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ECONOMIC SCIENCE, PUBLIC POLICY,
AND PUBLIC UNDERSTANDING

"Political economy or economics is a study of mankind in the ordinary business of life."

Alfred Marshall

The great achievement of "contemporary" economics has been the articulation, implementation, and public acceptance of the Keynesian revolution.¹ The gestation period extended over some three decades, highlighted by these turning points: the publication in New York in 1936 of *The General Theory of Employment, Interest, and Money*; the enactment ten years later of the Employment Act of 1946, which formally acknowledged the government's responsibility for maintaining full employment;

¹ For a discussion of the revolution and its implications, see S. E. Harris, *John Maynard Keynes: Economist and Policy Maker*, New York, Scribner's 1955; Robinson, *Economic Philosophy*, Garden City, N. Y., Anchor Books, 1964, pp. 75-100; and Heilbroner, *The Wordly Philosophers*, New York, Simon & Schuster, rev. ed. 1961, pp. 214-51.

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the official recognition in 1954 by a Republican Administration of its obligation to employ “Keynesian” weapons to fight recessions and depressions; and the statement in 1965 by the apostle of modern liberalism (John Kenneth Galbraith) that the “new economics” was the “new orthodoxy,” as well as the admission by the vicar of economic conservatism (Milton Friedman) that “we are all Keynesians now.”

The substance of the Keynesian revolution is best understood against the backdrop of pre-Keynesian orthodoxy. Except for some work on the trade cycle, economists tended to neglect the problem of full employment. They disposed of the problem simply by assuming that it did not exist, instead, devoting their attention to the study of value and distribution theory—the problem of efficiently allocating resources among alternative uses within a framework of static equilibrium, and the problem of rewarding the factors of production for their contribution to the social product. Except for “frictional” maladjustments, and occasional financial panics, there could be no problem of full utilization of available resources. Was it not Say’s law which decreed that production creates its own demand—that there could never be *general* overproduction or a deficiency in *aggregate* demand? Society would always buy what it was capable of producing: “Could we suddenly double the productive powers of the country, we should double the supply of commodities in every market; but we should, by the same stroke, double the purchasing power. Everybody would bring a double demand as well as supply; everybody would be able to buy twice as much, because every one would have twice as much to offer in exchange.” The role of government was to practice monetary and fiscal restraint, and to permit free markets to operate. Fluctuations in the interest rate would equilibrate savings and investment, and fluctuations in the wage rate would assure the full employment of labor.

In his *General Theory*, Keynes demonstrated that there was no automatic safety mechanism built into the economy. Equilibrium could be achieved, but not necessarily at the level of full employment. It was perfectly possible that 13 million people in the United States would be out of work, and that industry’s plant would be operating far from full capacity, while

one-third of the nation was “ill-fed, ill-clothed, and ill-housed.” Why? As Keynes viewed it, production does *not* create its own demand. Income recipients spend only part of their earnings on consumption; they save the rest. These savings are not necessarily soaked up by businessmen in the form of investment. *Ex ante*, savings are not always equal to investment, and this begins the downward cycle. National income depends on expenditures, either in the form of consumption or investment. But, if one of these components declines, some of the goods produced will not be sold, losses will be incurred, and workers will be discharged. This, in turn, causes a reduction in national income, which means that the economy will attain equilibrium at a level short of full employment. If full utilization of resources is to be restored, the deficiency in aggregate demand has to be corrected by stimulating either consumption or investment. And, said Keynes, this required government intervention. Specifically, it called for monetary policy designed to reduce interest rates and fiscal policy to incur a budget deficit. The role of government, he pointed out, was not to balance the budget—to avoid deficits on an annual basis—but to balance the economy at full employment. Deliberately unbalanced budgets in times of depression were the earmarks not of fiscal irresponsibility, but the very essence of sound anti-cyclical policy.

The impact of the *General Theory* was traumatic—not only on the business and financial community, but on the academic establishment as well. With few exceptions, academic economists either failed to understand the Keynesian message (insulated as they were by intellectual inertia against his categories of analysis), or greeted the book’s appearance with undisguised venom and vitriol. Keynes had committed a sin unpardonable in academia. Instead of looking for logical flaws in the conventional wisdom—in the framework of neo-classical analysis—he pointed out “that its tacit assumptions are seldom or never satisfied, with the result that it cannot solve the economic problems of the actual world.”² Moreover, the clear implications of his analysis did violence to ancient and cherished beliefs. His attack on

² J. M. Keynes, *The General Theory of Employment, Interest, and Money*, New York, Harcourt, Brace & Co., 1963, p. 378.

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thrift, for example, seemed to suggest that private virtues were public vices. His attack on the annually balanced budget seemed to point the way to reckless spending which would bring inflation and bankruptcy. His repudiation of the gold standard seemed to be an open invitation to the monetary authorities to manufacture money without restraint. In sum, the Keynesian therapy seemed too easy; it was offensive to a generation "that had been taught the virtues of thrift, of free markets, of hard work, of monetary restraints, of the gold standard, of budgetary balance, of structural changes and especially wage-cutting to meet the needs of a dynamic world."³

Nevertheless, Keynesianism made gradual progress and found increasing adherence, especially in political circles. And this is not surprising. It is politicians, after all, who cannot afford to luxuriate in ideological orthodoxy in the face of unsolved problems. Being pragmatic tinkerers, whose major ambition is to attain and retain office, they look for help from whatever source seems promising. Confronted with the need to do *something*, they could not, during the depths of the depression, persist in advocating government non-interference and patience until the natural economic forces restored prosperity. And, the Keynesian remedies seemed the best available guide to action. Without necessarily understanding the analytical aspects of Keynesian theory, and without explicit recognition of what they were doing, political leaders began to embrace Keynesian solutions and policies. As Schumpeter wryly observed, enthusiasm seldom flares for an economic theory "unless the cold steel of analysis derives a temperature not naturally its own from the real or putative political implications of the analyst's message." The Keynesian message seemed to fit the mood of the times, and politicians rather than economists were the first to reflect it.

Formal victory came to the Keynesian revolutionaries with the Employment Act of 1946, passed in the House of Representatives by a vote of 320 to 84, and in the Senate by a unanimous voice vote. While the bill finally enacted was supposed to represent a "much watered-down versions", the law still contained this unequivocal provision: "The Congress hereby declares that it is

³ Harris, *op. cit.*

the continuing policy and responsibility of the Federal Government to use all practicable means consistent with its needs and obligations and other essential considerations of national policy, with the assistance and cooperation of industry, agriculture, labor, and State and local governments, to coordinate and utilize all its plans, functions, and resources for the purpose of creating and maintaining, in a manner calculated to foster and promote free competitive enterprise and the general welfare, conditions under which there will be afforded useful employment opportunities, including self-employment, for those able, willing, and seeking to work, and to promote maximum employment, production, and purchasing power." [This language was obviously much stronger than that of its British counterpart, the White Paper of 1944, in which the Government accepted responsibility for the maintenance of a "high and stable" level of employment.]

One of the less noted aspects of the Employment Act was the machinery it established for public education in the "new economics." The American Joint Economic Committee, created by the Act, has held hundreds of hearings in which representatives from business, labor, government, and the academic community maintained a continuing dialogue on economic policy and contributed to an unprecedented understanding of, and public interest in, national income accounts and fluctuations. Similarly, the Council of Economic Advisers to the President, especially in their annual reports to Congress, has contributed mightily to the public's economic education, primarily because its statements are front-page news in the daily press, the object of editorial comment in the mass media, and the subject of Congressional discussion and debate. Together with such outstanding business groups as the Committee for Economic Development (CED) and the National Planning Association (NPA), the Congressional Committee and the Council have provided yeoman service in disseminating the doctrines of Keynesian economics, and assuring its acceptance by the business community and the general public.

A milestone in the triumph of the "new economic" came in 1954 when a Republican Administration for the first time explicitly rejected the doctrine of automaticity and proclaimed the need for government guidance of the economy in language

that is as unequivocal as that of its predecessors. "Government must use its vast power to help maintain employment and purchasing power as well as to maintain reasonably stable prices," President Eisenhower told the Congress in his 1954 message accompanying the Economic Report. He went on to say that this "is not a start-and-stop responsibility, but a continuous one," and he discussed at some length the weapons—credit, controls, debt management, "flexibility in the administration of the budget," agricultural price supports, tax policy, and public works expenditures—which the government has at its disposal for maintaining stability. He concluded, "We shall not hesitate to use any or all of these weapons as the situation may require." This position leaves no room for doubt. It indicates that even a conservative administration refuses to face the primitive ideological choice of whether a government shall be Keynesian or not. Faced with the reality of a depression, says Galbraith, such a choice would come to "nothing more or less than a choice of whether or not to commit political suicide."⁴ Under the circumstances, it seems unlikely that any future administration will think that it has a choice at all.

Under the Kennedy administration, one further significant change occurred. Prior to 1961, the government emphasized monetary and fiscal measures designed to combat recessions (or to cool off inflationary booms). Thereafter, the emphasis shifted from a mere control of cyclical fluctuations to generating an acceptable rate of economic growth. Thus, in the 1963 Economic Report, President Kennedy stated: "We end 1962 with an unemployment rate of 5.6 per cent. That is not '*maximum employment*'... We end 1962 with U. S. output of goods and services running some \$ 30-40 billion below the economy's capacity to produce. That is not '*maximum production*'... We end 1962 with personal income, wages and salaries, and corporate profits also setting new records. But even this favorable record does not represent '*maximum purchasing power*.'" In the words of Walter Heller, the President was no longer satisfied with

⁴ J. K. Galbraith, *Economics and the Art of Controversy*, New Brunswick, Rutgers University Press, 1955, pp. 60-62.

“an anti-recession, shock-absorbing fiscal policy”, but began to advocate “a gap-closing, economic propulsion policy.”⁵

The adoption by Congress of a tax cut designed to achieve higher economic growth rates—despite the danger of a temporary budget deficit—marked the ultimate acceptance of Keynesian theory and policy. This, indeed, was the new orthodoxy. Here was proof that “we are all Keynesians now.”

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Economists, says Kenneth Boulding, “can take a good deal of credit for the stabilization policies which have been followed in most Western countries since 1945 with considerable success. It is easy to generate a euphoric and self-congratulatory mood when one compares the twenty years after the first World War, 1919-1939, with the twenty years after the second, 1945-65.”⁶ But this euphoria should not be without limit; it should not becloud our perspective in assessing the achievement.

The great contribution of the Keynesian revolution was a policy framework to deal with short-run, aggregate problems of economic stability. It was an achievement in macro-economic theory and policy, cast in a time-horizon measured by months and years rather than decades and perhaps centuries. The revolution left untouched the long-run, structural problems of our economic system—the “grand dynamics” of a society metamorphosed by explosive technological and organizational change. Thus, as Boulding admits, “We still cannot handle some of the most elementary problems regarding economic development, economic dynamics, the function of the price system, the relative merits of centrally planned as against market economies, the economics of distribution, the development of the ‘grants economy,’ the behavior of economic organizations of all types, from the corporation to the foundation, the role of the price system in the developmental and learning process, the learning

⁵ W. W. Heller, *New Dimensions of Political Economy*, New York, Norton & Co., 1967. See also W. C. Freund, “Educating the Electorate: The Employment Act after 20 Years,” *Challenge*, Nov.-Dec. 1965.

⁶ K. Boulding, “The Economics of Knowledge and the Knowledge of Economics,” *American Economic Review Proceedings*, May 1966, p. 9.

process itself by which we acquire our images of our economic environment.”⁷

Let me illustrate this point by singling out, in passing, some of the areas where economists have a great deal to be humble about. One such area is the economic development of the poor countries. The abstract models which have been developed so far have yielded little guidance to the policy maker. We are still uncertain whether to emphasize massive infusions of physical capital or concentrate on education and the development of human capital; whether to rely on strategic factors to stimulate development or to promote balanced growth; whether to shield primary producers by international commodity agreements or to force them to compete in free world markets. We have not yet come up with an adequate theory or policy in this field, because we are dealing with a *total social process*—because economic development does not take place in a social and political vacuum, and because it is not easy, as Heilbroner points out, “to remake the social and political fabric of a nation just emerging from a tradition-bound past. An uncomprehending peasantry must be converted into a modern farming population; a ragged corps of casual laborers must be made over into a disciplined work force; bazaar-minded traders must become production-oriented entrepreneurs; nepotistic and corrupt state bureaucracies must change into reliable civil servants. Until these changes begin, economic development has to wait. But to put these changes into effect is, in fact, to overthrow a whole way of life—and very often, to overthrow a government and a social order wedded to that way of life.”⁸ Economists know little about this total social process. Their conclusions to date amount to little more than the insight that the problem of underdevelopment would be solved if underdeveloped nations were not cursed with all the accoutrements of underdevelopment.

A second area in which economic theory and policy are “underdeveloped” is in dealing with the structural problem of social imbalance—private affluence and public poverty. In the whimsical words of John Kenneth Galbraith, “The family which

⁷ *Ibid.*, p. 13.

⁸ Heilbroner, *op. cit.*, p. 285.

takes its mauve and cerise, air-conditioned, power-steered and power-braked automobile out for a tour passes through cities that are badly paved, made hideous by litter, blighted buildings, billboards, and posts for wires that should long since have been put underground. They pass on into a countryside that has been rendered invisible by commercial art... They picnic on exquisitely packaged food from a portable icebox by a polluted stream and go on to spend the night at a park which is a menace to public health and morals. Just before dozing off on an air mattress, beneath a nylon tent, amid the stench of decaying refuse, they may reflect vaguely on the curious unevenness of their blessings. Is this, indeed, the American genius?"⁹ The problem has been identified; it awaits a theoretical formulation and a systematic policy prescription.

A third area is the problem of structural unemployment, elaborated in the work of Charles C. Killingsworth. Here we find that such factors as "the existing skill and quantity of available labor, the existing quality and quantity of available equipment,... [and] the tastes and habits of the consumer"—which Keynes assumed as "given" for purposes of his *short-run* analysis—may have a significant effect on the level of employment, perhaps even in the short run. In other words, unemployment may have a "structural" component side by side with its "aggregate" or "macro" component. According to Killingsworth, the American Negro is the outstanding example of structural unemployment, and he finds it striking that in a period of unparalleled economic expansion (from the first quarter of 1964 to the last quarter of 1966), the average unemployment rate for Negro teenagers actually increased by 3 per cent, while the national average for all groups declined some 30 per cent. As the Department of Labor concluded, after an extensive survey and analysis, no conceivable increase in GNP *alone* could ever stir the backwaters of the ghetto labor market sufficiently to absorb these people into the labor force. Indeed, according to Killingsworth, without the Vietnam-related draft calls and such special programs as Manpower Retraining and Neighborhood Youth Corps, our

⁹ J. K. Galbraith, *The Affluent Society*, Boston, Houghton Mifflin Co., 1958, p. 253.

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current unemployment rate might well be around 5 per cent—in addition to a politically embarrassing rate of inflation. While macrotheorists still persist in the facile assumption that labor markets are sufficiently “perfect” to adjust to any problems that might arise from structural changes, it is probably more true to say that “labor markets are less adequate than any other type of factor or product market in the economy.”¹⁰ Neither theory nor policy has yet taken account of this stubborn fact.

A fourth area of deficiency in theory and policy is the problem of “inflation in the midst of recession”—the relation between administered prices and “cost-push” or “seller’s” inflation. To our chagrin, we have discovered that trade unions have considerable power over wages, and business oligopolies can exercise substantial influence over prices. Within limits, they can dictate to the market rather than submit to dictation from the market; they can be “price makers” rather than “price takers.” And, such exercise of market power may interfere with the operation of contra-cyclical monetary and fiscal policy which is geared only to coping with “demand pull” inflation, and abstracts from the existence of structural impediments. This means that public policy may be confronted with the dilemma of steering a course between price stability and full employment, and the necessity of a trade-off between some unemployment in return for some price stability. As Samuelson concedes, “there is good reason to fear that America may, along with other lands, suffer from an institutional problem of cost-push. I mean by this that at levels below those corresponding to reasonably full employment, our institutions of wage bargaining and price setting may be such as to lead to a price and wage creep, a creep which can be lessened by conventional depressing of demand by monetary and fiscal policy measures but only at the cost of creating greater unemployment and excess capacity.”¹¹ Here again is a structural

¹⁰ C. C. Killingsworth, *Structural Unemployment in the United States*, Washington, U. S. Department of Labor, December 1965; and *Jobs and Income for Negroes*, Ann Arbor, Institute of Labor & Industrial Relations of the University of Michigan and Wayne State University, May 1968.

¹¹ P. A. Samuelson, “A Brief Post-Keynesian Survey,” in R. Lekachman (ed.), *Keynes’ General Theory: Reports of Three Decades*, New York, St. Martin’s Press, 1964, p. 339.

problem the existence of which has been identified but which both theory and policy have so far been unable to cope with effectively.

Finally, and this is the area which I propose to discuss in some detail, is the problem of economic power in an advanced industrial society like ours. This, in my opinion, is the most central and pervasive structural problem in an advanced industrial society. It is a problem which, in spite of notable exception, has been neglected in economic theory, and ineffectually dealt with by economic policy. A cynic might say that economists have ignored the nature, significance, and impact of economic power in the hope that, by ignoring it, the problem would somehow politely slink away.

As a general rule, the micro-theorist contemplates a "simplified" world, peopled by rational entrepreneurs, who are owner-managers of single-plant, single-product firms, operating in single markets, and dutifully maximizing short-run profits by following the time-tested rule of equating marginal cost and marginal revenue. Decisions are made with a view toward the market, which usually turns out to fit the competitive mode, but sometimes approximates oligopoly or monopoly. It is a world in which power *per se* is unknown, except with reference to particular firms, particular products, and particular markets. It is a world untroubled by conglomerate giants and undisturbed by technological upheavals—an *economic* world, separate and distinct from the world of power politics.

The real world, of course, conforms more closely to *The New Industrial State* where corporate concentration and corporate power are the paramount facts of life. Here, as Galbraith shows, the giant corporation has achieved such dominance of American industry that it can control its environment and immunize itself from the discipline of all exogenous control mechanisms—especially the competitive market. Through separation of ownership from management, it has emancipated itself from the control of stockholders. By reinvestment of profits, it has eliminated the influence of the financier and the capital market. By brainwashing its clientele, it has insulated itself from consumer sovereignty. By possession of market power, it has come to dominate both suppliers and customers. By judicious identification

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with and manipulation of the state, it has achieved autonomy. Whatever it cannot do for itself to assure survival and growth, a compliant government does on its behalf—assuring the maintenance of full employment, eliminating the risk of and subsidizing the investment in research and development, and assuring the supply of scientific and technical skills required by the modern technostructure. In return for this privileged autonomy, the industrial giant performs society's planning function¹².

This model, despite its Pickwickian exaggeration and its lack of elegant precision (which economists value so dearly), does have descriptive value. It does portray, with a fair degree of accuracy, the nature of corporate power and industrial giantism. But it leaves unanswered, like other models enjoying wide currency, what to do about the phenomenon it describes. Indeed, the explanation it offers turns out to be a rationalization for doing nothing at all. Like the doctrine of corporate stewardship, countervailing power, and creative destruction, it is in essence a defense of the *status quo*.

(1) According to the doctrine of corporate stewardship, modern business executives are no longer the robber barons of yesteryear. They are no longer animated by the archaic and carnivorous drive for profits, but rather are guided by a social conscience—that delightful and ethereal fiction which A. A. Berle calls the corporate soul. In the words of the former president of the Corn Products Refining Company, “An active social conscience... and individual recognition of social responsibilities will compel, us, as individuals, to test every managerial practice, measure every policy by a single yardstick. Not ‘what does it mean for me’ but rather ‘what will this mean to my workers as people, to my customers, to my suppliers, to my stockholders, to the community in which my plant is located, to my government, to the industry of which I am a part, to the economy as a whole?’” In our pluralistic society, it would seem, modern managers have come to be possessed by a “plural” soul.

Corporate stewardship, argues Berle, can be an ameliorator

¹² J. K. Galbraith, *The New Industrial State*, Boston, Houghton Mifflin Co., 1967.

of great power and a protective shield against exploitation. If only there were "a keeper of conscience, to whom appeal could be made, by whom inquiry and a fair hearing must be provided, and from whom a humanely fair decision can be had," the present concentration of economic power would not only be tolerable but workable. The corporate conscience could then function in our economy much like the royal or baronial conscience did in feudal times. Giantism would then be compatible with the public interest.¹³

In terms of public policy, the doctrine of social responsibility became the basis for the economics of admonitionism under President Eisenhower, and for the wage-price guidelines under President Kennedy. Both administrations admonished "leaders of industry and leaders of labor to look upon the precarious state of our sound economy, imperiled by burgeoning inflation and yawning recession, to commune with their conscience in the vast stillness imposed by the solemn responsibility which is theirs, and voluntarily to restrain, and even reverse, their age-old propensities and proclivities in the matter of prices and wages."¹⁴ The results of this moral suasion, as we now know and should have anticipated, were not only unspectacular, but almost imperceptible.

Corporate stewardship, and the policy based thereon, suffer from several obvious defects. *First*, the corporate conscience, at best, is a permissive rather than compulsive control mechanism. It permits action in the public interest; it does not systematically and predictably compel it. Unlike the invisible hand of Adam Smith or the heavy hand of government, it does not provide an organizing principle for social decision making. It does not solve the problem of allocating society's resources in accordance with society's preference scales. *Second*, it offers no practical *economic* guidelines to the possessors of great power like General Motors, U. S. Steel, and duPont. Faced with labor's demand for higher wages and fringe benefits, the Consumer's interest in lower prices,

¹³ A. A. Berle, *The Twentieth Century Capitalist Revolution*, New York, Harcourt, Brace & Co., 1954, pp. 76-77, 62-63. See also Berle, *Power Without Property*, New York, Harcourt, Brace & Co., 1959.

¹⁴ Ben W. Lewis, "Economics by Admonition," *American Economic Review Proceedings*, May 1959.

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the stockholder's desire for higher profits, the White House pressure for full employment and price stability, "management—as allocator, distributor, stabilizer, trustee, conservator, prophet and chaplain, as well as manager—consults its *conscience*. The diagnosis of the attending psychiatrist will be 'multiple schizophrenia'—the management's personality will not be split, it will be shredded and powdered!"¹⁵ *Third*, the corporate conscience offers no practical *ethical* guidelines. In the modern economy which is a highly interdependent network of large bureaucratic organizations, and the diffusion of personal responsibility that goes with it, how is the corporate conscience to be made a living reality? *Fourth*, the corporate conscience does not answer the question of responsibility and accountability. How and by whom are its possessors anointed? To whom are they accountable? How can they be punished for nonfeasance or misfeasance? If "justice" is to depend on an appeal to Berle's baronial conscience, to whom shall the appeal be addressed and how is the addressee to be chosen? What if he cannot hear or refuses to hear? How can he be forced to listen? How can he be forced to act? In a democratic society, these questions cannot be left unanswered.¹⁶

In sum, a policy based on the corporate conscience and governmental admonitionism is a symptom of, not a cure for, a basic structural flaw in our economic architecture. It is an organic defect which cannot be ignored in the long run.

(2) The countervailing power thesis, like the doctrine of corporate stewardship, concedes the pervasiveness of concentration and monopoly, but maintains that the dangers of exploitation are minimized by certain built-in safeguards in our economy. According to this thesis, the actual or real restraints on a firm's market power are vested not in its competitors, but in its customers and suppliers. These restraints are imposed not from the same side of the market (as under classical competition), but from the opposite side. Thus "private economic power is held in check by the countervailing power of those subject to it. The first begets the second." A monopoly on one side of the

¹⁵ *Ibid.*

¹⁶ W. Adams, "Corporate Giantism, Ethics and the Public Interest," *Review of Social Economy*, vol. XXI, March 1963, pp. 3-6.

market offers an inducement to both suppliers and customers to develop the power with which they can defend themselves against exploitation. For example, concentration in the steel industry will stimulate concentration among the industry's customers (automobile manufacturers) as well as among its suppliers (steel workers); supermarket chains will extract discounts from powerful soap oligopolists; and consumer cooperatives will be the farmer's defense against agricultural equipment manufactures. The results will be, so the argument runs, a balance of power within the economy—the creation of almost automatic checks and balances requiring a minimum of interference or “tampering.”¹⁷

The countervailing power theory (and policy), developed by Galbraith in 1952 and apparently abandoned fifteen years later in his *New Industrial State*, suffers from some serious weaknesses. *First*, it is often undermined by vertical integration, top-level financial control, and contractual arrangements which blend the opposing sides of the market into one. Steel manufacturers buy out steel fabricators; oil refiners control retail outlets; copper producers acquire mining interests; automobile companies dominate franchised dealers, etc. *Second*, the bilateral monopolies (or oligopolies) created by the countervailing process often conclude bargains which may resolve conflict between them, but are not necessarily in the public interest. A wage increase for the steel union is regularly followed by an increase in steel prices; a guaranteed annual wage for auto workers is the signal for higher automobile prices; an industry's drive for tariff protection is generally (and zealously) supported by its workers and suppliers—indeed by every organized group up and down the vertical chain except the industry's customers. *Third*, countervailing through government action is often undermined by unduly intimate affiliation between regulator and regulatee. Witness, for example, the degeneration of the Interstate Commerce Commission, an erstwhile bulwark against monopolistic exploitation, into a public lobby for railroad interests!¹⁸

¹⁷ J. K. Galbraith, *American Capitalism*, Boston, Houghton Mifflin Co., 1952.

¹⁸ W. Adams, “Competition, Monopoly and Countervailing Power,” *Quarterly Journal of Economics*, November 1953.

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In sum, as the empirical evidence shows, countervailing power is in reality coalescing power between vertical power blocs. It gives way to reinforcing power as, for example, in the military-industrial-labor complex. It is not an adequate mechanism for controlling concentrated power, but a theory to rationalize its existence and promote its public acceptance.

(3) The Schumpeterian doctrine of creative destruction is yet another justification of the *status quo*. It not only concedes the existence of vast economic power aggregations, but welcomes their existence as a long-run instrument of economic progress. According to Schumpeter, the capitalist process is rooted not in classical price competition, but rather “the competition from the new commodity, the new technology, the new source of supply, the new type of organization—competition which commands a decisive cost or quality advantage and which strikes not at the margin of the profits and outputs of existing firms but at their very foundations and their very lives.”¹⁹ The very essence of capitalism, according to Schumpeter, is the “perennial gale of creative destruction” in which existing power positions and entrenched advantage are constantly displaced by new organization and new power complexes. This gale of creative destruction is, therefore, not only the harbinger of progress, but also the built-in safeguard against the vices of monopoly and privilege.

Of course, what was obvious to Schumpeter and other analysts of economic power, was also apparent to those who might suffer from the gales of change. They quickly and instinctively understood that storm shelters had to be built to protect themselves against this destructive force. The gale which brought undoubted public benefits carried with it exorbitant private costs. And, since private storm shelters in the form of cartels and monopolies were either unlawful, unfeasible or inadequate, they turned increasingly to government for succor and support. By manipulation of the state for private ends, the possessors of entrenched power found the most felicitous instrument for insulating themselves against, and immunizing themselves from, the Schumpeterian gale.

¹⁹ J. A. Schumpeter, *Capitalism, Socialism, and Democracy*, New York, Harper & Bros., 1943, p. 84 et ff.

Examples are not hard to find. The petroleum industry runs a government-sanctioned and government-subsidized cartel, protected from both domestic and foreign competition. Its *Ordnungswirtschaft* is maintained with the help of the Bureau of Mines forecasts of market demand, the Interstate Oil Compact, the state pro-ration regulations, the federal prohibitions against the sale of "hot oil" in interstate commerce, and federally supervised restrictions against oil imports. Its special favors, including the 27½% depletion allowance, amount, to an estimated \$ 3.5 billion (Milton Friedman) or \$ 4.0 billion (Morris A. Adelman) annually. Similarly, the dominant firms in the aerospace industry are not only given the inside track in modern technology by cost-plus government R & D contracts, but allowed to patent inventions developed at public expense. The steel industry, basking in its oligopolistic lethargy and technological backwardness, seems on the verge of getting government tariff and/or quota protection against import competition. In short, in an era of Big Business, Big Labor, and Big Government, there is emerging a system of neo-mercantilism where government creation, protection, and subsidization of private privilege are the order of the day. In such an institutional fabric, the gales of creative destruction are a utopian policy at best, and a Kafkaesque fantasy at worst.

Of course, there are alternatives, but these do not command professional consensus among economists. The antitrust laws are dismissed either as a meaningless charade, or as an anachronism from the horse-and-buggy age—a policy which runs counter to the supposedly inevitable and inexorable trends of modern technology. Government regulation of the "independent commission" variety is in rightful disrepute as the least felicitous experiment in American economic statecraft. Public ownership, whatever its dubious virtues may be, seems totally unrealistic as an American solution to a Western dilemma. And so, like other structural problems, the concentration of economic power remains unsolved and neglected by our profession. Neither theory nor policy has coped with it effectively; and leading economists—lost in the endless desert of matrix algebra and the trackless wastes of differential calculus—say, as they are so fond of saying, that further research is indicated.

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Finally, a word about methodology which, of course, is related to the triumphs and failures of contemporary economics. It is an area in which undoubtedly the dominant characteristics and trends in recent years have been the emphasis on mathematical economics and econometrics.

At the latest meetings of the American Economic Association, says *Business Week*, it was clear that "econometrics is changing the profession by changing its methods. Gone, for the most part, are the old schools which were worlds apart: the theorists who scratched their heads and told the future with imagination and a dash of casual empiricism, and the so-called institutionalists who looked at the human factors involved—trade unions, Congress, giant corporations, and the ego—and said, 'Theory is no good. Theory is no good. Theory is no good.'" Modern economists, whether liberal or conservative, from Chicago or Harvard, are all "looking at numbers, fitting equations, estimating probabilities, and drawing inferences about the way the economy has operated, does operate, and probably will operate."²⁰ They are playing the econometric game which starts with theory, adds data, feeds them into computers, and then uses sophisticated statistical guesswork to get a better understanding of economic reality and a more scientific guide to public policy.

Undoubtedly, this new breed of economist, with the aid of computer technology, has made substantial contributions, especially to the development of operations research and management science. Operations research scholars have done commendable work in refining input-output analysis; developing linear, integer, and quadratic programming; and applying the Markov chains (random walk with absorbing barriers). Welfare economists have explored the inconsistency of group choice (the voting paradox), and experimented with cost-benefit analyses of public investment. Mathematical theorists have developed the existence theorem (the existence and uniqueness of equilibrium), the turnpike theorem (optimal growth patterns), and decomposability theorems. Mathematical forecasters have built more than a dozen

²⁰ "The New Potentates Rule by the Numbers," *Business Week*, Jan. 6, 1968, p. 56.

econometric models of the American economy—complete with projections of GNP and its individual components.

On the other hand, it must also be recognized that we have paid a price for the benefits obtained. We have incurred costs, some of them hidden costs, and the least that should be done is to make these costs explicit. *First*, the mathematical-econometric approach, with its emphasis on abstract model building, has either transcribed into a different (more esoteric) language the tautologies which economists have dealt with for a long time, or developed formulations which are based on such unrealistic and confining assumptions that they are of little practical usefulness. Thus, the statement that to maximize profits one should operate a firm where marginal revenue equals marginal cost can be expressed as a mathematical theorem. It is a tautology—a theory with zero predictive value. The same holds true for other propositions about how to maximize something under given constraints. These propositions do not represent new economic insights, and their articulation in mathematical language cannot be credited so much to the brilliance of our profession as to the development of computer technology.

The empirical validity or policy relevance of this mathematical model building is a more serious matter. Even Keynes, hardly an incompetent in his command of mathematical tools, decried what he contemptuously referred to as the “pseudo-mathematical” method. “Too large a proportion of recent ‘mathematical’ economics,” Keynes wrote, “are mere concoctions, as imprecise as the initial assumptions they rest on, which allow the author to lose sight of the complexities and interdependencies of the real world in a maze of pretentious and unhelpful symbols.”²¹

If this was true thirty years ago, when the fascination with the “pseudo-mathematical method” was a harmless fad, it is even truer today when that erstwhile fad has become an almost preclusive obsession. And this is being increasingly recognized by some of the outstanding practitioners of the mathematical art in economics. “Seldom, in modern positive science, has so elaborate a theoretical structure been erected on so narrow and shallow a factual foundation,” writes Wassily Leontief, the

²¹ Keynes, *The General Theory* cit., p. 298.

father of modern input-output analysis. "...[M]athematics has without doubt been recognized as the *lingua franca* of economic theory and most of the current work in the field of economic theory is deviated to proofs of formal theorems derivable from more or less arbitrarily chosen sets of axiomatic assumptions and, what is essentially the same, a large-scale production of new mathematical models... Past experience does not seem to indicate that the most sophisticated of such exercises and the most complicated of mathematical models have made exceptionally noteworthy contributions to the operational understanding of the tangible—as contrasted with the hypothetical—reality."²²

To this assessment, Paul Samuelson, possibly the leading contemporary mathematical economist, adds this sobering observation: "The first duty of an economist is to describe what is out there: a valid description without a deeper explanation is worth a thousand times more than a clever explanation of nonexistent facts."²³

Second, the overemphasis on the mathematical-econometric approach has resulted in a formidable misallocation of intellectual resources. Economists have tended to ask themselves questions that can be analyzed with their new techniques, rather than finding techniques to deal with the questions they *ought* to ask. They play games they find amusing, rather than contemplating issues that are crucial and pressing. They quantify what appears to be quantifiable, even though it may not be important, and pass up what should be analyzed even though it may be decisive.

As Boulding points out, "The plain fact is that economists have neglected the study of technical change at the structural and micro level to the point where we are quite incapable of answering many of the most important questions of our day. We have been obsessed with macroeconomics, with piddling refinements in mathematical models, and with the monumentally unsuccessful exercise in welfare economics which has preoccupied

²² W. Leontief, *Essays in Economics*, New York, Oxford University Press, 1967. See also symposium on this subject in *Review of Economics and Statistics*, November 1954, pp. 357-86.

²³ P. A. Samuelson, "A Brief Survey of Post-Keynesian Development," in Lekachman (ed.), *Keynes' General Theory: Reports of Three Decades*, New York, St. Martin's Press, 1964, p. 340.

a whole generation with a dead end, to the almost total neglect of some of the major problems of our day... The whole economics profession, indeed, is an example of that monumental misallocation of intellectual resources which is one of the most striking phenomena of our times.”²⁴

Technique has taken precedence over substance. Economists are busily computing the GNP of underdeveloped countries, even where this is just an exercise in statistical imagination; and, even if their computations were accurate, their results would not give them a valid measure of social welfare or a reliable index of national growth. They toy with mechanical models of economic development—capital-output ratios, and even input-output—and neglect the influence of the learning process which may be a far more significant factor in promoting economic growth. They scurry about, as if they tried to understand the operation of the internal combustion engine by reading the dials and gauges on the dashboard, instead of lifting the hood and looking at what is underneath. In short, they have not yet learned that algebra and geometry are a complement to, not a substitute for, thought—that what an IBM philosopher “calls the ‘gigo principle’ (that is, garbage in, garbage out) is not a sound approach even to the most elegantly computerized simulation.”

Third, the mathematical-econometric approach, aside from its limited usefulness to date, contains within itself the danger of self-delusion and self-deception. Because of its apparent precision and its aura of scientific certainty, it may mislead its “consumers” into thinking that they have obtained an understanding of events and a control over their flow which, in fact, is not true.

Scholars are only now, and belatedly, beginning to discover the pitfalls in their purely mechanical techniques. When they explore the applications of systems analysis to social change—the “living” problems of riot control, waste disposal, urban renewal, and mass transportation, for example—they find that the cool logic of mathematics is less useful than in dealing with the “inertness” of complex military machines. A modern socio-economic system, such as a city or the transportation complex in the Boston-to-Washington corridor, has little of the “harmonious arrangement

²⁴ Boulding, *op. cit.*, p. 12.

or pattern” that the dictionary definition of “system” would imply. Indeed, as the president of the Operations Research Society of America concedes, “As we move closer and closer to human beings, human life, and to its goals, we find that we are dealing with progressively more and more difficult problems.”²⁵ That is why, he insists that systems analysis, if it is to be effective, requires “people-oriented people” to work on these problems.

Mechanical systems analysis and mathematical model building, when applied without sensitivity to the dynamics of an organic social process, may exacerbate rather than remedy the economic ills of our time. But their most dangerous application lies in the military field—the “diplomacy of violence” and the contemplation of “the unthinkable.” Here, the use of game theory, that status symbol of the mathematician-economist, can have truly disastrous results. Consider for a moment the meaning and significance which State Department or Defense Department officials might attach to the following conclusions, derived with scientific rigor from the mathematical models of a noted economist, Thomas C. Schelling! In world affairs, says Schelling, “With enough military force a country may not need to bargain. Some things a country wants it can take, and some things it has it can keep, by sheer strength, skill, and ingenuity... Forcibly a country can repel and expel, penetrate and occupy, seize, exterminate, disarm and disable, confine, deny access, and directly frustrate intrusion or attack. It can, that is, if it has enough strength. ‘Enough’ depends on how much the opponent has.”²⁶ In a war, Schelling avers, “the side first motivated to announce its terms could be either the stronger or weaker, the one most hurt or least hurt, the one with the most yet to lose or the one with the least yet to lose, the one that started the war or the one that did not—and it might not be clear who started it, who had been hurt worse, or who eventually had the most yet to lose.”²⁷

One might be tempted to dismiss the foregoing as sterile

²⁵ “Systems Analysts Baffled by Problems of Social Change,” *N. Y. Times*, March 24, 1968, p. 28.

²⁶ T. C. Schelling, *Arms and Influence*, New Haven, Yale University Press, 1967, p. 1.

²⁷ *Ibid.*

“doublethink”—some sixteen years premature—were it not for the uncomfortable thought that, at this moment, our experts in operations research, game theory, and cost-benefit analysis are calculating the impact of American military power in these mechanical, non-human, non-dynamic, and misleading terms.

Fourth, the mathematical-econometric approach militates toward a degree of professional super-specialization which, *in extremis*, may result in serious sub-optimization. Economic problems are analyzed in a fashion to meet the procrustean exigencies of the method used. They are cast in a narrow frame of reference which abstracts, to whatever extent necessary, from economic reality—i.e., *organic totality*—primarily to maximize the value of the economist’s investment in his specialized bag of tools. Because the “scientific” economist has a certain “mind-set” in favour of his own skills, “it is easy for him to leave out essential variables with which he is not familiar.” Not recognizing that a little learning may be a dangerous thing, he falls prey to sub-optimization—“that is, finding and choosing the best position of part of the system which is not the best for the whole.” And so it happens that, trapped by self-imposed overspecialization, “too many experts devote their lives to finding the best way of doing something that should not be done at all.”²⁸

One consequence of this methodological specialization has been a major redefinition of the scope and function of economic science. Such questions as “what is economics?” and “who deserves to be called an economist?” elicit some curious answers in the “modern” context. The charmed circle around our profession is ever more tightly drawn; the club is becoming progressively more exclusive; and, specialization by method, rather than subject matter, has become the crucial criterion for deciding on inclusion or exclusion.

The cost of overspecialization which, incidentally, also infects social sciences other than economics, has been cogently set forth by Alfred North Whitehead—more than 30 years ago. “Each profession makes progress,” he said in *Science and the Modern World*, “but it is progress in its own groove. Now to be mentally in a groove is to live in contemplating a given set of abstractions.

²⁸ Boulding, *op. cit.*, pp. 10-11.

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The groove prevents straying across country, and the abstractions abstract from something to which no further attention is paid. But there is no groove of abstractions which is adequate for the comprehension of human life." The result is a "celibacy of the intellect which is divorced from the concrete contemplation of the complete facts." Moreover, there is great danger in this over-specialized professionalism, particularly in democratic societies. "The directive force of reason is weakened. The leading intellects lack balance... The task of coordination is left to those who lack either the force or the character to succeed in some definite career... The progressiveness in detail only adds to the danger produced by the feebleness of coordination."²⁹ In short, a narrow professionalism, built on methodological elitism, is not what economists would call a "free good."

Finally, and this is related to all the foregoing defects, the mathematical-econometric approach has changed the "entry conditions" in our profession, and given birth to a new breed of economist. This latterday "scientist" tends to ignore the simple truism that technique is a means of solving problems as well as a status symbol to impress one's friends—that language is a vehicle for communication as well as an esoteric art. Being "hooked" on a method, he seldom assesses his work in terms of usefulness, relevance, validity, and truth. A methodological addict, he shows singular unconcern with the world as it exists. His standard of success—his pay-off matrix—is to impress the tastemakers of an ever-narrowing professional specialty. He is more and more cut off from specialists in other fields, and finds it increasingly difficult to communicate with the lay world. The result is a sort of apartheid: economists are no longer able to see the real world, and the world no longer can understand what economists are saying.

Here is a case of circular causation. The mathematical-econometric approach has certain technical limitations. This means that it can be used only on certain problems. These problems tend to fall into the category of abstract model building. Policy-oriented students, interested in working on real problems,

²⁹ A. N. Whitehead, *Science and the Modern World*, New Haven, Macmillan, 1925.

and motivated to make this a better world, are “turned off” by that kind of discipline. While such students go elsewhere, those “turned on” by methodological onanism flock to economics. The fascination with method becomes progressively more of a cult. The circle of the “elect” becomes more tightly drawn. Communication becomes more restricted, professional segregation more entrenched. The emphasis on method becomes all the stronger. And the cycle starts again—with cumulative impact and velocity.

What, then, is the upshot of these criticisms? What more can be said than to join Whitehead in his appeal for balance? “Wisdom,” he said, “is the fruit of balanced development. It is the balanced growth of individuals which it should be the aim of education to secure... In the Garden of Eden Adam saw the animals before he named them; in the traditional system, children name the animals before they see them... There is something between the gross specialized values of the mere practical man, and the thin specialized values of the mere scholar. Both types have missed something.”³⁰ A viable profession must have men of different talents, using different tools, toiling in its vineyard. Only then can it hope to produce a rich harvest for the society which maintains it, and of which it must be an integral part.

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My overall conclusion takes the form of an intuitive prediction: given present trends in economics, society may decide that economics is too important to be left to the economists; or, it may decide that economics is not important at all.

³⁰ *Ibid.*