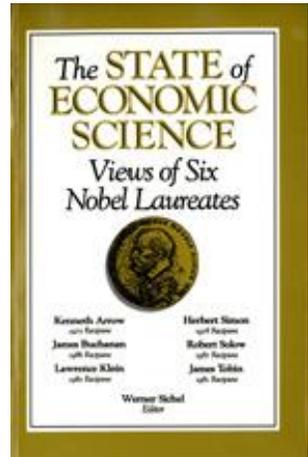

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Introduction

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Introduction

Each year the President of the United States presents a “State of the Union” message. In it the President outlines accomplishments and challenges. While not completely analogous, we believe that the same approach, perhaps not on an annual basis, is appropriate with regard to a discipline. Economics is a particularly good candidate. It is a discipline very often maligned (“If you would lay economists end to end, they still wouldn’t reach a conclusion.”) yet simultaneously held in high esteem and accorded respect, as evidenced by how frequently economists are requested to advise government officials or business executives and how often they are sought for interviews on radio and TV and for writing opinion columns and editorials in newspapers and magazines.

What is the state of economic science as we begin the 1990s? Obviously, this is a normative question. It involves a value judgment. Whom shall we ask? Many people have an opinion. But who can provide the most authoritative answers? We believe that the respondents must be professional economists—practitioners rather than just observers. And who among economists? We suggest that they should be economists in

that small select group who have been honored by being chosen to receive the top prize in economics—Nobel Laureates in economics.

The Alfred Nobel Memorial Prize in Economics is a “Johnny-come-lately.” It was added nearly 70 years after the prizes in chemistry, literature, medicine or physiology, peace, and physics. The first one, shared by Ragnar Frisch of Norway and Jan Tinbergen of the Netherlands, was awarded in 1969. To date, only 26 economists have received the award. Fifteen of these were Americans. According to the rules established by the Central Bank of Sweden, the benefactor of the economics award, “The Prize shall be awarded annually to a person who has carried out a work in economic science of the eminent significance expressed in the Will of Alfred Nobel.”

Having come to the conclusion that we wanted Nobel Laureate economists to present State of Economic Science messages, our next task was to attract six of them to do so. For pragmatic reasons, we limited our invitations to Americans. We were delighted with the results. Our invitations were graciously accepted by Kenneth J. Arrow, Robert M. Solow, Lawrence R. Klein, James Tobin, James M. Buchanan, and Herbert A. Simon. We believe they are an outstanding group, not only because of their eminence, but also because they provide a good representation of the spectrum of economic thought.

As most readers will correctly predict, the essays by Robert Solow, Lawrence Klein and James Tobin address the state of macroeconomics, while Kenneth Arrow, James Buchanan and Herbert Simon make more of an attempt to cover all of economics.

Kenneth J. Arrow, the recipient of the 1972 Nobel Prize in Economics, has for the past 35 years focused on and made major contributions to the theories of individual and social choice and general economic equilibrium. As the first speaker in the series and author of the first essay in this volume, he devotes some space to his perception of what economics is and does—studying the relation between the individual and the system as it pertains to exchange and the transformation of resources and products.

Arrow enumerates what he considers to be the three most significant developments in economics during the last 50 years: (1) the greater

recognition of the importance of the time dimension in economic behavior; (2) the related appreciation of the need to study human behavior under conditions of uncertainty; and (3) the understanding that information and knowledge are significant economic variables.

According to Arrow, economic science now recognizes that a different set of expectations (whether rational or not) about the future leads to a different present world, but he laments that as yet there are few markets established for future purchases and sales. Economic science has introduced uncertainty—a consequence of being concerned about the future—into its theories. This has strengthened the concept of rationality because it tells us more about the economic behavior of actors to whom economists assign probability distributions to possible outcomes. Arrow, who defines “information” as any observation that changes a person’s probability judgment, points out that economists must concern themselves with the consequences of informational inequalities.

Arrow sides with fellow Nobel Laureate, Herbert Simon (the final speaker in this series), in his admiration for the work of cognitive psychologists who have studied the abilities of humans to make rational choices. Arrow sees value for economics in their findings of systematic biases of a nonrational nature stemming from overconfidence, framing, and exaggerated response to information. He closes on the note that economic science, with the support of psychology and of computer science, faces the challenge of knowing better “how we come to acquire knowledge and form beliefs and how we act and can act on that knowledge.”

The second essay is by Robert M. Solow, a much more recent (1987) recipient of the Nobel Prize. He is best known for his development of the theoretical foundation as well as the empirical measurement and estimation of the effect of technological change on output.

Solow asserts that “macroeconomics is what it is all about”—a view clearly shared by Klein and Tobin, whose essays follow. Solow provides an excellent historical review of macroeconomic thought, beginning with pre-Keynes business cycle theory and ending with new-classical theory on the one hand and with what he calls new American-Keynesian theory on the other. In between, of course, came the contributions by

Keynes himself, as well as those by monetarists, expectationists, and supply-siders.

In Solow's view, the new-classical approach of "grounding macroeconomic models in complete individual-agent-based microeconomic theory . . . has been a blind alley in practice . . ." with "no great empirical or predictive successes." Instead, he believes, economists ought to study the "macro foundations of microeconomics." (Buchanan—the author of the fifth essay in this volume—would take issue with that.) Solow finds that at least one group of new-Keynesians is making progress in this direction. This group places emphasis on imperfect competition, increasing returns to scale and trading externalities and concludes that the economy may be capable of *many* "self-sustaining equilibria" rather than just a single price-mediated market-clearing equilibrium. Solow sees macroeconomic science as in a state not yet fit for empirical application, but one where some economists are at least seeking to find the mechanisms that cause the economic system to malfunction. If they succeed, it may then be possible to formulate policies that would be beneficial. He opposes what he perceives to be the new-classical view—that the market failures in question are "mere aberrations" of the system. Solow maintains that they indeed *are* the system. What's wrong, Solow asks, with having a number of useful little models in the macroeconomist's arsenal and then choosing the relevant one for the particular condition that the economy is in? That is, of course, a rhetorical question. That is the sort of macroeconomic development to which he looks forward.

The third essay is written by Lawrence R. Klein, recipient of the 1980 Nobel Prize. He is the founder of Wharton Econometric Forecasting Associates and has long been considered the chief architect of the large econometric forecasting model.

Klein discusses the state of economic science as it pertains to his specialty, macroeconometrics—"the use of econometrics for the study of the macroeconomy." Klein's views concerning the history of macroeconomics—the contributions made by the various schools of thought and what has worked and what has not—differ little from those of Solow. Klein too recognizes Keynes as the great innovator, but admits

that the Keynesian model has benefited from later contributors who have helped beef up the supply side and the financial sector. Monetarism, in his view, has not passed the econometric test. And as concerns the new classical macroeconomics, he acknowledges that macro theory may be constructed as a system built upon an aggregation of microeconomic relationships, but insists that macro relationships have “a life of their own” and can be specified directly. Once they are, data can be applied, the system can be estimated, and it can be used for policy analysis.

Klein disapproves of what he sees as a trend toward using smaller—more compact and simplified—econometric models. Instead of using “the smallest system that is capable of explaining the facts of life,” he favors using “the largest system that can be managed.”

Klein acknowledges that forecasting is difficult, but contends that it cannot and should not be avoided. Reaction is too slow to be effective. He is somewhat optimistic that macroeconomic forecasting will improve—but does not anticipate much help from those who rely on own-generated expectations. He sees the most promise in the use of “high-frequency” data to help adjust quarterly econometric models.

Klein ends his essay on the state of macroeconometrics on a mixed note. On the one hand, he is gratified to see some models, particularly the two-gap model, employed successfully in a number of centrally planned and/or developing economies. On the other hand, he sees no major breakthroughs “in the vast volume of research material that is being published” and finds that what is most popular with today’s bright young scholars is really quite sterile.

The fourth essay is by James Tobin, recipient of the 1981 Nobel Prize in Economics. During the past 45 years, Tobin has focused on and made major contributions in the fields of macroeconomic theory, monetary theory and policy, portfolio theory, economic growth, and consumer behavior.

Tobin is very much in the same camp as Solow and Klein. He too is only interested in discussing the state of macroeconomics and concludes that Keynes is really not vulnerable to the attacks by the new-classicals who appear to prefer to deal with a caricature of the Keynesian theory of business fluctuations than with what Keynes actually professed and wrote.

Tobin focuses on what he calls the fundamental issue in macroeconomics—“the existence, reliability, strength, and speed of adjustments by which a market economy maintains or restores economywide equilibrium” between the supply and demand for labor and what it produces. He explains that Keynes did not assume wage rigidity, but rather only that workers are concerned with relative wage parity. They very much resist nominal wage cuts, but are willing to accept real wage cuts in the form of price increases.

Furthermore, Tobin argues that contemporary “anti-Keynesian ‘New-Classical’ counterrevolutionaries” do not understand that even if wages and prices were flexible, there would still be unemployment in the presence of inadequate real demand. Flexible prices do not fully absorb demand shocks instantaneously.

Tobin is concerned that the new-classicals have made macroeconomics a “babble of parables” and that their stories in many respects do not resemble the real world. He considers microeconomics to be “a framework of analysis” rather than “a source of specific conclusions about the signs and magnitudes of relationships among economic variables.” Tobin, perhaps more than any of the other contributors to this volume, observes a worrisome state of macroeconomic science: “There is a big gulf between academic macroeconomics and the macroeconomics oriented to contemporary events and policies.”

The fifth essay in this volume is contributed by James M. Buchanan, the 1986 recipient of the Nobel Prize. He is the modern developer of the theory of public choice and has made major contributions to the development of the contractual and constitutional bases for the theory of political decisionmaking and public economics.

Buchanan’s essay differs from all the others in this volume, but most especially from the three (Solow, Klein, Tobin) that precede it. Not only does Buchanan not address the state of macroeconomic science, he asserts that there is no place for macroeconomics, either as a part of positive or normative economics. He considers Keynesian-inspired macroeconomics to be a “monumental misdirection of scientific effort” since it largely ignores the structure of the economy. In many respects, Buchanan also disagrees with Arrow because Buchanan rejects the

commonly used methodology of maximizing objective functions subject to particular constraints. He believes that economists have been wasting their time focusing on scarcity, choice and value maximization. Buchanan also does not share many of Simon's ideas, but there does appear to be one important commonality between the two—both consider themselves “outsider” economists. In fact, one gets the impression that they enjoy that status.

Buchanan characterizes himself as a methodological and normative individualist, a radical subjectivist, a contractarian, and a constitutionalist. He views the economy as an order—a constitutional order. Thus he sees voluntary exchange as mutually utility-enhancing, since it is based upon agreement between the parties engaged in the exchange. Furthermore, he contends that, as an order, the economy enables performance to be evaluated in terms of results that are conceptually a part of the behavior of individuals acting within the order itself.

The state of economic science is not to Buchanan's liking. He would prefer to see economics (as a social science) concentrate on the topic of trade or exchange and the institutions that effect trade, such as contracts and “the whole realm of collective agreement on the constitutional rules of political society.”

The final essay in this volume is contributed by Herbert A. Simon, who received the Nobel Prize in 1978. During the past 30 years he has focused on decisionmaking and problemsolving processes, using computers to simulate human thinking.

Simon's essay deals with the state of the methodology employed in economic science. He perceives it to be in great need of reform and makes a number of important observations and concrete suggestions. Simon has no doubt about economics being a science. He believes that the profession's poor economic forecasting record is not an indication of its unscientific nature. He generalizes that one should be wary of using prediction as a test of science since an understanding of mechanisms does not guarantee predictability.

Simon observes that economists agree a great deal more than is apparent to the general public. After all, most economists subscribe to a central core of theory, and even more important, to a way of reasoning

about economic questions. The problem, he suggests, is that economists disagree about “auxiliary assumptions” concerning matters such as what information people have and how they deal with uncertainty. Simon strongly counsels that economists need to vigorously test their auxiliary hypotheses. He warns against “theory without measurement,” and urges economists to grub for facts, to worry less about predictability and more about whether their assumptions are correct (a view opposite to that presented by fellow Nobel Laureate Milton Friedman in his well-known 1953 essay, “The Methodology of Positive Economics”), and to work with less aggregated data so that there is a better fit between theory and data.

As noted earlier in this introduction, Simon and Arrow both contend that economists should pay closer attention to the work done by cognitive psychologists who have developed both (1) a large body of empirically tested theory about decisionmaking and problemsolving, and (2) some techniques that use computers to simulate complex human thought processes.

Simon recommends that economists conduct more laboratory experiments and field studies and, in that context, learn how to obtain data about beliefs, attitudes and expectations. He is fairly confident that the reform he calls for will be forthcoming since “the inability of economics today to play the policy role to which it aspires is a major source of pressure toward reform.”

In this introduction we have attempted to provide the reader with “coming attractions” that whet the appetite. Each of the six essays that follow deserves careful reading. While brief, this collection is packed with ideas and insights accumulated over many years by six of the most outstanding twentieth century scholars in economic science.