals only abstractly with what economists call long-run economic change. That means it does not embrace effectively within its structure changes in population, in technology, or in the willingness of private or public entrepreneurs to innovate. Those exclusions permit elegant statements of static equilibrium; but such theory is of limited use, either to historians or to economic practitioners, both of whom must live in a world where the economists' long-run forces are in motion every day.

A second difficulty is that the modern theory of growth is formulated in highly aggregated terms which do not permit growth to be related to the critical technological changes taking place in particular sectors.

I believe it is possible to bring within the structure of a dynamic, disaggregated theory the forces making for population change, as well as the generation of scientific knowledge and invention, and the process of innovation. It is then possible to conceive of a dynamic equilibrium path for a peaceful, closed economy and all its sectors. Those overall and sectoral optimum paths imply that investment resources are allocated to the sectors without error or lag, taking into account changes in technology as well as demand. We can thus formulate abstractly a disaggregated, moving, rather than static, equilibrium. In fact, of course, the economies we study were not closed; they were often at war or affected by war; and investment was subject to systematic errors and lags. Moreover, the coming of new technologies and the opening of new sources of food and raw-materials supply often took the form of large discontinuous changes in the economy and its structure. And, even in the most capitalist of societies, the economic role of government was significant. What we observe, then, are dynamic, interacting national economies, trying rather clumsily to approximate optimum sectoral equilibrium paths, tending successively to undershoot and overshoot those paths.

If these various economies more or less regularly absorbed the technologies generated by the world's investment in science and invention, they grew; that is, with many irregularities and vicissitudes, their average income per capita tended to rise at rates which generally followed an S-shaped path of acceleration and deceleration

once take-off occurred. That process of growth, accompanied as it regularly was by increased urbanization, education, and other social changes, underlies the demographic transition analyzed in Part One. Where investment lags were particularly long, as they have historically tended to be in expanding output from new sources of foodstuffs and raw materials, the dynamics of growth yielded the trend periods analyzed in Part Three, generally marked by rather massive undershooting and overshooting of optimum sectoral paths. Part Three reflects my theory of the cycles which Kondratieff identified but for which he offered no systematic explanation. When the lags were shorter, and investment errors more quickly corrected, the business cycles of Part Four emerged. When national growth is analyzed with particular attention to the effective absorption of the lumpy sequence of major technologies, the stages of growth of Part Five move to the center of the stage. It is this dynamic, disaggregated theory of production and prices which equally determines the emphasis in Part Six on changed directions of investment as the primary instrument for regaining momentum in the world economy and recapturing a structural balance lost since the end of 1972.

I have never regarded discussions of method as likely to be highly productive. A method is as good as the results it helps achieve. Nevertheless, a few words about method may be useful, since the self-consciousness on the subject of some contemporary economic historians has placed the issue inescapably on the agenda, where it has appeared from time to time since the field of economic history took shape.

For some forty-three years I have been trying to bring to bear modern economic theory and statistical methods in economic history. (My first exercise, as a sophomore at Yale, was the application of Keynes' *Treatise on Money* to the British inflation of 1793-1815.) I have found two dangers in this exciting and challenging line of endeavor. First, there is the danger of cutting the problem down to the size of the orderly statistical data that happen to be available. I have tried here to keep the problem, with all its sharp edges, before the reader and to bring to bear on it whatever relevant quantitative data (and qualitative evidence) I could mobilize. And where a gap remains between the problem and the insights quantitative analysis can generate (as, for example, with respect to the determinants of birth rates in various societies), I have tried to be explicit about our residual areas of ignorance or uncertainty. The second danger arises from a little-understood trade-off between complexity of method and simplicity of usable theory. Generally speaking, the fancier the method the more simple the usable theory. (I discuss and illustrate this problem in *The Journal of Economic History*, March 1971, pp. 76-86.) As a historian as well as an economist, my loyalty must be to the full complexity of the story, as nearly as I can perceive it, rather than to the formal elegance sophisticated but over-simple models can provide. The dynamic disaggregated theory of production

and prices applied throughout this book is somewhat more complex than, say, a Walrasian model of equilibrium or a Harrod-Domar or neoclassical model of economic growth. I believe it produces a better framework for dealing with the realities of, say, long cycles, business cycles, or sequences of national growth than more aggregated models, and a better framework for analysis of the present state and prospects for the world economy. But it does not lend itself easily to high-powered econometric exercises, in part because the data are not available in appropriate forms. I have gladly used formal quantitative exercises when they bore in a relevant way on a particular subject; e.g., Robert Brooke Zevin on New England cotton textile production after 1815, Simon Kuznets and Hollis Chenery on average economic and social patterns in relation to GNP per capita, Ilse Mintz on business cycle patterns. But if one is trying to capture in a reasonably coherent way the evolution of the world economy over the past two centuries and the major stories of national growth (each interwoven inextricably with noneconomic history), one must, I believe, opt, on balance, for complexity of analysis rather than complexity of manipulation.

I do believe, however, that a good many of the issues raised here can be isolated and pursued with more rigorous statistical methods; for example, the relative role in trend-period phenomena of impulses from relative prices, leading sector retardation, and migration; the comparative aggregate and sectoral analysis of pairs of countries at similar stages of economic growth (Turkey-Mexico, Venezuela-Iran). I hope one effect of this study is to stimulate such further research. But, evidently, that is for others to decide.

Any effort to tell the story of the world economy over two centuries must inevitably be governed by the old academic dictum: in limitation lies mastery. There are a good many aspects of modern economic history which are not dealt with systematically here; for example, the evolution of corporations and labor unions, banks and social legislation. My *Politics and the Stages of Growth* deals with some dimensions of economic as well as social and political history set aside in the present study.

For some, at least, monetary affairs will also appear to have been slighted. In the analysis of the pre-1914 era, monetary factors appear only when I believe they left a significant impact on the course of events; e.g., in transmitting the effects of bad harvests in the eighteenth and nineteenth centuries; in helping create the setting for cyclical crises and then (in Britain, at least) cushioning their impact; in making it easier or more difficult (via interest rates) for housing booms to develop; in stimulating, under the gold standard, the inflationary diversion of resources to gold mining. In the post-1918 world of more conscious monetary policies, they emerge on stage in the 1920's with the French devaluation and the British return to the gold standard at the old rate, as well as the failure of the United States to accept its responsibilities for the trade and mone-