Computer economics as a brainwashing tool

by David Goldman, Economics Editor

No one would take seriously the admitted frauds of the Club of Rome's "Limits to Growth" model were its premises not deeply prepared for throughout American business and government, and to some extent in the population itself. What is most disturbing about the original Meadows-Forrester linear forecast of global calamity, and its successor, the "Global 2000" world model, is not merely that they juggle their numbers to fit specious pre-arranged conclusions, but that the perpetrators of these models would feel confident enough to present such an evident fraud in hope of getting away with it.

The success of the final "sting" in a confidence game—the point at which the mark turns over his money—depends on a chain of smaller deceptions, each of which so disorients the mark that he may, at last, throw aside his suspicions, common sense, and money all at the same time. The classic confidence games turn on a familiar array of objects which pretend to be a key to instant riches: a lost wallet, a palmed playing card in three-card monte, a secret means of obtaining racetrack results early, a chain letter, and so forth. In this case, the means of distraction has been the *digital computer*. If it is possible to summarize the suicidal management practices of American industry in a single maxim, it would be the substitution of computer-based data processing for replacement of fixed capital as a source of profits, the message of the Jacob Marshak school of "information theory."

That is not to underrate computer technology as such, but merely to insist that technology has proper uses defined by the current state of man's ability to transform nature. The greatest technological progress in wood-burning stoves has taken place during the past 10 years, almost doubling the efficiency of now available such devices. But to the extent that anyone might argue—as the conservation fanatics indeed have—that an improvement in the technology of wood-burning justifies the widespread use of wood as a heat source, they are to be recommended to psychiatric care. Computers have been applied to cheapen the cost of white-collar functions in business enterprises, but in such a way as to underwrite the parasitical expansion of clerking functions at the expense of industrial employment.

In the 35 years since the end of the Second World War, the percentage of goods-producing employees in the U.S. labor force has fallen from 66 to 32, and the present devastating industrial decline will push it down even further. In absolute terms, the industrial labor force has not increased since the late 1950s, and has fallen in absolute terms since 1971. Meanwhile the absolute number of clerks and other administrative personnel has risen from 7 million to more than 20 million, or by a factor of three. The productivity, meanwhile, of our dwindling industrial labor force rose only marginally (1.6 percent annually) during the decade to 1978, and not at all since then. The computer has been the great catalyst of this change. Far in excess of its weight in overall production—computer sales of $26 billion in 1980 were half those of the auto industry—the computer industry persuaded other industries to adapt their policies to its methods, with the just-cited lamentable results.

That the computer industry's pretensions to the role of technological vanguard were a hollow fraud has been proven remarkably well by the Japanese, who now threaten to out-compete the American producers on their own terrain. Japan's Fujitsu Company, for example, has obtained research and development results equal to or better than IBMs, with barely one-tenth the research budget, in such fields as the development of super-fast chips. Already, the Japanese are better equipped in physical production of semiconductors. But most important is Japan's use of a technology developed first in the United States, in industrial control applications. Japan now has more than five times the American number of industrial robots in operation, and has several fully computer-controlled factories on line.

IBM's little secret

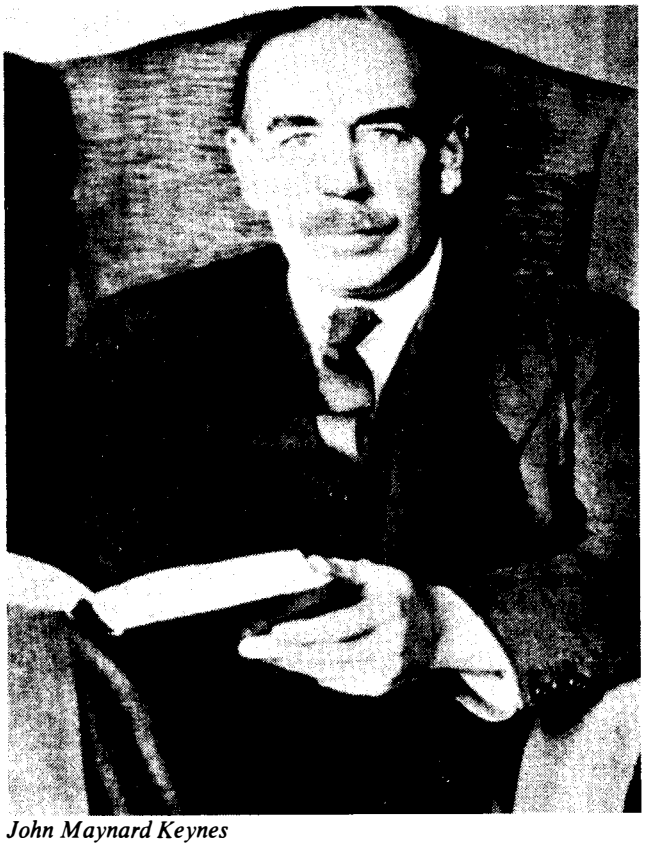
That is not to hold Japan up as a model, but to note that the application of computer technology in the most obvious rational ways would seem impressive next to the perverse practices dominant in the United States. It would seem that the widespread introduction of computers would have led to precisely the opposite results we have seen here. Optical scanning devices linked to data-processors would have eliminated millions of unrewarding clerking jobs, standard computer forms would have replaced the welter of invoice and inventory forms now prepared manually, and a substantial portion of the labor force would have been freed up for better employment. But the industry's guilty little secret is that International Business Machines has never once been interested in efficiency of corporate administration. Its business is to transform the outlook of corporate management by fixating its attention on computers. With their IBM mainframes, corporations bought not merely a machine, but also its following of systems planners, consultants, programmers, and repairmen. The attention of management shifted to what uses this electronic miracle might be put.

Of course, if management had much propensity to resist the new outlook, the flim-flam of IBM salesmen would not have meant much. U.S. Steel's executive suite has been a division of Morgan Stanley, and Ford management has been dominated by Goldman Sachs, since the war. But it is one thing to dominate a corporation with an anti-industrial outlook at the top, and another to transform an organization of several tens of thousands of apparently normal people into an instrument for suppressing investment and new technologies. For this the computer was indispensable.

Only when both corporations and the government—most emphatically, Robert McNamara's Pentagon—had begun to worship the digital computer as the guide to corporate management did it become possible to take a further, if long-prepared step, and persuade the nation's leaders that computers were the key to planning the future. Computer-based futurology began under the sponsorship of the vanguard of computer misusers, the American Council on Life Insurance, in the mid-1960s, and took hold in a handful of pace-setting corporations. By the time Meadows and Forrester released their precooked results with a computer gloss, most of the American leadership had abandoned its mind to the new Delphic Oracle, whose name the Rand Corporation, with a fine sense of historic irony, took for its own strategic planning project.

We are now witness to the big payoff, the "sting." The campaign to persuade the world to commit suicide began, in formal terms, among a handful of professed Malthusians at the University of Vienna and Cambridge University in England. Cambridge was the laboratory where the flotsam of pre-war Vienna dug out Parson Malthus' fraudulent population theory and re-furbished it for circulation in the capitalist world (through J. M. Keynes) and to the new Soviet republic (through Oskar Lange and Michael Kalecki). Through Cambridge, Princeton, and Columbia Universities, as well as the University of Chicago, it became the subject of the Wells-Russell-Carnap World Congresses on the Unification of the Sciences, and thence passed into the Allied military scientific establishment, finding its apotheosis in the postwar Strategic Bombing Survey, and picking up the first MIT digital computers en route. The alchemy was transferred from the Strategic Bombing Survey and Air Force Intelligence to the latter's civilian installation, the Rand Corporation, in 1977; and from Rand what later became known as "systems theory" permeated every economics department at major universities in the United States and several major corporations. The Air Force systems "whiz kids" took over and nearly ruined Ford Motor Company. When Ford's President, Robert McNamara, became Defense Secretary in 1961, the American military became the center for the dissemination of systems theory back into the corporate sector.

Cambridge's half-century-old plan to poison both the United States and the Soviet Union with the same Malthusian doctrine grew into institutional form with the 1971 founding of the Vienna International Institute for Applied Systems Analysis (IIASA), which combined the Wharton, Rand, and Yale Malthusians with the second generation of "Cambridge Communists" in Eastern Europe. The new Delphi at IIASA now controls not merely university-taught economics, but the economics functions of the U.S. government at the Office of Management and Budget, the Pentagon, and other crucial installations; the "strategic planning" divisions of most corporations; the Organization for Economic Cooperation and Development; and the economic bureaucracy of the United Nations at UNCTAD,



John Maynard Keynes

UNITAR, and other agencies; in short, the major economic policy bodies of the industrial capitalist world. Despite still-widespread abhorrence for the Malthusian doctrine promulgated through these bodies, and resistance at many levels of government to formal agreement to these policies, they nontheless fix the general direction of the world economy—as nothing shows better than the emerging world depression.

Nothing short of tearing the Malthusian doctrine up by its roots will forestall a holocaustal depopulation from which the human race might never reemerge. But these roots are well-implanted, and they must be known in order to destroyed.

Cambridge exhumes Malthus

There is not an idea in the repertoire of the systems religion not already fully-developed first by the Jesuit-trained British economist William Petty in *Mankind and Political Arithmetic* in 1682, which calculated rates of population growth against the rate of potential settlement of the world's surface with then-existing rates of agricultural productivity, and concluded that the human race would begin to die out in about 2,000 years (although Petty, chiefly responsible for the genocidal resettlement of the native Irish population in that century, proposed to begin immediately). Restated a century later by the Venetian monk Giammaria Ortiz and in 1798 by Parson Malthus, Petty's theory formed the premise of all British economics up through John Stuart Mill and Alfred Marshall.

Although the Malthusian elements were always present in Marshallian, or Cambridge, economics, and in the monetary theory based at Yale with Irving Fisher and the University of Chicago with Frank Knight, Henry Simons, and Milton Friedman, Cambridge first undertook to revive Malthus as the explicit basis of economics, and to prove in theory Malthus' old proposition that capital investment itself led to declining profits and economic crisis. Cambridge pre-occupied itself with demonstrating the physical limitations of the economy and has remained relatively esoteric among university economics departments, while the Yale, Harvard, and Chicago groups set out to sell the same proposition.

A group of individuals such as is not to be found elsewhere in economics history gathered at Cambridge in the elite Apotles' Club in the early 1930s. There was, of course, J. M. Keynes; Keynes' chief assistant and disciple Joan Robinson; the triple-agent trio of Philby, Burgess, and MacLean; official British Communist Party economist Maurice Dobbs; and the inspiration of all of them, Italian communist Piero Sraffa, the editor of the now-standard editions of the works of David Ricardo and T. R. Malthus.

Although Sraffa's work was only published in 1960 under the title, *Production of Commodities by Means of Commodities,* his work from the 1920s onward had the most profound influence on both Keynesian theory and linear-programmed economic models. He was the connection between Vienna and Cambridge. A close friend of Italian Communist leader Antonio Gramsci, Sraffa had studied with the Vienna nominalist Ludwig Wittgenstein, a sometime collaborator of Trinity College Apostle Bertrand Russell. Through what a friend of Sraffa called "the European homosexual network," the Italian met another Trinity College man, J. M. Keynes, during the 1919 Versailles negotiations, where both were serving as economic advisers to their national delegations. Keynes brought Sraffa back to Cambridge with him, and the dedicatee of Wittgenstein's *Philosophical Investigations* set to work on economic theory.

Sraffa revived Malthus' 1819 *Principles of Political Economy* as a source for further inquiry into economics, with special emphasis on Malthus' "crisis" theory. Cheerfully willing to admit that improvements in agricultural productivity could, indeed, sustain greater population, Malthus nonetheless insisted that lower food prices meant overinvestment and, ultimately, lower profits:

"The millions in capital which have been expended

in drainings, and in the roads and canals for the conveyance of agricultural products, have tended to raise rather than lower profits; and millions and millions more may yet be invested with the same advantageous effect. . . . (But) our present body of manufacturers . . . seem quite to forget the prodigious increase of supply which must be occasioned by the competition of so many more workmen and capitals in the same line of business." Malthus argues that overinvestment in industry will lower profits all around and bring about the same crisis that would otherwise emerge from an increase in the cost of labor due to food scarcity, thereby putting the Petty-Ortiz simple food scarcity theory into a general statement concerning the impossibility of capitalist development. As we shall see, he merely formulated what is now taught as the "production" and "supply of capital" functions in more general terms, namely, that at a given technology, marginal cost rises as consumption of inputs increases.

Linear equations and the real world

Sraffa did not attempt to prove Malthus' remarkable assertions through simple bombast, as the old parson did, but rather through a twist of method so blindingly stupid that it is painful to believe that all of contemporary university-taught economics hangs on it, as it does. Sraffa set up a system of linear equations that attempted to describe the circulation of commodities in the productive system, in general following the erroneous methodology of Karl Marx's interrupted Volume II of *Capital*. The exercise is straightforward: the production inputs to each commodity may be described as a "basket" of other commodities. For example, an auto may be described as a given amount of steel, aluminum, copper, glass, and other raw materials; as a depreciation cost for machine tools and other capital goods; and as a consumption basket for the labor force that produces the auto. All this is familiar from input-output matrices which have since become popular in econometrics. The commodities that make up each commodity may be written as a simple linear equation, and the totality of economic product may be written as a system of linear equations. Such a system may be solved for the case of economic growth only if the system grows in the identical proportions, i.e., if there is a change in technology such that the ratio of capital to labor employed shifts, the system of linear equations is insoluble. Cambridge economics boils down to the assertion that anything which cannot be solved through a system of linear equations cannot happen in the real world, and that the task of economics is to make sure that the ratio of capital to labor, or the capital intensivity of production, remains constant!

That argument brings to mind Lyndon LaRouche's quip about the mathematician who thought that babies were caused by counting. Yet that is the level at which Cambridge argued, extending Viennese logical positivism's attempt to force reality into the Procrustean bed of linear statements into an hysterical charge that the economy could work in no other way. Sraffa's close friend Joan Robinson, the surviving matriarch of the Cambridge School, postulated the need for a "Golden Age" in which the capital intensivity of production did not change so as to "make possible a rise in output per head of consumption goods while requiring an unchanged cost of equipment per man employed."

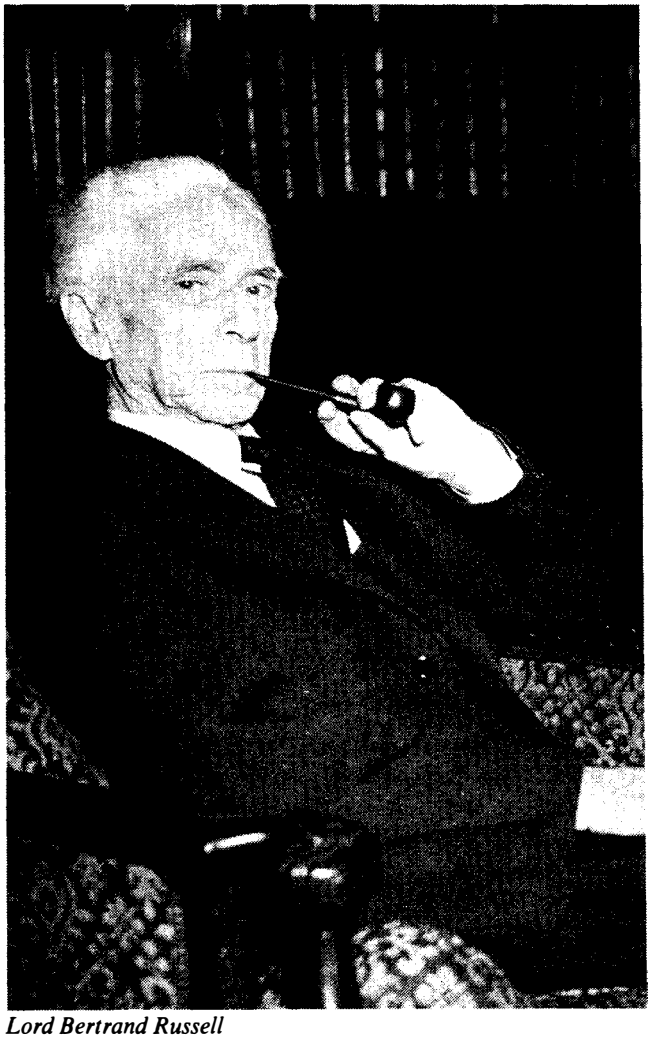
Keynes himself wrote in his *General Theory,*

> I sympathise, therefore, with the pre-classical doctrine that everything is produced by labor, aided by what used to be called art and is now called technique, by natural resources which are free or cost a rent according to their scarcity or abundance, and by the results of past labor, embodied in assets, which also command a price according to their scarcity or abundance. . . .
> With a given labor force, there is a definite limit to the quantity of labor embodied in roundabout [i.e. capital-intensive] processes which can be employed to advantage . . . there must be a due proportion between the amount of labor employed in making machines and the amount which will be employed in using them. The ultimate quantity of value will not increase indefinitely, relative to the quantity of labor employed, as the processes adopted become more and more roundabout.

The later chapters of the *General Theory* cited Sraffa's work in reviving the Ricardo-Malthus discussions of 1819-21, and favorably cite Malthus' argument

> that an attempt to accumulate very rapidly, which necessarily implies a considerable diminution of unproducive consumption, by greatly impairing the usual motives to production must prematurely check the progress of wealth. . . . But if it be true that an attempt to accumulate very rapidly will occasion such a division between labor and profits as almost to destroy both the motive and power of future accumulation and consequently the power of maintaining and employing such an increasing population, must it not be acknowledged that such an attempt to accumulate, or that saving too much, may really be prejudicial to a country?

With reference to the problem of Soviet participation in IIASA some thirty years after the great Malthus revival, it is important to note that the tendrils which ran westwards from Vienna to Cambridge also ran east



Lord Bertrand Russell

from the outset. The principal guides to Polish economic planning under the postwar Communist government were two Vienna-trained economists, Oskar Lange and Michel Kalecki, the latter of whom had already stated all of Keynes' celebrated conclusions in a 1933 paper on business cycles, two years before Keynes' *General Theory* appeared. The Polish and British Malthusian theorists were so close that "Kalecki's version of the General Theory, rather than Keynes', has been incorporated into the post-Keynesian tradition," wrote Joan Robinson. Kalecki in turn had "a lifelong friendship with Joan Robinson and Piero Sraffa," according to his biographer. In advice to the Polish government, which he served as chief economic adviser 1954-60, Kalecki recommended, "Investments should be kept at the lowest level at which the full employment of the labor force is obtained." Prior to this he had worked for the United Nations Secretariat as Deputy Director of the Division of Economic Stability and Development. A 1960 *Festschrift* for Kalecki contains laudatory essays by Joan Robinson (entitled "Kalecki and Keynes") and by Wharton School guru Lawrence Klein, whom we will meet again later.

Still more influential than the Keynesian theory, as popularized later in Cambridge, Massachusetts, were the logical-positivist methods introduced by Wittgenstein's student Sraffa. While this odd assortment of communists and Bloomsbury homosexuals worked up the new economic theory, the exemplar of the previous generation of Cambridge Apostles, Wittgenstein's teacher Bertrand Russell, had set in motion the second track leading towards the computer-based economics hoax: the movement for "Unification of the Sciences."

Logical positivism

Russell, his old student Rudolf Carnap, the Viennese standard-bearers Hahn, Neurath, and Frank, and the talented but misguided Budapest mathematician John von Neumann gathered at Oxford in 1930 at the Seventh International Congress of Philosophy, where, for the record, the logical-positivist movement was born. Carnap's effort, presented to the Congress, to reduce both the syntax of language and of mathematics to Russellian logical format is the conceptual basis for the worst mistakes made in the development of linear programming. In close touch with the Oxford group was the founder of the Princeton Institute for Advanced Studies, Abraham Flexner, who had been persuaded to create an American equivalent to All Souls College of Oxford after a lecture tour in England on behalf of the Rhodes Memorial Trust in 1928. One of the most influential American Anglophiles, Flexner ran the Rockefeller Foundation's General Education Board, advised the Ford Foundation and the Carnegie Corporation, and worked for the Morgan bank in New York. Flexner personally recruited von Neumann to Princeton during a visit to Oxford in 1931.

Von Neumann's first major project at Princeton was a mathematical solution of the Cambridge system of linear equations, which included the mathematical refinements required for computer-based linear programming, which is to say that in the mind of its makers, computer-based economic models preceeded the computer itself. Virtually all the "mathematical economics" now in professional use derives from that nine-page document, first presented to a mathematics seminar conducted by the Viennese economist Karl Menger. "Only Cambridge took notice of the paper," according to a participant, and the paper, which Menger published in Vienna in 1938, first appeared in the Cambridge quarterly economic journal in translation in 1946.

The argument begins from Sraffa's formulation, "goods are produced not only from 'natural factors of production' but in the first place from each other. These processes of production may be circular, i.e. G^1 is produced with the aid of good G^2, and G^2 with the aid of

G^1. There may be more technically possible processes of production than goods and for this reason 'counting of equations' is of no avail. The problem is rather to establish which processes will be actually used and which not." Von Neumann demonstrated "equilibrium solutions" for this problem with the aid of part of the Göttingen mathematical repertoire (past the sophistication of the mind-damaged Russellians at Cambridge), through a generalization of the Brouwer Fixed Point Theorem of matrix transformations, introducing the maxima-minima technique which has become a staple of econometric jargon since then.

As summarized in an accompanying commentary by Cambridge economists D. G. Champernowne, Nicholas Kaldor, and Piero Sraffa, von Neumann demonstrated that economic "equilibrium" implies:

> 1. . . . every process in use should make zero profits; for under perfect competition, positive profits would attract competitors to use the same process and negative profits would deter people from using the process at all. [Von Neumann] thus obtains the following rule for equilibrium: *Profitability Rule.*—Only those processes will be used which, with the actual prices and rate of interest, yield zero profits after payment of interest. These processes will be the most profitable ones available.
>
> 2. Since, in the real world, land is limited in supply, the only possible quasi-stationary state is a strictly stationary state or conceivably a contracting state: for an expanding quasi-stationary state would eventually be confronted with a shortage of land and its equilibrium would be destroyed.
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> 3. Wage costs are not considered as such, for laborers are not separately considered any more than farm animals. It is supposed that they will do their work in return for rations of shelter, fuel, food, and clothing, just as a horse works when it is fed and cared for. . . . Suppose that the working-class effectively insists on a higher real wage, then this has the effect of increasing the input needed in any process (to secure a given output) by the amount of the extra fodder which the workers demand. Hence, there will be a change in equilibrium conditions, and the position of quasi-stationary equilibrium will change to one with a lower rate of interest and a lower rate of expansion.

Here it is of only secondary interest that Joan Robinson, in keeping with her well-cultivated image as a leftist with sympathies toward the East bloc, made the last point the core of the post-war "Cambridge Controversies" (between England and Massachusetts) in the economics profession, i.e. insisting that capital accumulation and the workers' share of national income necessarily had an inverse relation—although all history of economic expansion shows the opposite, as Henry Carey demonstrated in his proof of the "harmony of interests."

Von Neumann had succeeded in putting the Malthusian prejudices of four generations of British economists into a mathematical language susceptible to computer-based analysis, and the economics profession went roaring into the "quantitative" mode where it remains today. The formulation of the economic equilibrium problem in a way that required massive numerical computation coincided, in the work of the "turned" Göttingen-trained mathematician John von Neumann, with the improvements in matrix algebra required for linear programming, precisely was what one would have expected.

Equilibrium uncertainty

As Lyndon LaRouche and this writer demonstrated in *The Ugly Truth About Milton Friedman*, all equilibrium economics is Malthusian in content. Malthus' own profit theory (the source of Karl Marx's rage against him) states simply that capitalist profits are only the result of overpricing of goods, i.e. "profit upon expropriation," because the capital inputs plus labor cost equal the capitalist's net returns minus the rate of interest on capital. Keynes transformed this into a recommendation that the authorities intervene to prevent disequilibrium—a condition of net profitability of the capitalist economy—by keeping interest rates just high enough to siphon extra investment in industry off into government bonds or other forms of non-productive consumption. Milton Friedman's teacher Frank Knight at the University of Chicago, the founder of what passes for modern microeconomics, re-framed this as an "uncertainty" principle of doing business: Since the system as a whole in equilibrium could have no *net* profits, the profit of the individual firm was due only to the "uncertainties" of pricing and market strategy; some firms would take net profits at others' expense. Knight's dictum actually became the guiding maxim of management practice, which we shall encounter later.

Strictly speaking, von Neumann's statement of the conditions of "equilibrium" is entirely valid. What is false is the notion that "equilibrium" is an interesting condition to be studied, or a situation to be desired at all. That the mere word "equilibrium" could attract interest in 1932 is not to be explained by the brilliance of arguments in its behalf, but by the fact that the world was in the trough of its worst economic depression, which Keynes and the other Malthusians tried to blame on "over-investment." On the contrary, as LaRouche and I demonstrated in the cited book, coordinated efforts by the Bank of England and the Federal Reserve

Bank of New York brought on the 1929 crash, introducing what the economists would blinkingly descibe as an "exogenous shock"—but making Cambridge's insane premises seem reasonable.

Any change in the capital intensivity of production (the C/V ratio) immediately throws the system into disequilibrium, according to the Malthusians. But it is not possible to have a capital goods industry at all without continuous changes in the capital-intensivity ratio: the decision to build capital-goods-making facilities on the scale at which each individual facility would be profitable assumes that there will be a market for such goods. In Rosa Luxembourg's example, after a railroad which will last for, say, twenty years, has been built, what will happen to the locomotive factories and rail mills that were built to produce the capital goods for the railroad? They cannot wait for twenty years until a new railroad is required; the mere existence of the railroad implies facilities for the manufacture of railway capital goods far in excess of the "rate of depreciation" of existing railways. Either they are shut down, and the economy undergoes a non-linear ratchet collapse, or they are employed in a geometric rate of economic expansion. The illusion that an economy may employ capital-goods facilities whose output is just equal to the depreciation of the existing capital stock—what Joan Robinson defined as a "Golden Age"—is only possible in a dying economy whose capital stock emerged during an earlier period of growth, a description that applies to the (now-collapsing) United States economy of ten years ago.

Even in the course of a single production cycle the course of the economy is dictated by the transformation of existing production processes. Short-run decisions are only comprehensible as a moment in the process of transforming the existing "input-output" matrix to a more technologically advanced one. Any other approach yields nonsensical, and Malthusian results. As LaRouche demonstrated, the most elementary consideration, the starting-point for all economic analysis, is the transformation of the economy through successive new matrices reflecting technological advances. Since the replacement cost of total output in matrix n is, in the case of a growing economy, reduced nonlinearly from the standpoint of matrix $n+1$, prices cannot be a starting point for analysis. Similarly, any attempt to value commodities as bundles of other commodities will founder on the nonlinear changes in cost of production. The only consistent metric is therefore *relative population density* as LaRouche has defined it. That the alternative approaches are, in LaRouche's term, "white-collar genocide," is demonstrated by the stated implications of systems theory from the outset, no less than by the passionate Malthusian prejudices of those who invented it.