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978-0-521-80008-2 - Productivity Growth, Inflation, and Unemployment: The

Collected Essays of Robert J. Gordon

Robert J. Gordon

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Productivity Growth, Inflation, and Unemployment

This unique collection of seventeen pathbreaking essays treats the three core topics of macroeconomics – economic growth, inflation, and unemployment. In all three topic areas, the essays have established the context of macroeconomic discussions, including the author's early skepticism that the New Economy and Internet warranted the hype and overblown stock market valuations of the late 1990s, his reinterpretation of the roles of capital accumulation and technological change in economic growth, his reinvention of Keynesian macroeconomics as the interplay of shocks not just to aggregate demand but also to aggregate supply, and his symmetric explanation of why inflation and unemployment were so high in the 1970s and so low in the late 1990s. This collection is unique not only in the importance of its topics and conclusions, but in the novelty of its five newly written introductions, one for the entire book and four new introductions to the separate parts of the book. Each introduction goes beyond summarizing the contribution of the individual essays, setting them in the context of past and current macroeconomic debates and tracing the origins of the ideas and their subsequent evolution. The collection contains three previously unpublished essays on technology and productivity that gain new relevance in today's economy. The foreword by Nobel Laureate Robert M. Solow comments on the abiding importance of these essays for the three core topics of macroeconomics.

Robert J. Gordon is Stanley G. Harris Professor in the Social Sciences and Professor of Economics at Northwestern University. He is one of the world's leading experts on the causes and consequences of inflation, unemployment, and productivity growth, among other topics in macroeconomics. Professor Gordon is the author and editor of numerous books, including the ninth edition of *Macroeconomics* (2003), *The Economics of New Goods* (1997), *The Measurement of Durable Goods Prices* (1990), and *The American Business Cycle* (1986). For more than twenty-five years, Professor Gordon has been a research associate of the National Bureau of Economic Research and a Fellow of the Centre for Economic Policy Research in London. A Guggenheim Fellow, Fellow of the American Academy of Arts and Sciences, Fellow and Treasurer of the Econometric Society, and a senior adviser to the Brookings Panel of Econometric Activity, Professor Gordon has also served as coeditor of the *Journal of Political Economy* and as an elected member of the executive committee of the American Economic Association.

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Productivity Growth, Inflation, and Unemployment

The Collected Essays of Robert J. Gordon

ROBERT J. GORDON

Northwestern University

With a Foreword by ROBERT M. SOLOW



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To the Memory of

Zvi Griliches,

1930-99

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Foreword

Robert M. Solow

An Attentive and Thoughtful Reader (called ATR from now on) will learn an enormous amount from this book about the interactions among productivity, unemployment, and inflation in the contemporary American economy. There are no more important topics within economics and not many outside of economics either. These seventeen chapters do not contain sweet nothings.

On many of today's (and tomorrow's) headline issues, ATR will have been brought to the exploratory frontier of active research. By definition, nothing at the research frontier is settled. Every conclusion is debatable (and in macroeconomics, where a lot is at stake, every conclusion is debated).

As early as Chapter One, for instance, ATR will learn many of the ins and outs involved in evaluating the belief that we now live in a "new economy," with a dramatically faster sustainable rate of increase of (total factor) productivity than before, mostly induced by the advent of the computer and information technology. Bob Gordon counts as a skeptic on the new economy. I do not mean a skeptic as compared with the hype that suffuses the trade press and the media. Any reasonable person would be a skeptic in that context. I mean that his estimate of the sustainable long-run growth rate of productivity, net of important cyclical and temporary factors, is near the low end among serious students of the theory and data of productivity growth. What I hope ATR will come to understand is that where one comes out on this issue depends not on native optimism or pessimism, but on such technical matters as the right way to allow for the fairly well understood fact that the pattern of year-to-year productivity growth is related to the stage of the business cycle. It is this kind of connection between technical analysis and the big picture that makes macroeconomics so fascinating; and Gordon is a master of just that conjunction, as ATR will discover.

To take a quite different example, the nature – even the existence – of a tradeoff between unemployment and inflation has been fought over by economists for almost fifty years, as if it were a disputed territory like Alsace–Lorraine, sometimes occupied by one side, sometimes by the other. Gordon has been actively engaged in that debate at least since the "stagflation" that followed the first OPEC (Organization of Petroleum Exporting Countries)

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oil shock of 1973–4. One of his distinctive contributions goes back to that episode.

The standard way to deal with the unemployment-inflation nexus had been to relate unemployment to wage inflation through a wage equation (or Phillips curve) and then to relate wage inflation to price inflation through a price equation, most often a mark-up on unit labor cost. After OPEC, there was serious need for a convenient way to allow for a variety of supply shocks. Gordon found it useful to collapse the wage and price equations into a single flexible reduced-form equation for price inflation, with niches for demand shocks, supply shocks, and the forces of inertia. In this context, the “Okun gap,” the ratio of real GDP to potential GDP, replaced the unemployment rate as a comprehensive measure of demand pressure. All this is spelled out in Parts Three and Four, and in the introductory essays, along with much else.

In the course of attending and thinking, ATR will also pick up many clues about the right way to do macroeconomics. In Gordon’s implicit view – or am I putting words in his mouth? – macroeconomics is a fundamentally pragmatic branch of economics, closely tied to everyday observation. Its relation to microeconomics is subtle, not simple. One would not want to rely on a relation between aggregates – even an apparently reliable one – that could not reasonably arise from interactions among individual agents. But price and quantity decisions are made by millions of producers, sellers, and buyers, all reacting as intelligently as they can to an environment that is not at all transparent. Gradual wage and price adjustment is a rational response in those circumstances, not some sort of abject foolishness.

So one would not wish to push the search for “microfoundations” of macroeconomics in the wrong direction. It would be too easy to fall into the trap of settling on inappropriate microeconomic assumptions for no better reason than that they are tidy and aggregate neatly. A consequence of a concern for microeconomic realism is that macroeconomics is not monolithic. Different models may be useful for different problems. There is, of course, an opposed view, possibly more popular among the elite, that there can be only one right model, and all of macroeconomics consists of minor variations on that theme. It appears from these essays that Gordon thinks that the monolithic view will not work, and I agree with him.

Bob Gordon was a graduate student at the Massachusetts Institute of Technology (MIT) in the mid-1960s. He was part of a magnificent cohort of supremely able and delightful students. I taught and advised many of them. To say that it was a privilege and a pleasure is like saying that the Mississippi is a river. One enterprising economics department tried (and failed) to hire six of them at job-market time. That would have been like having the first six picks in the National Basketball Association (NBA) draft. Those students, now grown up, are still my friends. To be able to introduce this book merely extends the pleasure of thirty-five years ago. ATR should only have such luck.

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Preface

This book is the idea of Scott Parris, economics editor in the United States for Cambridge University Press. Scott was infinitely patient, waiting for several years before the appearance of a mere outline of chapters, and then two more years before the introductions were written and submitted. Throughout, I have valued his cautionary advice about keeping the book to modest size and about what kinds of articles to include and exclude.

My greatest debt is to the sponsor of this research over a period of more than 30 years dating back to 1971, the National Science Foundation. I am very grateful to the late James Blackman, director of the Economics Program at the NSF from 1967 to 1980, both for support of my research and for inviting me to participate in the peer-review process as a member of the NSF economics panel during the period 1973–76. Since 1980, the NSF economics program has been co-directed with a sure hand by Dan Newlon and, until recently, Lynn Pollnow. I am especially grateful to Dan for frequent consultation and advice on the direction and progress of my research. The successive NSF grants have made possible the support of several generations of graduate and undergraduate research assistants at Northwestern University, some of whom are acknowledged in the initial footnotes of the chapters in this book, and many more of whom worked on papers that could not be included within the space constraints of this book.

Throughout the three decades spanned by these papers, my primary intellectual inspiration has been Zvi Griliches, who was instrumental in hiring me for my first academic job at the University of Chicago and thereafter was my mentor and adviser, especially on the productivity research included here as Part One. The invention of e-mail converted our relationship into a personal friendship, and I was privileged in 1995–6 to serve as his colleague on the Boskin Commission that evaluated the Consumer Price Index (CPI). Zvi was a tough taskmaster and continually kept my eyes on the large issues and dissuaded me, with only partial success, from frittering my time away on minor and ephemeral projects.

While Zvi was my mentor on the papers about productivity contained in Part One of this book, the late Arthur Okun played an equally important role in setting the stage for the papers in Part Three. It was Okun's inspiration, in speeches

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and informal remarks during 1974, to develop the concept of “macroeconomic externalities” of supply shocks, and Chapter 10 of this volume was the first paper to formalize an idea that is properly attributed to Okun rather than to me. Throughout the period from 1970 to 1980, when he tragically died at a young age, Okun was the inventor of the Brookings Papers on Economic Activity (BPEA) and the inspiration of many ideas about macroeconomics. His colleague throughout that period in organizing BPEA, continuing until this day, has been George Perry, who has also provided many ideas related to Part Four of this book, and who, with Okun’s successor William Brainard, has continued to provide me with frequent opportunities to publish papers on empirical macroeconomics.

Bob Solow was my hero as soon as I learned his name while at Oxford in 1962–4, when I was twenty-three and he was thirty-nine. I used to flip through the handwritten cards at the Oxford Bodleian library to gaze in wonderment at his incredible set of publications, seemingly a hit every six months and a home run every year or two. Luck allowed me to join the entering economics class at MIT in the fall of 1964 and take Bob Solow’s famous course in growth theory. Then, more luck when he agreed to be my Ph.D. thesis supervisor despite the dry measurement issues tackled in my dissertation. Over the years, he has written trenchant comments and criticisms of several papers, as if I were still in the classroom, and I can only express my thanks that he was willing to provide the foreword to this volume.

On a separate and slightly irreverent note, Chapter One of this book reveals me to be a skeptic of the Internet as an invention, a mere pipsqueak in comparison with electricity and the internal combustion engine. There is a bit of personal hypocrisy in that role, since my professional and personal lives have been altered completely, in an unambiguously positive direction, by e-mail (just e-mail and its attachments, not the web itself). Bob Solow gives hope to the skeptic. He proudly announces to one and all that “I have neither sent nor received a single e-mail message.” His chief technological advance over the past decade, as he reluctantly admits, is to move from writing on an old Olivetti typewriter to a personal computer using Wordperfect 5.1. (I tried to tell him, to no avail, that Wordperfect 6.0 for DOS, vintage 1992, was the ultimate development of word processing.)

Somewhat more advanced in the information revolution than Bob Solow is my wife Julie, who is swamped by personal and professional e-mail every day and uses modern Microsoft software in her role as Executive Director of the Econometric Society. My deepest thanks go to her for nagging me to move other projects aside to finish this book. I am grateful as well to her for understanding why, night after night, it was necessary for me to stay up late and write the long introductions that, I hope, will make this volume of more than usual interest.

Robert J. Gordon
Evanston, Illinois
September 2003