
What's Right with Economics?

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What's Right With Economics?

By WALTER W. HELLER*

I come here with no eye-opening report from the frontiers of economics, no stirring cry for reform of conventional economics, no closely reasoned analysis of an economic dilemma or puzzle, no scathing or reproachful scolding of the profession for its technical preciousness or moral blindness, no report on painstaking research results, no valedictory on a lifetime of theoretical or empirical contributions. The AEA presidential addresses have been all of these things.

But tonight, going against our current fashion of telling the world what's wrong with economics, I offer a modest contribution to the immodest subject of what's right with economics—and, in particular, what's right with economics as a guide to public policy. In doing so, I won't ignore the dark side of the moon—indeed, I can't, since I will deal at some length with the bedeviling subject of inflation. But believing that it is at least as reasonable to judge a discipline by its successes as by its failures, I intend to accentuate the positive.

I. The Critical Look Inward

In recent years, as I shall illustrate in a moment, we have instead accentuated the negative. In good part, this has taken the becoming form of *mea culpa* or rather

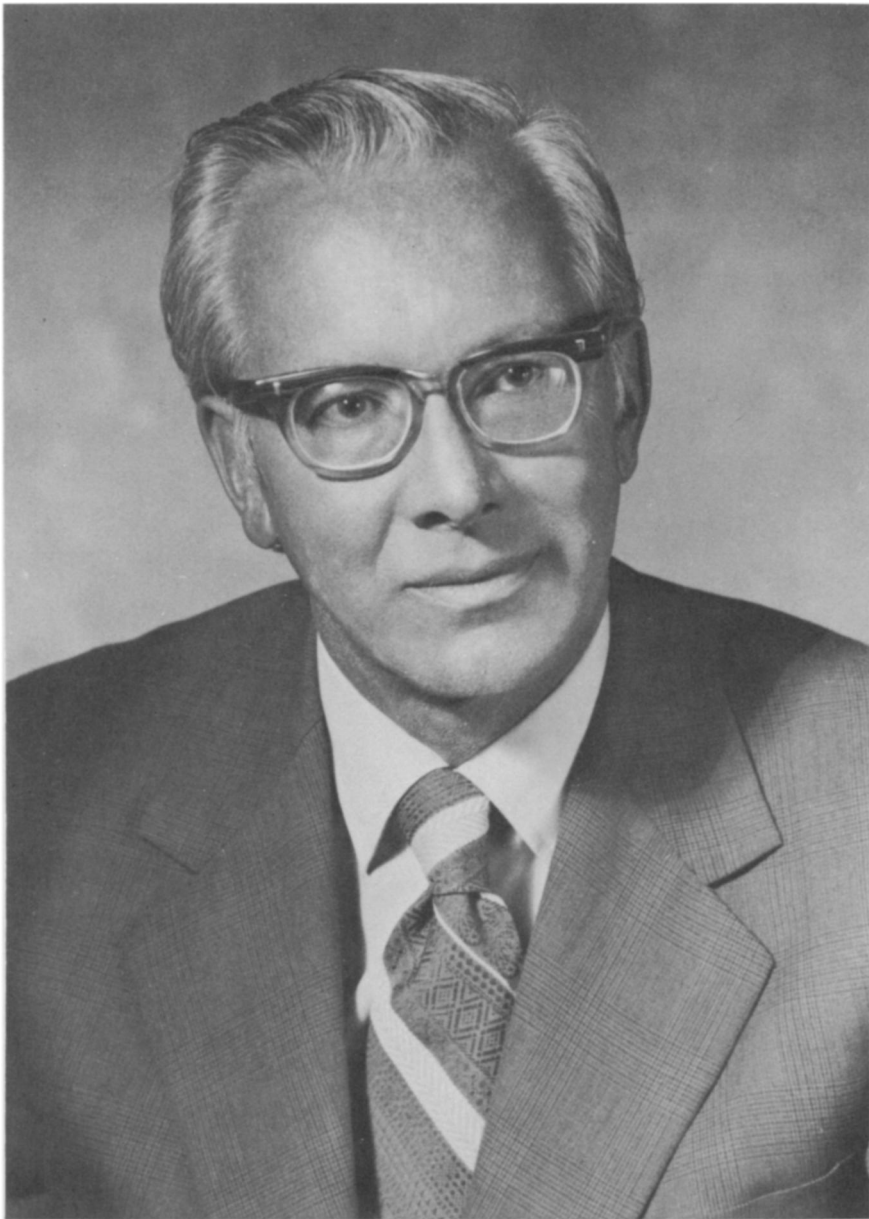
nostra culpa. We have, for example, readily confessed that the inflationary shocks of 1973–74 caught not just the economy but the economist by surprise. On this and other fronts, the chorus of self-criticism has risen to a new crescendo. It is almost as if we take pride in our humility. Nietzsche must have been thinking of economists when he observed that “he who despises himself nevertheless esteems himself as a self-despiser.”

This is not to imply that economists' criticisms are all self-inflicted wounds. Far from it. Often among our colleagues' favorite targets are the shortcomings of mainstream economics, the misuse of modern techniques, the fallacies of conventional wisdom—in each case, the target is not the critic's but his colleagues' brand of economics, not *mea culpa* but *eorum culpa*.

In any event, he who comes to praise economics risks being buried in the barrage of indictments that economists have brought against themselves and their brethren. Let me give you a sampling of some that will be ringing in my ears as I follow the parlous path of economic virtue.

Ceremonial occasions—presidential, memorial, or inaugural addresses—in particular seem to evoke musings on the troubled or even dismal state of our science. For the AEA faithful, I need only recall John Kenneth Galbraith condemning neoclassical and neo-Keynesian economics for ignoring power and thus losing contact with the real world; Wassily Leontief attacking mathematical economics for building a showy superstructure on weak empirical foundations and unverified assumptions, and thus losing contact with the real world; Kenneth

* Presidential address delivered at the eighty-seventh meeting of the American Economic Association, San Francisco, California, December 29, 1974. The address was abridged for oral delivery. I owe particular thanks for the many conversations I held with Francis Boddy, Otto Eckstein, Edward Foster, Arthur Okun, Joseph Pechman, George Perry, Robert Solow, and James Tobin. I also wish to thank Gardner Ackley, Kenneth Arrow, Walter P. Heller, John R. Meyer, Franco Modigliani, Alice Rivlin, Paul Samuelson, Charles Schultze, Christopher Sims, and George Stigler, for contributions to the adult education that underlies this address. The errors of course are mine.



Walter W. Miller

Number 76 of a series of photographs of past presidents of the Association

Boulding assailing welfare economics for its reliance on that holiest of holies, Pareto optimality—when in fact “our lives are dominated by precisely this inter-dependence of utility functions which the Paretian optimum denies”—thus also losing contact with the real world.

In one form or another, variations on Leontief’s lament have been heard in many another presidential address, to wit:

By F. H. Hahn (Econometric Society, 1968), who decried “the spectacle of so many people refining the analysis of economic states which they give no reason to suppose will ever, or have ever, come about. . . .”

By G. D. N. Worswick (Section F of the British Association, 1971), who viewed the performance of economics as “curiously disappointing,” suggesting that it has “a marvelous array of pretend tools which would perform wonders if ever a set of facts should turn up in the right form.”

By E. H. Phelps Brown (Royal Economic Society, 1971), who judged the usefulness of current work in economics as “not equal to its distinction” because it is “built upon assumptions about human behavior that are plucked from the air.”

By James H. Blackman (Southern Economic Association, 1971), who noted that models with sufficiently intriguing mathematical properties can achieve lives of their own even if they lead the investigator further away from reality and yet, “the profession’s incentive system tends perversely to reward this kind of endeavor and to deflect the attention of gifted economists from the exploration of concrete problems and the dirty work that entails.”

By Sherman Maisel (American Finance Association, 1973), who concluded that most of the literature of monetary economics is “non-operational” since its prescriptions are too often based on limited or false assumptions, it by-passes critical operational problems, and it ascribes too great validity to its statistical tests.

By Barbara Bergmann (Eastern Economic Association, 1974), who prefaced her plea for more microsimulation to incorporate “realistically messy information” in our economic data base with a few roundhouse swings at the economics profession and the pointed observation that instead of studying the real nature of decision making, we typically rush to make assumptions “whose purpose in life is to let the theorem emerge, all neat and provable.”

Another favorite line of criticism and attack focusses on the implicit value premises of conventional economics. Gunnar Myrdal and Robert Heilbroner chide us for concealing the value judgments that inevitably enter into our selection of problems for study, choice of approach, definition of concepts, and even gathering of data. So a “value-free” economics is an illusion—they urge economists to specify their values and thus avoid biases and make research more realistic.

Radical economists simply reject the whole value system of conventional economics—as they see it, the neoclassical paradigm in its very bone and marrow enthrones acquisitiveness and enshrines the existing order. Paul Sweezy accuses mainstream economists “of hiding the facts, of making the uncontrollable appear under control, of rationalizing a system which condemns hundreds of millions of people to lives of despair and starvation. . . .”

Inflation is the latest source of critical volleys, and I will get to these in due course. Meanwhile, the sampler of economic masochism I have already provided should serve as ample insurance against complacency or smugness in considering "what's right with economics." At the same time, it strongly suggests that economics, more than any other social science, is afflicted with the common scold.

I recognize that such a quick sampling and cryptic quotes, selected to highlight criticism, do a certain injustice to economics and to some of the quoted economists whose kindlier observations have been neglected in the process. But I am also aware that my litany omitted a number of familiar flaws, for example, our impounding of tastes and preferences in *ceteris paribus*; the shortcomings of the maximization principle in explaining consumer and producer behavior, especially in the short run; and our limited ability to bring the claims of future generations into our social utility functions.

Were I to serve as defense counsel for the profession on this wide variety of indictments, I would urge that we plead guilty or take the Fifth on some, take to the defense on others, and take offense at the rest. Having paid my respects to the critics, I intend no point-by-point evaluation or rebuttal. This has been ably undertaken by others.¹ Rather, my object is to gain a more balanced perspective by focussing on the quality, role, and contributions of economics, especially to public policy. In that undertaking, the first step is to examine the flank we expose to the public.

II. The Economist and the Public

When we turn from inside to outside

¹ Among those who have sprung to the defense with varying degrees of fervor are Harry Johnson (1968), Donald MacDougall, Charles Schultze (1972), Robert Solow (1970, 1971), and James Tobin (1973, 1974). For more general appraisals of the criticisms and the state of economics, see Blackman and Nancy Ruggles.

critics, the focus changes. We may think, rightly, that freely confessing our weaknesses and airing our differences stimulate responses and adaptations that strengthen economics. Yet, wearing our purple hearts on our sleeves has its price. It nourishes the darkest suspicions about our art and supplies live ammunition to outside critics who have declared open season on economists. Witness the open sesame to the edop pages for such recent thrusts as Bergmann's assault on economists in general and Friedrich von Hayek's attack on Keynesians in particular. With everything from off-the-cuff phrases about being "caught with our parameters down" to tracts for the *Times*, we feed the hand that bites us.

This is not a plea to do our self-flagellating in secret or to mute our disputes and conflicts. Open controversies, openly arrived at, are part of the therapy that keeps our profession healthy. Rather, my plea is to the media and the opinion makers to understand that appearances are deceiving, that hard give-and-take is indeed a symbol of strength, and that our areas of agreement and consensus are vastly larger than our areas of difference.

On the first point, observers from other disciplines are often astonished at how hard economists go at each other, how readily they run the gauntlet of their colleagues' criticisms with no quarter asked and none given—and, with few exceptions, all this within the framework of professional respect and friendship. As Charles Frankel put it, unlike other social sciences, economics seems to have achieved "a working etiquette which allows people to disagree vigorously without engaging in recrimination about 'unscientific' or 'unprofessional' behavior" (quoted in Johnson (1973)).

What accounts for this? Part of it, one can unblushingly say, is simply that so many competent, tough, and rigorously

trained minds have been drawn into economics in response not just to challenging policy problems but to the quantitative revolution since World War II. And part of it is that the participants can draw on a hard core of economic theory and methodology, together with a growing body of empirical knowledge, to provide standards for testing the validity (though not necessarily the relevance and reality) of ideas, analysis, and empirical findings. The result is not only a relentless intellectual policing of the profession that soon exposes the fool, the quack, and the charlatan, but a growing capacity "to participate in adversary debate over public policy issues without jeopardizing scientific integrity and freedom" (Johnson (1973)).

That brings me to the second point, the impression we give outsiders of a house divided, not to say splintered. It is worth reminding ourselves and our critics of several factors that drive a wedge between image and reality.

One, instead of laying aside our differences and living contentedly together, we economists tend to lay aside our agreements and live contentiously together. We focus our private and public debates on unsolved policy problems, tough analytical nuts, and issues on which we have rival theories, contradictory evidence, or strong ideological differences. Just as these are the questions that intrigue us, they are the ones that attract the attention of press and public. What we know—and they may not—is that beneath the visible tip of disagreement and rivalry lies no huge iceberg of divisiveness.

Two, it is only occasionally that our areas of consensus are brought to the surface in a newsworthy way. One such occasion was the White House "summit conference" on inflation last September. Two dozen leading economists from across a wide spectrum of American economics (not wide enough, the radicals would say)

signed a statement which called on the President and Congress to eliminate twenty-two restrictive laws and practices that inhibit competition, inflate costs, and prop up prices. Only a tiny minority held out (if any minority that includes Galbraith can be called "tiny"). Even more striking, in a sense, was that while the customary and largely ideological clashes among, say, Galbraith, Milton Friedman, and Paul Samuelson caught the public eye, the real story lay in the minimal dissent among the participants on (a) the forecast of a soggy or sagging economy, (b) the urgency of providing relief to the victims of inflation and the casualties of recession, (c) the need to ease monetary restraint, (d) the small anti-inflationary payoff on moderate (\$5 to \$10 billion) budget cuts, and (e) the advisability of resisting popular demands for reimposing full-scale wage and price controls.

Three, even where disagreement flourishes—most visibly, perhaps, between Keynesians and monetarists—the public may not discern that the analytical and empirical ties that bind us are far stronger than the forces that divide us. Our controversies take place within the context of basic consensus on the nature and methods of economic theory and inquiry, on the content of the disagreement, and on the kinds of tests that may one day resolve the conflict. "Such disagreement within agreement lies at the heart of the process of normal development of a science" (Benjamin Ward, p. 12).

Four, much of what the public perceives as a clash of economic concepts and findings is in fact a clash of ideology and values. Given the way technical economics and ethical preferences are packaged in policy debates (and given our lapses in identifying which is which), this is hardly surprising. Thus, whoever opens the package labeled "monetarist" typically finds not just money supply in full flower, but a

dedication to minimum government intervention, small budgets, reliance on rules rather than authority, and price stability. Contrasting correlations appear in the Keynesian package. So outsiders can be excused for slipping into the fallacy of association and attributing the split to our unresolved analytical conflicts rather than to divergent evaluations of social priorities and competing philosophies of government. These associational chains are not linked together by any inexorable logic—in part, they seem to be an accident of birth as in the case of the Chicago twins of monetarism and *laissez-faire* rules. A belief in the supremacy of monetary over fiscal tools could quite logically go hand-in-hand with avid interventionism. But this escapes the jaundiced eye of the outside observer, who takes the ideological lineup as further evidence that economics is riven to its core.

Five, there is an ironic but substantial inverse correlation between the degree of consensus among economists and the degree of public acceptance of their findings. Thus, in the macro-economic sphere of stabilization policy, where debate and disputes among economists flourish, their imprint on public policy is undeniable. But in the considerably more peaceful realm of microeconomics and allocative efficiency—where a reliable analytical apparatus coupled with solid quantitative work, especially on costs and benefits, has led the great majority of disinterested economists to an agreed diagnosis and prescription—the policy box score shows few hits, fewer runs, and lots of runners left on base. Economists widely, in some cases almost uniformly, favor tougher antitrust policy, freer trade, deregulation of transportation, pollution taxes in place of most prohibitions, and tax reform to remove income tax shelters. They oppose fair trade laws, restrictive labor and management practices, distortive zoning laws and building codes,

import quotas, ceilings on interest rates, maritime subsidies, and pure (or impure) pork barrel projects.

Granted, the diffuse and inchoate consumer interest has been no match for the sharply focussed, articulate, and well-financed efforts of producer groups. But the economist is beginning to pick up some allies. Public interest groups are increasingly giving focus and force to the consumer and general public interest. And the march of events is providing some windfalls: Among the apples that have dropped in our laps are flexible exchange rates, the dethroning of agricultural price supports, inroads on import quotas, and moves to end percentage depletion. Under the pressure of virulent inflation, government actions that erode productivity and boost costs and prices are being subjected to new and searching scrutiny. So perhaps, on these micro-economic issues where economists sing in reasonably close harmony, the outside world will no longer quite tune us out. In macro-economic policy, where cacaphony prevails, we can be sure that the world will tune us in.

It may also be useful to draw attention—especially the attention of those who interpret us to the public—to certain other misperceptions and roadblocks that thwart good economics and tend to put economists in bad repute.

First, much of our economic analysis and the uncommon sense growing out of it fly in the face of “common sense,” for example: that budget deficits need not spell inflation, nor national debt a burden on our grandchildren; that thriftiness can be a mixed virtue; that while exploding oil prices *inflate* costs, they *deflate* demand; that in an overheated economy, greater taxes can be the lesser evil; and so on. Behind every false dictate of common sense lies a primitive and misbegotten economic theory—and for most of our pains to correct it, we can expect to get

the back of everyman's hand.

Second, a related cross to bear can be characterized by Kermit Gordon's apt phrase, "virtue is so much easier when duty and self-interest coincide." Not only does that foredoom action on many micro-economic fronts, as already noted, but it puts roadblocks in the path of efforts to make fiscal policy a two-way street. For forty years, Congress has enacted major tax increases only under the whiplash of war. The resulting reliance on tight money to fight peacetime excess demand, coupled with expansionary fiscal policy to fight recession and slack, have had an unmistakable ratchet effect that has tilted the system toward tighter money and easier budgets. (Small wonder, by the way, that many economists and policy makers are unwilling to give up, via indexing, the increases in effective income tax rates "legislated" by inflation.)

Third, the public sees economists as the bearers of hard and unpalatable truths. And often we are, by the very nature of our sometimes dismal discipline. Except when idle resources can be put to work or productivity increased, our message is the stern one of tradeoffs, benefits at a cost, and no one-dimensional daydreaming. Even worse, at times economics has to bring the bad tidings that for some problems there are no satisfactory solutions. For some thirty years, we have warned that full employment, price stability, and full freedom of economic choice cannot co-exist in a world of strongly organized producer groups. More recently, economic analysis has brought home the unromantic truth that failure to cure some of our social ills traces less to a failure of will, or "right-wing villains," or a calloused "establishment," or powerlessness of the people, than it does to the prosaic facts that the problems are tough and complex and the goals we seek may be irreconcilable—in short, trace more to conflicts in our na-

tional objectives than to conflicts among social groups. Welfare reform is a case in point: no solution can simultaneously provide a decent minimum income for all, preserve work incentives, cut no one's benefits, and avoid huge budget costs (see Schultze (1972); Rivlin (1973)). *We* may view such work as a contribution to straight thinking and rational choice. Our critics are more likely to view it, at worst, as a counsel of defeat (which it is not) or at best a counsel of inescapable compromise (which it is).

Since the foregoing misperceptions and roadblocks thwart the translation of good economics into good policy, one could justify, in cold cost-benefit terms, a sizeable investment to overcome or reduce them. The most obvious implication is that the country needs to invest more in formal economic education at all levels. But an equally pressing need is for economists to invest more of their time and effort in making themselves understood to the public and policy maker—and that in turn requires recognition of this skill in the academic reward system. This might serve as a useful antidote to the influence of mathematics and econometrics which, while heightening the precision of professional thinking and internal communication, have apparently dulled the appetite and eroded the facility to communicate with the public in intelligible English prose.

In a very real sense, this confronts the press with an unusual opportunity and challenge, perhaps even a responsibility, to serve as a translator and interpreter of economics and its offerings. But believing (probably rightly) that their readers and listeners prefer to hear of fights and failures, crises and controversies, rather than of quiet contributions and consensus, the conventional or electronic press is not very likely to rise to this challenge. So it is still up to economists. But I must not

carry this too far. Just as I am eschewing any Cassandra-like pronouncements tonight, so I have promised myself to suppress the oracular and even the avuncular (Dutch-type) mood evoked by these occasions. So I shall press on.

III. Standards of Judgment

From the foregoing, it is evident that I feel, first, that economists have gone beyond beguiling humility and welcome self-criticism to the point of almost neurotic self-rebuke, and second, that press and public have all too lustily taken up the cry—in part taking us at our word, in part misinterpreting us, and in part reflecting their belief that, after the high promise of the 1960's, we have failed them in not foreseeing and forestalling the crises of the 1970's: stagflation, energy shortage, and the environment.

In my quest for a more balanced perspective on the state of economics, the next task is to set up some standards for judging the quality and performance of economists. Since we have developed no measures of output or allocative efficiency, no capital-output or cost-benefit ratios, for the economics "industry," I will have to fall back on more subjective and less quantitative measures in judging its quality and contributions.

My mixed bag of criteria includes (1) the quality of inputs; (2) the demands for our services; (3) as a proxy for a measure of outputs, the record of accomplishment in a given field (public finance); (4) finally, the cruelest test, our handling of the economics of inflation.

The *potential* of economics for informing and improving public policy depends on the stock of human capital, technology and tools at its command. Here, economics has no difficulty in holding its head high, especially in terms of the striking advances of the past three or four decades.

Harry Johnson may be a trifle extravagant in his assessment that the United States now has "perhaps fifty economic departments of an average quality comparable to the average quality of the four or five best departments in the whole world in the pre-World War II period . . ." (1973), but only a trifle. Another attest to professional quality, already referred to, might be put this way: Show me another field that has enough inner strength to confess so much remaining weakness (and to carry on so much open controversy). Humility where we have things to be humble about (and we do) is a becoming trait. But coupling it with pride where we have things to be genuinely proud about is hardly a deadly sin.

Accompanying the growth in the quantity and quality of economic brainpower have been striking advances in the techniques and tools with which economists work. For this audience, I can speak in shorthand about the strengthened analytical base of micro- and macroeconomics; the methodological revolution that moved us from the rationalist-historical approach into the age of quantification, with its insistence on systematic measurement of the shapes of economic functions and empirical testing of hypotheses and its use of econometrics and simulation techniques (with a powerful assist from the computer); and such conceptual advances as those in the economics of human capital, of cost-benefit relations, of uncertainty, of control, of transactions and information costs, of "second best," and of the allocation of time.

In normative economics and the analysis of value-laden social problems, new frontiers in the study of economic behavior are being opened up by survey research techniques (especially by the Michigan Survey Research Center), by efforts to measure nonmarket benefits or values (especially by the National Bureau of Economic Re-

search) and by “controlled” social experimentation (for example, by the Brookings Institution and the University of Wisconsin Institute for Research on Poverty). These newer tools and the institutions that nurture them constitute part of the rich and expanding resources of economics.

Economics can also draw on a broad data base, especially in federal statistics. But here, the quantity, timeliness, and even the quality of the data are not keeping pace with either the problems requiring analysis or the capacity of our quantitative techniques. Responding to policy needs and mounting self-criticism, the profession has opened many new fronts in the search for realistic micro-data to link up with macro-data, for cross-section data to help overcome the curse of collinearity in time-series analysis, and for custom-built data developed by survey and experimental techniques.

That the human, analytical, and quantitative resources of economics provide a huge potential for solving problems seems undeniable. That more of these powerful resources than ever before are being put at the disposal of economic policy makers also seems undeniable. What we do not know is what proportion is being misdirected into arid puzzles, sterile proofs, and recreational mathematics while the world’s pressing economic and social problems go begging for answers. Here, we can only match one observer’s impression against another’s. The profession itself has not come to grips with *this* question of allocative efficiency.

A second test in appraising the state of economics, one not unknown to economics, is that of the market place. This takes several forms, none very robust, but none trivial. The first is the upsurge in enrollments in economics courses, especially in introductory economics, that has occurred in the academic years 1973–74 and 1974–

75. The second is the oft-reported high ranking of economists’ salaries in business, government, and academic life. A third is the strong and growing demand for economists’ inputs into the policy-making process—either as staff members or as expert witnesses for congressional committees, individual congressmen, and the executive branch.

With students, business, and government beating a path to our door, we can infer that something must be right with economics, or wrong with the economy, or both. Either we are building a better mousetrap or there are more and bigger mice threatening our customers. Perhaps it is simply that we have the only mouse-traps in town.

But there must be more to it than that. Take the policy maker, for example. What he finds congenial is that he can hand an economist a problem—relating to changes in taxation, regulations, budget proposals, pollution control, poverty, social security, public service jobs, gasoline taxes, oil prices, and so on—and be reasonably sure of getting a useful appraisal of alternative paths to his objectives, of costs and benefits, and of distributional, allocative, and stabilization impacts. Many of these judgments will come with orders of magnitude or reasonably precise numbers attached. He may not trust our *GNP* forecasts, but he has come to respect our hardheaded analysis and numbers on the myriad problems of economic choice with which he is faced.

It seems fair to draw another inference: notwithstanding the current wave of self-criticism and public criticism, even lampooning, of economists and despite our highly visible public debates and highly vulnerable participation in policy making, economics continues to maintain its standing as a science. Signs of a reported crisis of public confidence or of a “recession of self-confidence” are few and far between.

Reports of the demise of our discipline are grossly exaggerated.

IV. The "Outputs" of Public Economics

Having considered some indicators of the quality of our inputs and of the revealed preferences for our outputs, let me continue this exercise in casual (and congenial) empiricism by taking an unscientific but not unrepresentative sample of the outputs of economics, especially those bearing on policy. For this purpose, I draw on my chosen field of public finance, or public economics, to illustrate the telling conceptual and empirical advances of economics in recent decades and the resulting enrichment of its offerings to the policy maker. Indeed, such an appraisal offers so many healthy antidotes to "what's wrong with economics" that I was tempted to devote my whole discourse to it tonight. But I resisted the temptation because, first, much of it has already been done in carefully documented depth in survey volumes by Brookings and the National Bureau;² second, I figured it might test your patience and mine; and third, it would have left no room for a confrontation with inflation. So I offer instead a miniaturized assessment of the achievements of public economics as viewed through the policy prism.

Public Expenditures

Consider first the striking contributions economics has made in the past generation to clear thinking and better informed decisions on public expenditures. Partly, this reflects advances in economic science,

² See Alan Blinder and Robert Solow et al. This is the capstone volume of the Brookings Studies on Government Finance, directed by Joseph A. Pechman, which has produced 35 books in the past decade. See also Carl Shoup et al. This was one of several survey volumes under the general heading, *Economic Research: Retrospect and Prospect*, based on the Bureau's Fiftieth Anniversary Colloquia.

for example, in the theory of public goods and human capital, and partly, creative new applications of the economist's characteristic way of looking at problems of choice, namely, through the lens of opportunity costs, benefits, and alternative paths to a stated goal.

Economics can offer much more concrete guidance on efficient ways of allocating resources to achieve stated governmental objectives than it can on what the public-private sector division of resources should be. That may be a good thing in that presidents and congressmen view the fixing of goals for public health, housing, welfare, and the like as what *they* were elected for, yet at the same time seek, or at least accept, economic guidance on the choice among competing methods of achieving these goals.

Nonetheless, rapid progress in the theory of public goods since the appearance of the Samuelson classic on "The Pure Theory of Public Expenditures" just twenty years ago has vastly improved on the simplistic theory it replaced. It has facilitated straight thinking on the derivation of conditions for efficient public-sector allocations from private evaluations and on the articulation of social priorities through the political process.

Interwoven with the newer thinking about public goods has been a resurgent interest in externalities or spillover effects. In a sense, the pure collective good is a case of total externality—all of its benefits are external and nonmarketable since nobody can be excluded from them. That may clarify thinking but gives little policy guidance.

Yet, the externality concept translates into hard-headed policy advice in such disparate areas as pollution, federal aid, and the law. When pollution became a national concern, economists quickly drew on their tool kit to develop proposals for antipollution taxes (within the context of

target air and water quality standards). Tax penalties of so much per unit would put price tags on use of the public's air and water, thus internalizing external costs and using market incentives to accomplish depollution rather than relying on the less efficient route of regulation.

When local governments supply education and public health services to a mobile population, many of the benefits spill over to other units. An important rationale for federal grants flows from these externalities, namely, that to get local units to produce enough education and health service to achieve a national, not just a local, cost-benefit optimum requires conditional grants from the federal purse.

Further, since externalities in the form of damage to third parties lies at the heart of many problems in legal justice, economics is able to make an important contribution in this area.

When we turn to the empirical outputs that are now illuminating problems of public choice, we find the past decade bristling with new thinking, new techniques, and new measurements. These offer the decision maker important new guides in the selection and evaluation of government programs and new insights into alternative systems of delivering government services:

Measurement of cost-benefit ratios has developed from the early metrics of water projects into, first, a sophisticated cost-benefit calculus for tangible investments like dams, roads, pollution-control projects and, second, cost-benefit estimates for intangible investments in human brainpower, skills, and health. Shadow pricing has been one of the useful tools in this connection. Cost-benefit analysis, even with its limits of quantification and its inability to shed light on distributional and value questions, is an important aid to informed decisions.

A related advance is the development of new and tougher standards for judging government programs. The former criteria centered on the question: Is the program put into effect quickly and with high fidelity to the congressional intent? Now, the accountability question is: Does it deliver the goods? Does it accomplish the objectives? Inputs used to be stressed—if they conformed with the intent of the legislation, they tended to be judged a success. But now we try to measure outputs, a tougher and more elusive standard. (The parallel with judging the performance of economics and economists is painfully obvious.) Antipoverty programs, which were among the first to be evaluated by these stringent standards, seem to have borne the brunt of the evaluation boom. By the old inputs standard, a program like Head Start would have fared much better.

The reach of cost-benefit analysis will be lengthened if a broad range of new research efforts in nonmarket sectors of economic activity pays off. I refer not only to the exciting work on measurement of the returns on investments in human capital (T. W. Schultz), but to efforts to measure the output of the medical industry, to measure the relations between crime and punishment, and to measure the value of nonmarket economic activity conducted *within* firms and households.

The new technique of controlled social experimentation on proposed welfare and housing measures, health insurance, and education vouchers is yielding important insights. As a result of experiments on negative income taxation, for example, the equity versus efficiency, or equality versus incentives, controversy will never be conducted in a vacuum

again (Rivlin (1973)). In spite of some limitations, the New Jersey experiment yielded strong evidence that fears of fatal incentive effects of a negative income tax were grossly overblown.

Another focus of fruitful thinking relates to alternative strategies for delivering social services. The in-cash versus in-kind choice is a basic one. Economists are predisposed toward the in-cash approach on grounds that one can generally depend on people to follow their own best interests. But there are significant exceptions where consumer sovereignty is limited or specific goods externalities exist or some explicit social values take priority.

Out of economics also comes the attempt to develop "market analogs" to serve as substitutes for market incentives in reconciling public with private interests, decentralized individual decisions with social goals. Pollution taxes are a case in point. Performance standards for teacher pay would be another. Putting medical insurance programs on an efficiency-based reimbursement basis would be a third. The big gap is in the redesign of incentives and institutions to guide decentralized government decision making more systematically toward the aims of our social programs (Schultze (1971)). Thus far, the government, like the economics profession, is largely in the dark about its own production function.

Taxation

What strikes an old public finance functionary as forcibly as any change in the field of public finance is the way in which modern thinking has knocked the props out from under the neat and primitive theories of tax incidence of a generation ago. The property tax provides a particu-

larly instructive case in point. The textbooks of the 1930's and 1940's told us confidently that the tax on land (fixed supply) was capitalized and on dwellings (supply-responsive) fell like an excise tax on the occupant, the consumer of housing services. The policy lesson was clear: Given the declining proportion of income spent on housing services as income rises, the tax was hopelessly regressive. Today? It is recognized that the old incidence analysis was wrong, even on its own terms.

The modern theory of incidence (defined as the impact on distribution of private real income) draws on general equilibrium theory, distinguishes between sources-of-income and uses-of-income effects, and disentangles the concepts of specific, differential, and balanced-budget incidence. The resulting analysis indicates that much of the aggregate burden of the property tax falls on owners of capital and hence tends to be progressive—and this progressivity is enhanced by the particular "excise-type" effects of this tax (Henry Aaron). In short, error has been exposed and though the debate is not over, we are now in transit toward truth.³ It is hard to put down the knee-jerk reaction that prefixes "property tax" with "regressive." And it will take some time before policy makers accept the proposition that, at the very least, the property tax is now in the unexpected position of "innocent until proved guilty." But the implications for policy are profound.

Economists have long been useful and influential contributors to the design of the federal tax structure and of particular taxes. Again, elementary concepts we now take for granted—for example, horizontal versus vertical equity, Richard Musgrave's three branches of distribution, al-

³ Those who view decisions to locate in a particular community as a conscious choice of one particular bundle of public services over others conclude that the property tax on housing is a benefit tax, a payment for benefits received.

location, and stabilization, the lagged effect of tax changes, and automatic versus discretionary tax changes were not even part of our vocabulary in the pre-World War II period. Yet, all of these are now factored into our economic advice on taxation.

Even more directly impinging on policy are the empirical advances. One thinks of searching studies of particular taxes and tax components (especially in the Brookings Studies on Government Finance), and of the relentless identifying and quantifying of federal income tax preferences or "loopholes." Much of the thrust of economists' recent work on these "tax expenditures" has been (a) to identify the beneficiaries and specify the size of the government subsidies provided in the form of preferential tax treatment, (b) to define the inequities, both horizontal and vertical, that they create, and (c) to estimate the distortions in resource flows caused by preferential treatment of oil and gas, housing, real estate partnerships, and the like, and measure the resulting welfare loss. Though the congressional response has been slow and halting, progress has been made along the lines plotted by economists, and a solid base has been laid for the further tax reform that is surely coming.

Out of the countless other advances, one stands out, namely, the highly informative work done on the distributional impacts of taxation with the aid of the powerful tool of micro-unit data files (for example, the MERGE file developed by Joseph Pechman and Benjamin Okner). Such micro-unit files are a new-generation statistical missile, MIRVed so that they can simultaneously hit multiple revenue-estimating and burden-distribution targets. With their help, for example, economists have measured the growing burden of income, payroll, and consumption taxes on the lower income groups and developed

techniques for removing them—most recently, in the context of the impact of inflation on the same groups.

One should add that if revolution rather than reform becomes the order of the day in the federal tax structure, the economist is ever ready with reasonably sophisticated analytics and a fair amount of empirical information on such major alternatives as a value-added tax, a progressive expenditure tax, and a net-worth tax. One of the next stages in tax research, a highly complex one, will be the general equilibrium analysis of such sweeping changes in the tax system as, say, the substitution of a value-added tax for the corporate income tax or for part of the payroll tax. Or, if stimulation of private saving becomes a compelling objective, perhaps the substitution of an expenditure tax for part of the income tax will become a live issue. The skills of the economist will be front and center in any such redesign of the tax system.

The negative income tax story is relevant here. The concept and its rudimentary principles were developed and discussed among economists in the early 1940's. Some of us were already using it as a teaching device in the mid-1940's. A quarter-century after its origin, it became the basis for the Family Assistance Plan developed by Mr. Nixon's economists. And a more limited version of the plan seems again to be rustling in the leaves.

Fiscal Policy

In the domain of fiscal policy, it is harder to answer the question, "What have you economists done for us lately?" with a sparkling array of examples. Much of the theoretical ferment in this field is associated with the flowering of Keynesian macroeconomics in the late 1930's and 1940's, the very period when the microeconomics of tax incidence and public expenditures languished.

Conceptual advances have continued throughout the past twenty-five years, but they have been more in the nature of a fleshing out and consolidation of the original breakthroughs with the aid of the powerful tools of mathematics and econometrics. Multiplier analysis, for example, has moved from the theoretical realm into large computer models of the economy—with the tax cut of 1964 and the surtax of 1968 providing empirical grist for the mill. While the models differ on the exact value of the multiplier, “a fiscal policy planner will not often be led astray if he uses a multiplier of 2” for government spending (see Blinder and Solow).

Coupled with multiplier studies is the even more subtle study of the structure of the “outside lags,” of the timing of responses in the economy to changes in fiscal policy. Though the empirical efforts and debates go on apace, the behavior of the cumulative multipliers in a clutch of economic models suggests that for any given change in fiscal policy, “at least 75 percent, probably much more, of the ultimate effect is felt within the first year after the initiation of the policy” (Blinder and Solow). Although intractable questions remain concerning investment responses to fiscal policy changes, enough has been learned about aggregate demand responses to provide two broad generalizations about fiscal policy:

One, the conditions for intelligent fiscal policy are met if economic forecasting can answer two not-very-exact questions: Do projected economic conditions in the ensuing six to nine months call for restraint or stimulus? Is the required dosage large or small?

Two, given the limited margin for error in a high-employment economy, it is better to rely on many smaller monetary-fiscal moves than a few large ones.

Implicit in these two generalizations is a third one: Given both the internal shifts and the external shocks with which stabilization policy has to cope, a discretionary policy that makes efficient use of feedback information will be more effective than an automatic policy that locks in on fixed fiscal and monetary targets.

Development of a simplified measure of fiscal impact revolving around the “full employment surplus” (*FES*) concept is another example of the typical process by which economists expose error, develop approximations of truth, but continue the vigorous debate on further improvements. First, policy makers had to be weaned away from the annually balanced budget and the cyclically balanced budget as policy targets and from actual deficits or surpluses (especially in budgets other than the national income accounts budget) as measures of budget stimulus or restriction. It was not easy. It took almost a quarter of a century before a Democratic president was converted (in 1961) and another decade to capture a Republican White House.

But success on the policy frontier has its own pitfalls, both political and economic. What was intended as a measure of policy was instead taken as a goal, namely, a balanced budget at full employment, a “self-fulfilling prophecy” as the Nixon Administration called it. This erroneously implied that the fiscal target should remain fixed regardless of changes in monetary policy and significant shifts in private demand, for example, a plant-and-equipment boom. Apart from trying to correct such misconceptions, economists have had to wrestle with the problem of the overstatement of the full employment surplus when inflation expands revenues faster than expenditures, not to mention the problem of weighting for differing multipliers if tax or expenditure components change sharply. In brief, the advances over

the bad old days of the annually balanced budget are enormous, but economists are aware of the limitations of the *FES* measure and are struggling to resolve them.

Just as economics relegated erroneous budget concepts to the dustbin, so it has cast a shadow over such former favorites (of mine, among others) as federal capital budgeting and the "shelf of public works." The initial enthusiasm for the capital budget concept (in the context of a Congress seeking to balance the budget annually) was dispelled by second-thought analysis showing that (a) it rested on some faulty parallels with private finance, (b) the implicit fiscal policy rule of always financing capital projects by borrowing is in error, and (c) it would bias government capital spending toward bricks and mortar instead of brainpower and people. In the public works case, the concept ran afoul the findings of prosaic economic research: recent studies show that the public works program launched in 1963 to speed recovery was far from completed before excess demand overtook us in the 1966–69 period. This is not to rule out the use of certain types of "public works" that are nimble on their feet, such as road and forest maintenance work, for stabilization purposes. Nor does it rule out speeding up or delaying the launching of projects that are to be undertaken for sound cost-benefit reasons in any event. But it is fair warning not to expect very much stabilization help from the public works sector (not to be confused with public service employment).

In the conscious use of taxes for stabilization purposes, the huge 1964 income tax cut delivered economic expansion and a balanced budget on schedule without inflation by mid-1965, just before the Vietnam escalation struck the economy. The temporary 1968 surtax, buffeted by powerful demand forces and monetary easing, left a more ambiguous econometric trail.

Subsequent fiscal policy thinking emphasizes the advantages of temporary tax changes that embody not just income effects but intertemporal substitution effects. For example, lowering the prices of investment goods in a recession via a clearly temporary increase in the investment credit, or temporary cuts in consumption taxes on durable goods (or lacking these, temporary purchase subsidies), would constitute a powerful incentive to purchase those goods before the price went up again.

Further work is needed to measure the cost-push effects of anti-inflationary tax increases that offset part of their demand-damping effect. In recession, the cost-easing and demand-push effects work in happy harmony. They work at cross purposes in tax increases (though not in expenditure cuts) to curb inflation. The question of how large the offsetting cost-push effects, or aggregate supply effects, may be, is unresolved. In a high-inflation economy, this is a serious gap in our fiscal policy knowledge.

Other Aspects

This kaleidoscope of contributions, long as it is, leaves out a whole string of developments in budget concepts, techniques, and processes—efforts that were crowned by the congressional budget reforms recently put into effect. Much of the guidance and momentum for these reforms was provided by economic analysis and by a succession of five economist-budget directors throughout the 1960's. Also omitted is the conceptual work on the economics of the bureaucratic process, of how government works. Other omissions include the rebirth of interest and great advances in the economics of state-local finance, the rapid growth of the important new field of urban economics—with its contributions to regional economics, location research, and analysis of the city as an economic sys-

tem—and the enriched economics of fiscal federalism. I have even eschewed an assessment of revenue sharing, the rationale and form of which were developed by economists. With little imperialism, economists can also cite the firm quantitative evidence being developed to demonstrate the adverse economic effects of many public regulatory activities.⁴

For all the advances, the agenda of unresolved conceptual questions and unfinished empirical business is huge. But even this truncated review of progress and current output in public economics makes clear that the contributions of recent decades have enormously enriched this field not only conceptually but as a source of hard practical advice to decision makers who want to shape a better tax system, do justice to the poor, improve social programs, reform budget procedures, fight unemployment, and so on. And in the process, the frontiers of normative economics, both theoretical and empirical, have been pushed out into the areas of education, health, racism, crime, family behavior, and even political behavior.

As a result, we have plunged ever deeper into the realm of values. Not that it was a value-free inquiry to ask the traditional questions about the effect of a given policy on material output. But surely the testing of policies by the costs they incur and how effective they are in meeting some generally accepted criteria of social welfare or general welfare involves economics directly in value and distributional problems.

⁴ As an example of the “Age of Quantification,” George Stigler cites the sea of studies on regulatory practices and their costs and benefits in the past dozen years, where there was a vacuum before. He notes that thirty-six “quantitative studies of effects of laws” were reported in two journals alone during this period, the *Journal of Law and Economics* and the *Journal of Political Economy*. These are promoting a broader consensus within the profession, informing decision makers, and posing challenges that will make policy failures easier to identify. (Personal correspondence.)

And it enables economics to say important things on social policy issues within the framework of the conventional economic paradigm and with rigor of the non-mortis variety.

We are becoming interdisciplinary in spite of ourselves. When *we* do it, of course, we don't think of it as cross-sterilization of disciplines. But here is an area where modesty becomes us. For if we confine ourselves too narrowly to economics, we are far too likely to attribute to economic variables the behavior and results that are really a response to social variables. Fearing just that, one observer has been unkind enough to suggest that we ought to stick to inflation problems where we *all* know what to say.

V. The Economist and Inflation

Inflation may no longer be “Public Enemy Number One” now that severe recession is upon us, but it is surely “Economists' Enemy Number One.” Among the charges of, by, and against economists that have been touched off by double-digit inflation and reported in the public prints are these:

Economists have confessed (I plead guilty) that 1973 was “the year of infamy in inflation forecasting” and, as already noted, that “we were caught with our parameters down.”

Aaron Gordon puts it more explicitly when he says that “the forecasters fell flat on their faces in predicting price changes because they didn't have any way of estimating sectoral supply scarcity” and adds that we have not “even started to develop a theory of aggregate supply.”

Leontief scolds macroeconomists more generally: “There is a lot of fancy methodology, but the macroeconomists get indigestion if you give them facts.”

We are reminded *ad nauseam* that the “new economists” of the 1960’s had promised to fine-tune inflation out of their full employment economy (a clear-cut triumph of caricature over fact since Keynesians time and again warned of precisely the opposite danger).

Myrdal and Heilbroner have pointed to stagflation as Exhibit A that economists typically lag rather than lead their targets, that being “behind its time” is “the regular methodological weakness of establishment economics.”

Von Hayek recently reentered the fray to lay the blame for worldwide inflation squarely at the door of economists, particularly those “who have embraced the teachings of Lord Keynes.”

Apart from the charge that Keynesian economists have *caused* inflation (which is much like saying that the cause of forest fires is trees), the bill of particulars against macroeconomics runs something like this: First, it did not forewarn the body politic that it would have to pay such a high price in endemic inflation for the attainment of high employment. Second, its progress in solving some important puzzles of endemic inflation relating, for example, to the Phillips curve, wage inflation, expectations, and uncertainty is much too slow. Third, there is no articulated general theory of inflation as such. Fourth, economists failed to foresee the 1973–74 epidemic inflation because their forecasting models lacked the central supply and price parameters. Fifth, macroeconomics is helpless in the face of epidemic or external-shock inflation—indeed, it has not satisfactorily explained the co-existence of inflation and recession, or stagflation. Without attempting a point-by-point assessment of these complaints, I will touch on all of them in the following

sympathetic interpretation of how economists are coping with inflation’s tough analytic and empirical challenges.

Addressing myself for a moment to our reproachful public, let me simply say to them: “We never promised you a rose garden without thorns.” Over most of the past thirty years, macroeconomists have warned again and again, first, that aggressive fiscal and monetary policy to manage aggregate demand was bound to generate inflationary pressures once the economy entered the full employment zone, and second, that while full employment spells inflation, recessions run into price and wage rigidities that thwart deflation, an asymmetry bound to produce a ratchet effect on the price level. Keynes himself foresaw the basic problem in his little book, *How to Pay for the War*, in 1940. Abba Lerner and William Beveridge also wrote of the problem in the early 1940’s. And it has been discussed in the stabilization theory and policy literature, in congressional hearings, and in other policy forums ever since.

This country finally embraced activist fiscal policies for full employment in the 1960’s, most explicitly in the 1964 tax cut. Following the canons of Keynesian economics, focussing on the economy’s full employment potential as their target, and steadfastly rejecting a spate of “structural” explanations of unemployment, economists were at first alone in prescribing tax cuts as a tonic for the stagnant economy. Enacted early in 1964, the tax cut delivered the promised expansion and budget balance without inflation. By August 1965, when Vietnam escalation began, unemployment had been brought to 4.4 percent with only the faintest stirring of the inflationary beast (i.e., with consumer prices rising at less than a 2 percent annual rate).

In a very real sense, economists have been victims of their own success. Macro-

economic policy, capped by the tax cut, was the major force holding the postwar economy on a vastly higher plane than the prewar economy.⁵ On one hand, the high employment, limited-recession economy forged with our macro-economic policy tools is indeed an inflation-prone economy—the formula for successful management of high-pressure prosperity is far more elusive than the formula for getting there. Yet on the other hand, success bred great expectations on the part of the public that economics could deliver prosperity without inflation and with ever-growing material gains in the bargain. The message got through that we had “harnessed the existing economics . . . to the purposes of prosperity, stability, and growth,” and that as to the role of the tax cut in breaking old molds of thinking, “nothing succeeds like success” (Heller). *The Economist* unkindly corrected me: “Nothing exceeds like success.”⁶

To be sure, critics and converts alike ignored our caveats that the goal of “prosperity without a price-wage spiral” had “eluded not only this country but all

of its industrial partners in the free world,” that “the margin for error diminishes as the economy reaches the treasured but treacherous area of full employment . . .,” and that “the ‘new economics’ promises no money-back guarantees against occasional slowdowns or even recessions” (Heller).

All too soon, Vietnam blew the economy off-course. Economists found that in the political arena fiscal policy was not a two-way street and that the much delayed surtax adopted in mid-1968 was no match for surging inflation. Nor was the induced recession of 1969–70. It took a combination of the 1971 shock therapy of tight wage-price controls and the stimulus of tax cuts to subdue inflation and energize expansion. It is worth noting that economists analyzed and projected the effects of this “new economic policy” with exceptional precision. That the tax cuts, coupled with controls and devaluation, would generate a surging expansion at very moderate rates of inflation in 1972 was widely and accurately forecast.

But the period from August 1971 to January 1973 was in the nature of a remission from the inflationary disease, clearly not a cure. The 1969–70 recession brought home the worsening problem of persistent inflation in the face of slowdown and recession. It presented new empirical puzzles for the analysts of the Phillips curve, wage equations, and expectational inflation. And it began to prompt the public mutterings that are being intensified by the 1974–75 stagflation: “All right, so you did not promise us a rose garden without thorns—but the thorns without the rose garden?”

Keenly aware of these problems, economists have long been at the drawing boards on this problem of endemic inflation. In a close parallel with research on cancer, economists are working on various pieces of the inflation puzzle and produc-

⁵ As gauges of the contrast between prewar and postwar performance: unemployment averaged 18.8 percent in the decade of depression (1931–40) in contrast with 4.8 percent in the twenty-eight years since World War II; the prewar peak annual rate was 24.9 percent, the postwar peak was 6.8 percent. Annual real *GNP* dropped 30 percent from 1929 to 1933; since the war, mild declines have occurred only in three years (1949, 1954, and 1970), though 1974–75 may add two more. Consumer prices in 1940 were 18 percent below 1929; from 1948 to 1974, they increased 106 percent.

⁶ Macroeconomists were not alone in their exuberance in the mid-1960's. On this rostrum a decade ago, George Stigler, after reviewing the great promises and early accomplishments of the “Quantitative Revolution in Economics,” was moved to say, “I am convinced that economics is finally at the threshold of its Golden Age—nay, we already have one foot through the door. . . . Our expanding theoretical and empirical studies will inevitably and irresistibly enter into the subject of public policy, and we shall develop a body of knowledge essential to intelligent policy formulation. And then, quite frankly, I hope that we become the ornaments of democratic society whose opinions on economic policy shall prevail.”

ing useful insights and guidance for policy purposes. But as economists, we would be the first to underscore that these puzzles are far from being fitted into an articulated and holistic theory of inflation. Inflationary analysis appears as an appendage to Keynesian and monetarist theories. But as yet, the Keynesian apparatus cannot tell us how any given change in aggregate demand is divided between changes in real output and changes in prices. Nor has monetarist theory unlocked the puzzle of how the effects of monetary changes are divided between output and price level changes. And no big breakthrough is in sight.

Does this mean that the economist has to stand mute in the meanwhile? Not at all. He is pushing ahead on the various pieces of basic research on the cancer of inflation and isolating and prescribing effectively for particular forms of the cancer even without having a complete explanation of the disease. Let me come back to the sustained and systematic research efforts on endemic inflation after examining the 1973–74 epidemic and the economist's responses to it. Since the epidemic is an over-layer on the endemic base, the distinctions won't be clear-cut—but they are nonetheless useful for viewing what the economist is able to contribute to policy.

The food-fuel price bulge generated over half of the 1973–74 inflation—and of economists' woes as well. Yet, it is asking a lot of economists to expect them to have foreseen that the oil cartel would quadruple oil prices, that the world would suffer widespread and successive crop failures, that the Peruvian anchovies would go into hiding, and that the Soviets would "solve our surplus grain problem" overnight.

Several unpleasant policy surprises also beset the inflation forecasters. First, just when a new rash of inflation was breaking out early in 1973, the reasonably effective

Phase II controls were abruptly dropped in favor of the weak and ineffective Phase III. Second, six months later, after inflation had changed into a commodity-driven structural phenomenon involving a drastic readjustment of relative prices, the White House (to the pained surprise of economists inside and outside the administration) prescribed just the wrong medicine, a new wage-price freeze. A third policy surprise was that the dollar was allowed to sink like a stone: At its low point in the summer of 1973 (just before a substantial rebound), relative prices of imports had risen 10 percent in six months. About a quarter of the 1973 inflation has been attributed to these policy developments (see William Nordhaus and John Shoven).

It is worth noting that unexpected twists and turns of federal policy—which might be termed "internal shocks" in contrast with the "external shocks" of the food-fuel price explosion—are a continuing bane of the forecaster's existence. The about-face of the Federal Reserve in 1974 is another painful case in point. The sharp turn from ease to tightness in the first quarter of the year was a major factor in transforming prospects of recovery into recession in the second half of 1974. It is not quite clear why economists should be better at anticipating these shocks, especially the external ones, than society as a whole, or other professional specialists, or practical men of the world. Nothing in statistical methodology or economic science enables us to predict random shocks. What *can* be expected of us is that when they occur, we will spot them quickly, identify them, and analyze their significance for policy.

It is also worth remembering that democratic governments, by their nature, are pressure-responders rather than problem-anticipators. This carries two implications for political economists. On one hand, if an idea's time has not yet come,

or if a problem has not yet become a crisis, the economist's call for action is likely to go unheeded. On the other, spotting emergent problems early can perhaps hasten an idea's time and alert the policy makers to impending danger.

Economists can more readily be faulted for being caught by surprise by the shortages of materials and primary processing capacity that caused the economy to bump against its ceiling sooner than expected and by the worldwide economic boom that put severe pressure on raw commodity supplies and prices. On the first point, we suffered both from information failure—the official capacity indexes simply did not reveal how close the economy was to its output ceilings—and from analytic limits. While identifying the causes, economists have been unable to pinpoint the relative significance of the shortfall of investment that began in the late 1960's, of underinvestment caused by price controls, of delays induced by environmental policies, and of the surge in foreign demand touched off by devaluation. However, I should add that the shortages problem is meat and drink for economists, and they are responding (especially in the energy field) with new analyses of price elasticities, investment needs, and the like. All of a sudden, price theory is back in vogue, and elasticities have replaced multipliers as the badge of a policy maker's *savoir faire*.

Delays in perceiving that the U.S. economic expansion was part of a worldwide upsurge can again be laid more to lack of an adequate information system than to any inability to understand the underlying principles. Still, a better sense of history and of the emerging worldwide imbalance between growing aspirations and growing incomes on one hand and inelastic resource supply and lagging technology on the other would have made us more conscious and cautious. We are consider-

ably less likely to be caught by surprise in the future in view of the new worldwide data networks that are being developed by Project LINK at the University of Pennsylvania and by Otto Eckstein and his colleagues at Data Resources Incorporated (*DRI*).

Without absolving economists, one should apply this operational test: With proper foresight, would tighter monetary and budget policy have been able to damp inflation? It is worth recalling, first, that the full employment budget was making a swing of over \$10 billion towards restraint between fiscal 1973 and fiscal 1974 (from a \$2 billion deficit to a \$10 billion surplus under the old 4 percent unemployment standard) and that monetary policy pushed interest rates into the double-digit region; second, that there was little that an aggregate demand squeeze could have done to push world commodity prices down. So the answer is clear: Even tougher fiscal and monetary policy would have had limited scope in holding inflation down.

This is not to deny that generating a larger full employment surplus would have been the prudent course in calendar 1973. But it is worth noting that to offset the food and fuel price explosions—which were triggered by forces largely immune to U.S. fiscal and monetary policy—would have required a *reduction* of 3 percent in all other prices. Such a target implies depression-inducing doses of fiscal and monetary restriction, an unthinkable "solution."

Looking toward the future, many economists draw the lesson not that one should keep the economy's motor idling, but rather that one should provide it with safety devices and heavy-duty shock absorbers, for example, stock-piling of foodstuffs, oil, and basic raw materials, careful tracking of commodity exports, distant early warning systems to spot shortages-

in-the-making, and conservation and development measures to limit dependence on foreign raw materials cartels. In other words, it is a call for better planning, better data, and faster conversion of knowledge into policy.

Another criterion of economists' responses to inflationary shocks is how quickly they adapted (read, "disaggregated") their macromodels, large and small, to incorporate new supply and price parameters that had previously been judged of second or third order importance and hence relegated to Marshall's *ceteris paribus* pound. Some of the mongrel pups impounded there turned out to be full blooded huskies, for example, food prices, the exchange value of the dollar, oil and other raw material supplies and prices. At first most economists were slow and the big models sluggish in their responses. After all, for two decades prices had moved in tandem with wages, with a year-by-year percentage-point differential of $2\frac{3}{4} \pm 1$. So most models relied on wage trends, with some adjustment for productivity and capacity behavior, to give them a fix on price trends. Their eyes were on labor market indicators rather than commodity supplies, exchange rates, and the like. After some initial delays, the model builders scrambled to disaggregate, to build microelements into their macromodels. For example, *DRI* now has good stage-of-processing models that absorb the impacts of food and energy explosions. Price elasticities are being built into the macromodels to reflect the impact of massive relative price changes on the macrodimensions of the economy.

The whole experience reminds us of the role and limits of econometric forecasting models. First, the combination of computers, mathematics, and econometrics cannot produce the miracles that the uninitiated may expect of them—there is no way of replicating reality with its 3 million

equations, all of them non-linear. Second, their indispensable function is to bring us closer to reality and help the mind manage the previously unmanageable—they permit us to release vastly more animals from the *ceteris paribus* pound than we could manage without these tools. Third, they have to be constantly adjusted to plug in common sense, adjust the length of the lags, and bring in new dimensions of the problem. Else, they will lock out things that a more judgmental approach would include, and will fail to respond quickly to changes in order of importance.

So the inflation-shock experience has brought home the need not just to watch supply but to watch *all* the pieces lest the model prevail over the mind, rather than having the model help the mind prevail over matter. The macro-stalactites have to reach toward the micro-stalagmites, and vice versa. I hope that metaphor is not a portent of the pace at which the advance toward macro-micro fusion will proceed.

Economists who use judgmental models have shown us how to be the master rather than the slave of the computer. A case in point was the early analysis (especially by George Perry) of the macro-impact of the oil price increases. A year ago, his work had already brought out the oil paradox—the *inflation* of costs and hence prices, leading to a *deflation* of aggregate demand—and had provided some estimates of both. The insight that some \$15 to \$20 billion of consumer purchasing power would be siphoned off into the hands of oil producers and royalty collectors without any early return to the economy in the form of demand for imports or investment goods had important implications for demand-management policy—implications that were ignored until severe recession was full upon us.⁷

⁷ Late in 1974, Perry undertook a more searching econometric probe with the benefit of actual rather than projected oil price data and with the aid of the large

These important insights into the macro-economic policy implications of oil prices fit into the broader efforts of economists to disentangle the sources of the current inflation and identify the appropriate remedies. They differentiate among (1) excess demand, which had spent most of its force by early in 1974, (2) the price-wage-price spiral, which began to turn more rapidly in 1974, and (3) external-shock or special-sector inflation, in particular, the commodity-price surges that permeate the present inflation and account for its special character and ferocity.

The first responds rather readily to monetary-fiscal pressure, the second responds more reluctantly, and the third is highly resistant to the demand-management measures of any given country. For the second and especially the third types, therefore, high costs in unemployment and foregone output have to be incurred for small gains in curbing inflation. So the distinction is an instructive one for policy—even when the instructions are ignored. As we meet here tonight, the economic lessons that were so long ignored are being painfully driven home by severe recession and unemployment coupled with continuing inflation. A much-belated consensus that fiscal and monetary stimulus can now be undertaken with minimal inflationary risk is rapidly forming.

The economists' three-ply classification of inflation sources is also useful in driving

scale formal models. His analysis shows that the purchasing power loss had reached \$37 billion (annual rate) by the third quarter of 1974 and that the rise in the deflator attributable to the oil price jump was 3.8 percent. His analysis embraced not only the real-income effect (the transfer of real income from consumers to producers), but also the monetary-policy effect (the reduction of the real value of the money stock and the rise in interest rates stemming from the highly inelastic short-run demand for petroleum products), the automobile-demand effect (higher saving), and the induced-inflation effect (the price-wage-price effect) of the oil price rise on the macroeconomy.

home another point: In most *U.S.* inflations, consisting of the first two types, one person's price is another person's income, so that in spite of some reshuffling, there is no net loss in real income. Not so in 1973–75. Commodity inflation has transferred tens of billions of dollars of *real* income out of the pockets of urban consumers and wage earners into the hands of farmers and foreigners where it is beyond the reach of the collective bargaining process. From this, several important inferences can be drawn:

Point for point, this inflation *cum* relative price changes is harsher in its impact than previous postwar inflations.

In this “no-win” inflation, the wage earner's loss has not generally been the employer's gain; hence, if the wage “catch-up” process succeeds in recouping the *full* rise in the cost of living, much of the wage increase will pass through to prices and thereby give the wage-price spiral another self-defeating turn.

It follows, as various economists urged throughout 1974, that tax cuts to bolster the real income of labor, if put in the context of a social contract, might well relieve some of the pressure for higher wages.

In this respect, today's situation contrasts rather sharply with the 1950–51 inflation when a similarly rapid run-up in world commodity prices was accompanied by a rapid rise in profit margins side-by-side with vigorous federal policies to boost capacity. The ensuing combination of ebbing world market prices and wage increases that could be granted without generating higher product prices resulted in a remarkable four-year period of price stability from 1952 to 1956.

A closely allied economic insight goes to the nature of the inflationary process. It

explains in good part why inflation is so stubborn even in the face of overly restrictive monetary-fiscal policy and rapidly mounting unemployment and slack in the economy. It is the sharp run-up in *relative* prices of food, fuel, and imported goods—coupled with the downward rigidities of wages and prices—that is the key to most of our stagflationary malaise today.

These downward rigidities are a striking example of the way in which economic solutions create their own problems and move the economist relentlessly from one new frontier to another. Once macroeconomics gave governments the know-how and tools of modern demand-management to avoid depression, and once the public caught on that even recessions are essentially man-made—chiefly by That Man in the White House, whoever he is, together with the Congress and the Federal Reserve Board—it became part of the politics of survival to hold employment high and keep recessions in check. Absent the fears of mass unemployment and prolonged recession, the risks of not cutting prices and not accepting lower wages are minimized. Having put the Great Depression of the 1930's far behind us, will we therefore have to live with the Great Inflation of the 1970's?

Essentially, the economist answers that, given the ratchet behavior of wages and prices, the price level can only float upward to accommodate the massive relative price increases of oil, grains, certain raw materials, and imported goods. These sharp changes in the composition of supply touch off reverberating price increases throughout the economy as prices in the scarce-supply sectors become costs in the less-scarce ones. The reverberations go on—in substantial part independent of the state of aggregate demand and hence of monetary and fiscal policy—until the prices of the initiating goods have risen sufficiently farther than prices in general

to accomplish the necessary realignment of relative prices. This is the process going on now. It takes time, but not forever. It has much to do with double-digit inflation, but it does not condemn us to Weimar Republic inflation.

Solow (1975) reminds us that the supply-shift phenomenon bears a close relationship to the demand-shift analysis of the creeping inflation of the mid-1950's. At that time, the parallel process was touched off by an investment boom that put excess demand pressures on capital goods industries even when there was no excess aggregate demand in the economy. Given the downward rigidity and cost-oriented nature of wages and prices in areas of excess market power, the price level had to float upward to accommodate those relative price changes (see Schultze (1959)).

John Dunlop and other economists have emphasized that there is a closely related phenomenon on the wage side known as "scale wages" or "wage relativities" or even a "just wage" (see Robert Hall and Michael Piore). If the relative wage scale is thrown out of kilter by an outsized wage settlement in one industry, the others will writhe, twist, and turn until the old relationships are reestablished. There is only one way the wage structure can move to accommodate this process: Up. Again, the process burns itself out only when a new equilibrium has been established on a higher plateau.

The policy implications of the supply-shift, demand-shift, and wage-shift insights are reasonably clear. One is the limited scope of repressive monetary-fiscal policy in coping with this process. Another is that the key to a successful wage-price policy for these circumstances is to establish and effectuate norms for the pace-setters and thus thwart the wage-wage and price-price spirals and the interacting wage-price spiral. Once the process

is launched, the role of a wage-price watchdog with teeth would be to see to it that the adjustment process is a limited and straightforward one, not a leapfrogging sequence that will prolong the agony of adjustment. Again, understanding the economics of the process is the *sine qua non* for shaping the right policy to fit the particular type and phase of inflation that is beleaguering us.

Let me return now, before closing, to several of the abiding problems of endemic inflation that are engaging the attention and efforts of economists.

An important but elusive question for the policy maker concerns the costs of inflation. Can the economist tell him anything useful and definitive on this subject? Useful, perhaps. Definitive, no. First, the economist would remind him that people continually blame inflation for crimes it does not commit. They are sure that every increase in their pay envelope is a reward for merit, every increase in prices an inflationary theft. Especially pertinent to our present shock-spiral is the observation that people "blame inflation for changes in relative prices and in real incomes that stem from market forces that have nothing to do with the course of the general price level" (Edward Foster).

Second, studies show that in a typical U.S. inflation, the poor have gained more in jobs and incomes than they have lost in higher prices. But in the present inflation, prices have shifted sharply against the poor, and any initial gains they may have made in jobs and income in 1973 have been more than offset by the losses incurred in the deepening 1974–75 recession induced to fight inflation.

Third, at the rates of inflation experienced prior to the 1973–75 explosion, most economists find it difficult to believe that the costs of inflation—mostly in redistributive effects, but with some distortion in resource allocation—hold a candle

to the welfare losses of substantial add-ons to unemployment. Fourth, however, when inflation reaches double-digit levels, the costs in terms of the social conflicts and tensions it generates and the uncertainties and loss of confidence in the dollar yardstick it may breed are important intangibles that economists cannot ignore, yet have not been able to quantify. We need to understand far more about what unsettles and upsets people about inflation, how this affects their economic behavior, and what economic costs result. Clearly, in an economy where inflation is endemic, the balance between its gains and losses deserves intensive further study.

Another important question is this: How much of the present run-up in prices of foodstuffs, oil, and raw materials is a transitory phenomenon, how much is a one-time shift to a new plateau, and how much represents a new upward trend? Economists have trained the guns of price theory and price elasticity estimation on these questions in the case of oil and several other basic materials. They generally come up with more optimistic answers for five to ten years hence than for the near-term. But much of the answer lies in geo-political, meteorological, and similar puzzles—for example, the effectiveness of oil and other raw material cartels, the pace of world population increases and income growth, and the possibility of a dry, cold phase in world weather—that lie largely or wholly beyond the reach of economic analysis.

What we do know is this: The 1950's and the 1960's were a period of gently declining or roughly stable world prices for raw materials or foodstuffs. Now, rising population, industrialization, income, and aspirations may put such pressure on the world's supply capabilities that while we are not nearing any Club-of-Rome ultimate limits, we may for some time exceed the speed limits of stable expansion. If so

we may have passed an inflection point in the price trends of basic inputs to the economy (see Walt Rostow). The mild downward trend of the 1951–71 period facilitated the rise in real incomes of urban workers side-by-side with rising profits. If this trend is reversed, rising income claims will generate greater strains, and the Phillips curve tradeoff will take place around a higher inflation constant. Economic analysis of long-run supply prices of basic commodities using alternative assumptions regarding world political, weather, and economic trends could be a useful aid to rational economic planning.

Coming back into the domain of economics as such, one should take account of the important new thinking and efforts now being devoted to the continuing mysteries of industrial pricing policies and the role of fixed-rule (generally, mark-up) pricing as a shield against uncertainty. Answering the question of how, and how fast, supply-shifts in the auction markets or market-oriented sector are transmitted through the rule-determined sector—where certain relativities seem to be maintained in the structure of prices (and wages)—is essential to an understanding of structural inflation (see Piore).

In turn, this analysis will strongly influence thinking on government intervention in private wage-price and perhaps also supply-demand decisions. If the wage-price structure is indeed fairly rigid and if supply- and demand-shifts set off an inflationary spiral, the “natural market forces” will not readily make the necessary supply-demand adjustment in any case. Wage-price restraint or controls would not be supplanting some supple and efficient resource allocation mechanism, yet would insert a circuit breaker into the inflationary spiral. This view of the world would also suggest that government action to stimulate supply and suppress demand at certain pressure points in the economy

might well pass the test of economic efficiency. In pursuing these questions and hypotheses, the economist will be laying a firmer conceptual and empirical foundation for specifying the areas and circumstances in which intervention may be the lesser evil.

One should not leave the subject of economists' contributions to analysis and prescription on the inflation problem without mention of the intriguing attempt of the Brookings Panel on Economic Activity to bring the best analytical and empirical efforts of economists to bear directly on the problems and puzzles that confront the policymaker. In relation to inflation, the Panel has focussed much of its attention on such questions as the structure of labor markets, the Phillips curve relationship and wage equations, the costs of unemployment, price behavior in specific sectors like foodstuffs and oil, and the role of fiscal and monetary policies. Apart from the significant contributions that have been made to understanding these problems, and to bringing academic work into closer contact with current policy problems, the Brookings Panel is an interesting and perhaps unique exercise in “continuing confrontational econometrics.” Responding to the kinds of criticisms quoted earlier in my remarks, the Brookings Panel combines rigorous quantitative testing with continuing surveillance by one's peers to assure that the investigator (a) looks beyond mathematics and makes his assumptions and relations conform to common sense, (b) spells out the implications of his econometrics and, if they are implausible, tries again, and (c) constantly keeps asking questions of the model. With the Panel now going into its sixth year of thrice-yearly meetings, previous analyses become not undisturbed museum pieces, but grist for the mill of constant retesting under the harsh light of reality and peer-group criticism.

I have dealt at some length with the substance of economists' work and findings on inflation because mere assertions of progress would hardly suffice to demonstrate what's right with economics in this most vulnerable area. The fact that there are no final or comprehensive answers has not kept economists from making significant distinctions, analyses, and measurements that equip policy makers with better means of judging the policy trade-offs and determining how to improve the fit of policy-to-problem for the different types and stages of inflation. When policy makers fail to heed these lessons, as in 1974, both the economy and the economist feel the backlash.

Throughout this discourse, I have time and again been tempted to kick over the traces I fastened on myself and give voice to my own criticisms, dissatisfactions, and admonitions. But since an unholy (and unwitting) alliance of my colleagues and outside critics has amply and ably taken care of this, I felt it best to stay within my constraints in the interest of doing what I could do to redress the balance. As economists, we have many sins, none deadly, to confess. But these are far outweighed by the virtues, all quite lively, that we can legitimately profess.

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