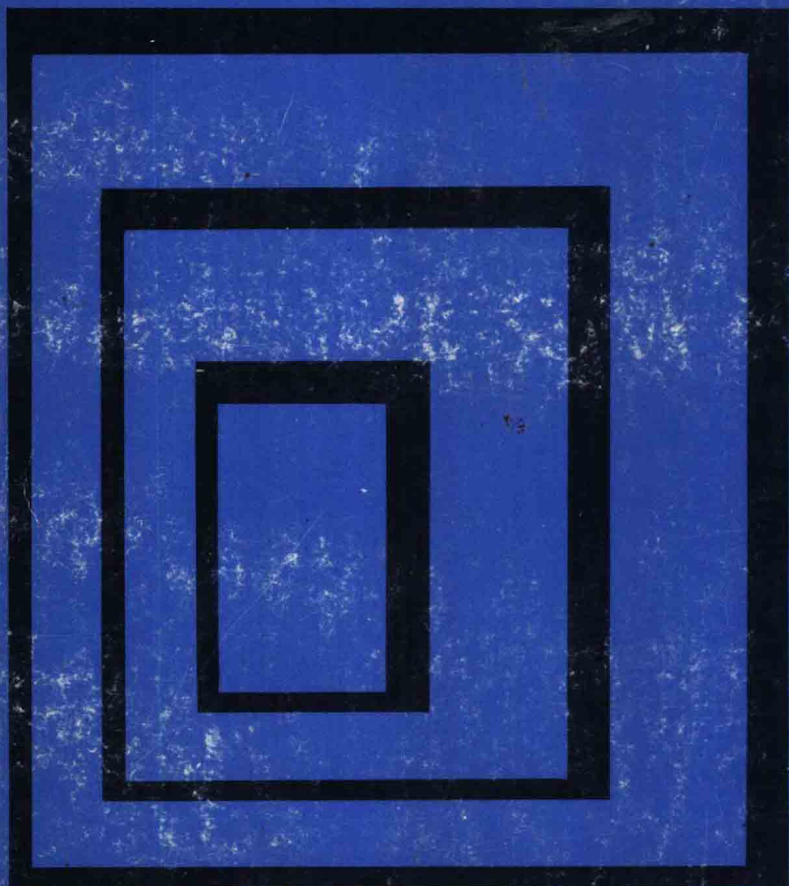


The Stages of Economic Growth

W.W. ROSTOW

SECOND EDITION



CAMBRIDGE UNIVERSITY PRESS

THE STAGES OF ECONOMIC GROWTH

A NON-COMMUNIST MANIFESTO

SECOND EDITION

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PREFACE TO THE SECOND EDITION

I

In considering a second edition of *The Stages of Economic Growth*, a decade after its publication, I weighed the question of revising the text itself. For two reasons I decided to confine changes to this Preface and to Appendix B, 'The critics and the evidence'.

First, the analytic bone-structure of the argument.

For reasons set out in Appendix B, I am not inclined to alter the basic approach to the stages of growth; and I regard the evidence accumulated over the past decade on the past and on the contemporary world as, on the whole, reinforcing, not weakening, the concept of stages of growth. This has been an extraordinarily fruitful decade of research in economic history and in the study of growth in the contemporary world. I would not for a moment argue that the text would be identical if it were written afresh. There are important bodies of data and analyses which I would certainly take into account. But I concluded this was best done through an Appendix rather than by rewriting the text.

The Stages of Economic Growth is an effort to map a large problem. It is not an encyclopedia of economic history. An effort to introduce, within its text, the new data available on the various nations and regions of the world would alter its character and purpose.

Despite the heat generated in certain portions of the debate about the stages of growth, the heart of the controversy lies in a quite straightforward technical difference of view: should growth be analysed in terms of broad aggregates (like GNP, the proportion of income invested, the proportion of GNP generated in primary, manufacturing, and service sectors, etc.)? Or, must these aggregates be linked to movements in the sectors and sub-sectors within which new technologies are actually absorbed efficiently into an economy? If one takes the former view, then the dating of take-off and subsequent stages appears fuzzy and impressionistic. If one takes the

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latter view—and is prepared to dig out the data—the stages emerge with reasonable clarity, out of the past and in the world around us. (In the March, 1970, issue of the *Journal of Economic History* I apply the stages approach to the evolution of regions and nations since 1945, 'The Past Quarter-Century as Economic History and the Tasks of International Economic Organization'.)

Professor Simon Kuznets has led the attack on the stages of growth on this question of the appropriate degree of disaggregation; and, quite properly, his extraordinary scholarship as a statistical analyst of growth has influenced others. But, in this part of my work I am a child of his earlier marriage. It was his *Secular Movements in Production and Prices* (1930) which, more than any other single work, set me off on the approach I have long taken to the analysis of growth, linking, as it easily does, to the essentially sectoral and sub-sectoral approach an historian instinctively takes to how things actually happened at particular times and places in the past.

This passage from Kuznets' *Secular Movements* (pp. 3-4, 5, and 10) suggests its connection to stages of growth analysis:

This picture of economic development suffers a curious change as we examine it first in a rather wide sphere, then in a narrow one. If we take the world from the end of the eighteenth century, there unrolls before us a process of uninterrupted and seemingly unslackened growth. We observe a ceaseless expansion of production and trade, a constant growth in the volume of power used, in the extraction of raw materials, in the quality and quantity of finished products.

But if we single out the various nations or the separate branches of industry, the picture becomes less uniform. Some nations seem to have led the world at one time, others at another. Some industries were developing most rapidly at the beginning of the century, others at the end. Within single countries or within single branches of industries (on a world scale) there has not been uniform, unretarded growth. Great Britain has relinquished the lead in the economic world because its own growth, so vigorous through the period 1780-1850, has slackened. She has been overtaken by rapidly developing Germany and the United States. The textile industries which had so spectacular a rise toward the close of the eighteenth and the beginning of the nineteenth century ceded first place to pig iron, then to steel, while in turn the electrical industries assumed the leadership in the '80s and '90s.

The view becomes further variegated if we distinguish the different

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industries in their national units. The rapid development of the English textiles came much earlier than that of the American. The Belgian coal output had reached nearly stable levels in the beginning of the twentieth century when American and German coal production were still showing substantial growth. Industries within the limits of one country frequently show a retardation of development as compared either with the national industry as a whole or with the same industry on a world-wide scale. . . .

As we observe the various industries within a given national system, we see that the lead in development shifts from one branch to another. The main reason for this shift seems to be that a rapidly developing industry does not continue its vigorous growth indefinitely, but slackens its pace after a time, and is overtaken by industries whose period of rapid development comes later. Within any country we observe a succession of different branches of activity leading the process of development, and in each mature industry we notice a conspicuous slackening in the rate of increase. For example, the vigorous development of copper mining during the years 1880-1900 in the United States did not continue unabated, nor did that of steel after 1870-1900, nor railroad construction after 1830-1880. . . .

In many industries there comes a time when the basic technical conditions are revolutionized. When such a fundamental change takes place, a new era begins. In the manufacturing industries it is frequently the period when the machine process first supplants hand labour to a substantial extent. In the extractive industries, it is either the moment when the sources and use of a commodity are discovered (petroleum) or when a new and wide application is found for a commodity hitherto but little used. As concrete examples of such periods, one may mention the decade 1780-90 for the cotton industry and pig iron production in Great Britain, the decade of 1860-70 for steel, the decade of the '80s for the copper industry, the decade of the '30s for anthracite, and of the '40s for bituminous coal in the United States, the first and second decades of the nineteenth century for zinc smelting (Belgium-Saxony), the '60s for petroleum (United States), and the decade of the '70s for lead (United States). In all these cases we observe a revolutionary invention or discovery applied to the industrial process which becomes the chief method of production. Our generation has been the eye-witness of such changes in the automobile and radio industries.

But these powerful insights—linking the introduction of new technologies and the national paths of output—have not been pursued by Kuznets and those who have followed his lead. Because of the Keynesian revolution, the generation on an international basis of national income and investment data, and the way the international community has chosen to organize data on output (influenced,

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perhaps, by Colin Clark's pioneering efforts), the statistician has faced a temptation and a dilemma. The temptation has been to plunge in and exploit the data that are easily accessible and capable of organization for purposes of international comparison. The dilemma is that these data do not easily permit statistical analysts, on an international basis, to get hold of the sectors and sub-sectors where the new technologies actually come in and from which their spreading effects are generated; for we all agree that modern growth is rooted in the progressive diffusion of new technologies on an efficient basis. The analytic task is generally quite possible on a national basis, especially if the analyst is prepared to use incomplete time series and non-statistical data. But one cannot easily generate at this level of disaggregation a statistical base that permits elegant international cross-comparisons, especially for the historical past.

I would not question another man's decision about his research priorities and strategy; and we are all ardent consumers of the aggregative data on growth mobilized by Kuznets. But I do regret that the early Kuznets insights were lost sight of for a time. (They were, incidentally, shared in the early 1930's by Walther Hoffmann and Arthur F. Burns.) And, as Appendix B tries to make clear, I believe they are in the process of re-emerging from both historical and contemporary studies, statistical and non-statistical; for example, something like the sequence of key sectoral complexes arises from Hollis B. Chenery and Lance Taylor's 'Development Patterns: Among Countries and Over Time', *The Review of Economics and Statistics*, November 1968, pp. 405-12. Because this process of linking the aggregates and sectoral analysis is well under way—in statistical as well as national analyses of growth—we are, I believe, moving closer together on this central issue. Therefore, Appendix B is not a polemical document but an effort to find common ground and to narrow, rather than widen, differences of view.

I would, however, reaffirm what I have said before: Without appropriate disaggregation the study of growth is *Hamlet* without the Prince, or playing the piano while wearing mittens. We certainly need the large aggregates; and we are all greatly in the debt of Clark, Kuznets, Chenery, and others who have analysed patterns in these aggregates. But, as an historian and student of growth in the

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contemporary nations, rich and poor, I am confident that we have much unfinished business ahead in relating them in an orderly way to the sectors where the critical linkage of technology and production occurs so that the analysis of modern growth can become, in Warren Weaver's phrase, a field of 'organized complexity'.

In retrospect, I believe this point should have been put more strongly in the first edition of *The Stages of Economic Growth*. Because it was proportioned as a small book, I confined the statement of the problem to some four pages at the close of chapter 2 entitled 'A Dynamic Theory of Production'. I made footnote reference to my earlier work on the role of sectoral analysis in the study of growth, on which this passage was based: *The Process of Economic Growth* (Oxford, 1953 and 1960); and 'Trends in the Allocation of Resources in Secular Growth', chapter 15 of *Economic Progress*, ed. Leon H. Dupriez, with the assistance of Douglas C. Hague (Louvain, 1955). Evidently, this did not suffice to force the issue with clarity; but I am not sure that anything short of grinding, protracted debate would have forced clarification, given the intellectual interests and resistances at stake.

One reason for the resistance to the stages approach is that it denies the statistical analyst the easy use, in good conscience, of GNP per capita as a measure of growth. If the degree of efficient absorption of technologies is taken as a basic measure of growth (as it should be), one can have relatively rich and relatively poor countries at the same stage of growth, depending on population/resource balances, export capabilities, tourism, foreign aid, etc. Argentina, for example, was a much richer country in take-off than India; Canada than Russia. Moreover, because high mass-consumption depends on income per capita (and the income elasticity of demand), one can have nations moving into that stage before they have absorbed fully and efficiently the technologies that go with their versions of technological maturity; e.g. Australia, Canada, and, at the extreme margin, Kuwait.

It would have been considerably easier for all of us if GNP per capita (or some equivalent measure of income) could have been used to define the stages of growth. And there are, as Appendix B indicates, rough average patterns in societies that go with such measures.

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But without piercing the veil of these averages and getting at the extent to which technologies are absorbed efficiently in particular cases, we are using a blunt tool and emerging with sometimes misleading results.

In any case, everything I have learned about growth over the past decade convinces me that the underlying sectoral, disaggregated approach to growth incorporated in *The Stages* is sound. And a high proportion of the debate about *The Stages* centres about this matter, which is pursued, along with other aspects of the debate, in Appendix B.

II

A second factor has led me to confine the revision of *The Stages* to this Preface and Appendix B. This book is both a scientific effort and a tract for the times. Writing in the late 1950's, I brought the tools it incorporates to bear on a number of quite specific questions which concerned a good many of us at that time:

What were the problems and possibilities for America (and other foreseeably rich nations) beyond high mass-consumption?

What were the prospects for growth in the Soviet Union and the meaning of relative U.S.-U.S.S.R. growth rates?

What were the prospects for U.S.-U.S.S.R. relations, as the march of the stages of growth forced a partial diffusion of power away from Washington and Moscow?

What were the prospects for moving from Cold War to stable peace in this world of diffusing power?

What were the prospects in the southern developing regions of the world; how did they relate to the prospects for peace; and what ought we, in the developed north, do to help them?

In assessing whether the portions of the text dealing with these matters should now be revised, I put two questions: In retrospect, were the analyses of these questions faulty? How have these issues changed, in their shape and content, over the past decade?

I did not go far in speculating about life beyond high mass-consumption, except to raise a number of questions that men, societies, and governments would have to answer as they turned to

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explore new frontiers (pp. 11-12, 90-2, 156). Aside from posing the questions, the fundamental contribution of the argument on this point was to assert that the automobile-durable consumers' goods-suburbia sectoral complex had lost in the 1950's the capacity to drive forward American growth. A decade later, this point is now, I believe, quite clear. (Incidentally, the emphasis given in those passages to the postwar rise in the American birth rate was belied, to a degree, by its decline in the 1960's.)

As for the Soviet growth rate, sectoral analysis (pp. 102-3) proved helpful; and the warning—"beware of linear projections"—germane. As predicted—and the prediction was controversial at the time—the Soviet growth rate decelerated in the 1960's. The issue of whether, how, and at what pace the U.S.S.R. should move forward into the automobile-durable consumers' goods complex did become a central question of policy in Moscow, symbolized by the decision to install the Fiat plant in the Soviet Union.

The predicted diffusion of power away from Washington and Moscow did occur in the 1960's—with the Cuba missile crisis and its outcome (and the related exacerbation of the Sino-Soviet split) an historical watershed. The United States and the Soviet Union moved to limit the scope of this diffusion through the non-proliferation treaty which, in turn, enforced certain constraints on the two major nuclear powers, which will have to be honoured if nuclear proliferation is to be confined to its present amply dangerous limits.

At certain points the diffusion of power moved Moscow and Washington into parallelism (e.g., the India-Pakistan war of 1965) and encouraged limited movement towards normalization of U.S.-Soviet relations. But dangerous cross-purposes remained in South-east Asia and the Middle East. The 1960's did not see an end to the Cold War, although it clearly saw a transitional process away from its rather simple pattern in, say, the time of Stalin.

Finally, the world political community did respond to a significant degree in the 1960's to the challenge of development in the southern regions of the world, yielding the India-Pakistan consortia, the Alliance for Progress, and the broad concept of *The Decade of Development*. By no means all developing nations achieved self-sustained growth in the 1960's or, even, moved into take-off. But

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progress was sufficient, in each of the developing regions, to demonstrate that the job could be done if birth rates could be brought down and adequate support sustained from the more advanced nations. In every region there are now examples of rapid and quite regular economic and social progress conducted in loyalty to national cultures, in an environment of political independence, geared to nationally defined ambitions. But as the Pearson Report (*Partners in Development*, 1969) and other studies suggest, the task is incomplete; and the development agenda for the 1970's remains formidable.

Without in any way claiming omniscience, I believe the insights into the contemporary world flowing from the stages of growth in the late 1950's did not prove misleading; but, evidently, a decade and more later we know more than we did then, and there is a great deal more to be said about these issues.

My contribution to their further analysis, as of 1970, is incorporated in another book, *Politics and the Stages of Growth*.

Immediately upon completing *The Stages of Economic Growth*, early in 1959, I decided to elaborate its political dimensions. I had long been interested in the interweaving of politics and economics, but had consciously limited the treatment of politics in this book. As I stated in the Preface to the first edition, I regarded this book as 'both a theory about economic growth and a more general, if still highly partial, theory about modern history as a whole'. With the publication of *Politics and the Stages of Growth*, I have tried to widen the perspective I can contribute to modern history as a whole.

For these reasons, then, chapters 6-10 are left to stand as written; and the reader, if interested, will have to turn elsewhere for the observations I would now make on the subject-matter of those chapters.

AUSTIN, TEXAS
June 1970

W. W. ROSTOW

PREFACE TO THE FIRST EDITION

This book is the product of both a highly spontaneous and a highly protracted effort.

Proximately, it derives from a set of lectures prepared and delivered at Cambridge University in the autumn of 1958. While there on sabbatical leave from M.I.T., I was invited by the Faculty of Economics and Politics to present views on 'The Process of Industrialization' to an undergraduate audience. This book emerged directly from the effort to respond to that invitation, bearing still the marks of the occasion in its informality and non-technical character.

On the other hand the book fulfils, at least *ad interim*, a decision made when I was an undergraduate at Yale, in the mid-1930's. At that time I decided to work professionally on two problems: the relatively narrow problem of bringing modern economic theory to bear on economic history; and the broader problem of relating economic to social and political forces, in the workings of whole societies. As a student and teacher these two questions have engaged me ever since.

Specifically, I found Marx's solution to the problem of linking economic and non-economic behaviour—and the solutions of others who had grappled with it—unsatisfactory, without then feeling prepared to offer an alternative. Over the intervening years I explored facets of the relationship: in work on Britain of the nineteenth century; in teaching American history at Oxford and Cambridge; in studies of modern Russia, China, and the United States; and in elaborating general views on the process of economic growth. In addition, the experience of working from time to time on problems of military and foreign policy added some illumination. This book unifies what I have thus far learned about the central problem from all these directions.

The views presented here might have been elaborated, in a more conventional treatise, at greater length, in greater detail, and with greater professional refinement. But there may be some virtue in

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articulating new ideas briefly and simply to an intelligent non-professional audience. There are devices of obscurity and diversionary temptations that are denied the teacher of undergraduates. In any case, I owe a real debt to the lively and challenging students at Cambridge who came to hear the lectures, and whose response gave the enterprise an authentic air of intellectual adventure.

Chapter 4 is substantially reprinted, with excisions, from 'The Take-off into Self-Sustained Growth', published in the *Economic Journal*, March 1956, and here included with the kind permission of the editors.

I am in the debt of others as well, in Cambridge and beyond, who commented on this set of ideas. I should wish to thank, in particular, Lawrence Barss, Kenneth Berrill, Denis Brogan, Richard Goodwin, Richard Hofstadter, Richard Kahn, Albert Kervyn, W. J. Macpherson, Gunnar Myrdal, M. M. Postan, E. A. Radice, C. Raphael, Sir Dennis Robertson, Joan Robinson, George Rosen, P. N. Rosenstein-Rodan, Arthur Schlesinger, Sr, Charles Wilson, and the staff of *The Economist* for observations which, whether wholly accepted or not, proved extremely helpful.

I owe a quite specific and substantial debt to my wife, Elspeth Davies Rostow. While I was working in the summer of 1957 on a study of recent American military and foreign policy, she insisted that it was necessary to bring to bear the insights that economic history might afford. It was directly from that injunction, and from the protracted dialogue that followed, that the full sequence of stages-of-growth first fell into place, as well as certain of the contemporary applications here developed in chapters 7-9.

A longer-term and more diffuse debt is owed to my colleagues at M.I.T., who generously commented on various segments of this argument as they were formulated and, notably, to the students in my graduate seminar in economic history since 1950, who actively shared in the creation of this structure of thought.

The preparation of this book was rendered both pleasant and easy by the facilities made available to me by the Faculty of Economics and Politics at Cambridge and those who run the Marshall Library. Their willingness to assist a transient teacher, in the midst of their urgent responsibilities, was memorable.

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The charts in chapter 6, illustrating the diffusion of the private automobile, and the supporting data presented in the Appendix, are the work of John Longden, who most generously turned from his own work to help dramatize that portion of the argument.

Finally, I would wish to thank those at M.I.T. who granted me a sabbatical year, and the Carnegie Corporation, which offered the freedom and resources of a Reflective Year Grant. It is not easy, in contemporary academic life, to find a setting where one can concentrate one's attention wholly on the elaboration of a single line of thought.

W. W. ROSTOW

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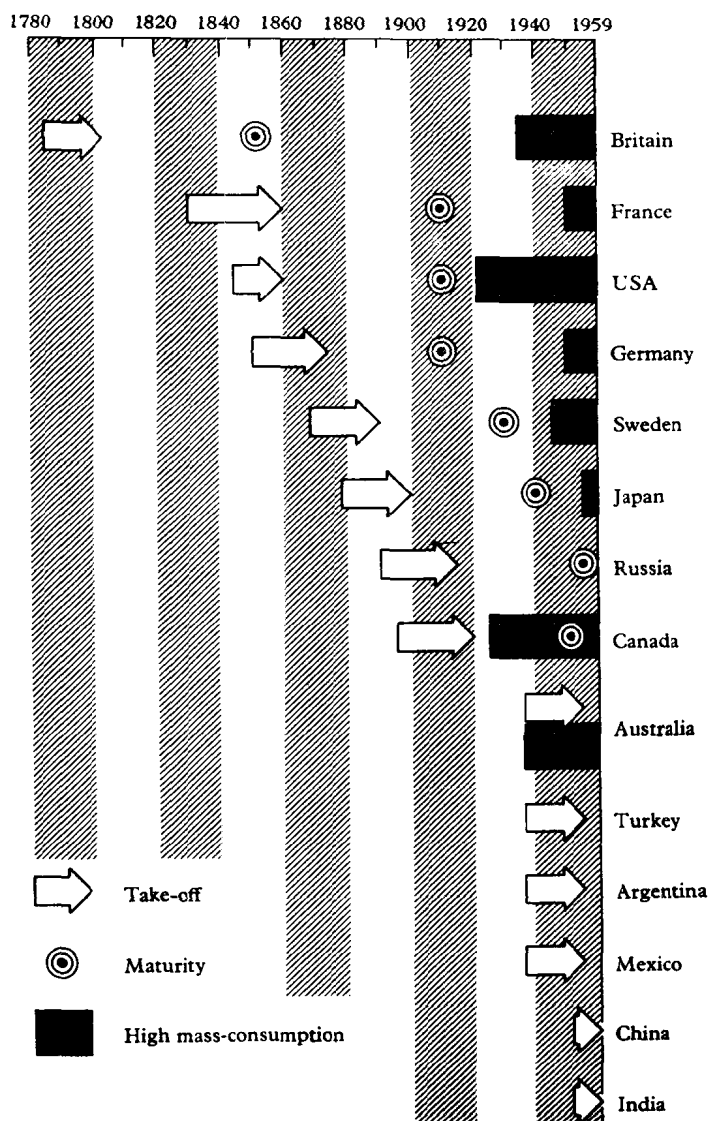


Chart of the stages of economic growth in selected countries. Note that Canada and Australia have entered the stage of high mass-consumption before reaching maturity. [By courtesy of the *Economist*.]

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