General Sessions

Macroeconomics in Crisis: Agriculture in an Underachieving Economy

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The American economy performs like an auto engine whose radiator is choked with lime deposits. Some time ago, it was discovered that adding generous amounts of tap water to the radiator permitted high power output without overheating. As the years went by, however, lime deposited in the radiator by the tap water reduced cooling capacity—tap water had to be added continuously for adequate engine performance even under normal loads on level highways. Deposits finally built to the point where nearly all agree that something has to be done to restore power to this basically sound, but occluded, engine. One recommendation is to use a high pressure radiator cap for increasing engine performance without continually adding water. But the concern is that something will burst under the pressure. Another recommendation is to remove the radiator and cook out the lime deposits. The drawback is protracted engine downtime.

These are basically the dilemmas and options facing macroeconomic policy today. Performance of the economy as apparent in high inflation and unemployment rates, in slow real growth, and in a weak dollar in international exchange has reached crisis proportions. Economists and the public are convinced the economy is capable of better performance, but there is no concensus about how to restore vigor to the underachieving economy.

My thesis is that misguided macroeconomic theory and practice have created a chronically underachieving national economy. Just as the economic debilitation wrought by misguided policies has been slow to emerge, it will be slow to dissipate. The underachieving economy is a degenerative malaise transcending the current recession. The economy will be slow to respond to remedial policies because underachievement is rooted in attitudes and institutions which change slowly.

The underachieving macroeconomy is the single most important characteristic of the economic environment facing agriculture in the 1980s. I briefly review evidence of the crisis and the contribution of macroeconomic theory and practice to the crisis. I then examine two directions macroeconomic policy could take to begin to restore health to the economy. A principal objective of the paper, dealt with in the final sections, is to trace implications to the farming industry of (*a*) an underachieving national economy in the 1980s, and (*b*) alternative policies likely to be pursued to restore economic vitality.

The Gathering Crisis

The crisis in macroeconomics is evident in fact and logic. Society seeks equity and efficiency from an economic system. The distribution of income in the United States has remained remarkably stable since World War II, and we look to measures of efficiency such as productivity and per capita income for signs of economic progress. The following indicators reveal deteriorating national performance since the 1960s:

	1960s	1970s	1979
	(annual average, %)		
Unemployment rate	4.8	6.2	5.8
Inflation rate in CPI	2.2	6.5	13.3
Labor productivity rate (increase in output per hour in the private business sector)	2.8	1.3	−1.0
Real income growth rate (increase in real disposable personal income per capita)	2.7	2.2	−1.0

(Source: Council of Economic Advisors, pp. 229, 237, 246, 259.)

Average rates of unemployment in the 6%

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range are hardly cause for approbation, but of principal concern is the high and accelerating rate of inflation coupled with slow and declining rates of growth in labor productivity and real income per capita.

Proximate causes of the economic slowdown are multiple: (*a*) rising energy costs because of OPEC price increases; (*b*) increased spending on pollution control, health, and safety; (*c*) entrance into labor force of inexperienced workers, especially youth, females, and minorities; (*d*) realignment in terms of international trade to correct for previously over-valued dollar; (*e*) shift from agriculture and manufacturing to service industries with low productivity growth; (*f*) depletion of natural resources including oil, iron ore, and soil; (*g*) increased tax burden of social security and other social programs; (*h*) rising minimum wage; (*i*) declining high payoff investment opportunities; and (*j*) low savings and investment rates.

Rising energy prices (*a*) are a convenient scapegoat for deteriorating performance but only two to three percentage points of the 13% increase in consumer prices in 1979 were attributed to OPEC price increases (Council of Economic Advisors, p. 162). The economies of Japan and West Germany, for example, are strong despite greater dependence than the United States on high-priced imported energy. Environmental programs have absorbed resources and are of value. If their value were included in conventional national accounting for output of goods and services, the performance of the economy might be raised from a grade of "fail" to "low pass." Entrance of inexperienced workers into the labor force and realignment in terms of trade also caused economic performance to falter. The important point, however, is that the retarding influence of items (*a*)–(*d*) has crested—these factors will arrest the growth rate less in the future than in the past.

Economic progress contains the seeds of its own slowdown, as shares of income-elastic but low-productivity-growth service industries become prominent relative to high-productivity-growth industries such as agriculture, and as natural resources become depleted. Elements (*e*) and (*f*) retard growth in the long run, are expected, and are not the basis for classifying the secular decline in growth as economic underachievement. They do not account for the poor performance of the United States relative to other advanced capitalistic economies that possess few natural resources.

Therefore, we turn to factors (*g*)–(*j*) for sources of chronic economic underachievement. Sluggish investment and savings mean slow capital formation at a time when capital formation is desperately needed to build energy-producing capacity, more jobs, and more output per worker. The savings rate dropped cyclically from 7.4% of disposable personal income in the 1970–75 period to 3.3% in late 1979 (Council of Economic Advisors, p. 228), but for decades propensities to save and invest have not declined secularly in this country. I regard no increase in such propensities as underachievement in a society experiencing a growing surplus of production in excess of basic needs, increasing depreciation of capital stock, and keen competition from abroad. Propensities to save and invest are low in relation to those of other advanced industrialized countries.

Average annual plant and equipment investment increased only 2.6% annually in real terms 1968–78, compared to 6.2% annually in the previous decade. Capital investment in manufacturing as a percentage of gross domestic product 1960–76 averaged only 9.1% in the United States, compared to 28.8% in Japan, 15.9% in West Germany, 14.7% in Canada, and 13.5% in the United Kingdom (Committee for Economic Development, p. 3).

The United States invests a smaller share of national income in research and development than other leading industrial nations, and patent application rates are falling. Excess-profits taxes, government regulations, and other forces frequently direct investment into ventures with low social rates of return or discourage investment in ventures with high social rates of return. Investment level and profitability cannot be separated; i.e., the lack of profitable and productive capital investment opportunities reduces the magnitude of savings and investment. Ruttan (p. 896) stressed the interaction among growth-inhibiting elements, noting that inflation reduces growth in labor productivity. Finally, it is well to note that growth dividends from unleashing factors (*a*)–(*d*) will be absorbed by demands for capital to meet needs for energy, social welfare for an aging population, and national defense.

Disenchantment with Neo-Keynesian Macroeconomic Theory

Disappointing levels of saving, investment, efficiency, and hence of economic progress,

have roots in the neo-Keynesian (NK) macroeconomic paradigm that has guided this nation for over three decades. Neo-Keynesian economics holds to Keynesian precepts of a short-run equilibrium at less than full employment, capacity for short-run tradeoffs between unemployment and inflation, and for a government role in monetary-fiscal policy to stimulate aggregate demand in depressions and severe recessions when planned savings exceed planned investment. But NK economics adds to these Keynesian precepts the propositions that advanced capitalistic nations are chronically prone to (*a*) high unemployment, (*b*) economic instability, and (*c*) increasing concentration of resources and wealth. The underlying causes of these three phenomena include unpredictable "animal spirits" that shift nationwide spending moods from optimism to pessimism, and big business that exploits labor and the consumer—tendencies which must be countervailed by perennial monetary-fiscal stimulation of aggregate demand, by social legislation to redistribute wealth and protect the worker and consumer, and by formation of politicoeconomic collectives to promote economic democracy through a paternalistic government.

The neo-Keynesian economic paradigm deserves much blame for an underachieving national economy. Shortcomings of the NK paradigm discussed in the next section call for new directions in macroeconomic theory and practice. But neither economists nor the public agree whether the call is to the right or to the left.

Post-Keynesian Macroeconomics

Post-Keynesian economists are united in their disenchantment with neo-Keynesian macroeconomics. Their critique and prescription for a new paradigm vary widely as apparent below.

Right-Wing Macroeconomics

Right-wing post-Keynesian macroeconomics, unlike left-wing post-Keynesian macroeconomics to be discussed later, acknowledges little debt to Keynes, although many right-wing adherents concede that Keynesian economics is applicable to a depression. Right-wing macroeconomics contains several branches including natural rate and rational expectations schools—largely monetarist in orientation, and a supply-side school—largely neoclassical in orientation.

Natural rate and rational expectation economics. In Keynes' statement that "It is probable that the general level of prices will not rise very much as output increases, so long as there are available efficient unemployed resources of every type" (p. 300), he recognized the trade-off between unemployment and inflation. Following quantification of the relationship by Phillips, the notion that it was possible to sustain low levels of unemployment by tolerating inflation became widely accepted.

Protests to the position emerged, however. The case began to build that workers, given time, react to real rather than money wages (cf. Dernburg and McDougall, pp. 283–5, 393; Morley). The long-term Phillips curve was perceived as vertical at the natural rate of unemployment. The long-term aggregate supply of national output was viewed as vertical, or even sloping upward to the left as a function of the inflated general price level. To be sure, monetary-fiscal stimulus raises nominal demand for national output, and the resulting rise in the general price level induces workers and other suppliers to increase output. But suppliers discover that the increase in the demand price is mostly nominal, not real, and increase their supply price for a given output. The resulting higher nominal aggregate supply curve intersects the nominal demand curve at a higher general price level but approximately at the former equilibrium quantity Q. The economy tends to overreact and temporarily moves to a lower output than Q. Termination of the monetary-fiscal stimulus may return both the price level and output to the initial level but not without substantial trauma in the form of high unemployment and underutilized capacity until equilibrium at Q, the natural or equilibrum output, is restored. This inflation cycle of expansion and stabilization behaves much like the traditional business cycle. (See Morley for an extended discussion.)

The rational expectations hypothesis, originally associated with Muth and applied broadly to macroeconomics by Lucas and Sargent, as well as by others, holds that decision makers adjust expectations for the impact of public policy so as to remove systematic error in their predictions. In the case of stimulation of aggregate demand by fiscal-monetary policy, decision makers learn to anticipate that the initial increase in the marginal value product of labor and in aggregate demand is

pecuniary and will be attended by an upward shift in nominal wage demand by workers and in aggregate nominal supply. After the learning experience of first increasing and then decreasing output in response to monetary-fiscal stimulus before reaching a new equilibrium at a higher general price level but at the natural rate of output Q, suppliers learn to shift nominal supply upward at the same rate as nominal demand. This short-circuits real impacts of monetary-fiscal stimulus and real output holds at Q. Monetary policy loses its intended impact; real demand and supply, output, and employment are unchanged by public policy, whatever the inflation rate. Although unanticipated policies have real impacts, they are not useful government policy because their impact, if repeated, is anticipated and hence solely pecuniary.

Those who have witnessed farm commodity cycles repeated for decades are skeptical about the rational expectations hypothesis. Nevertheless, a learning process occurs with successive stimulation of aggregate demand, which in turn generates the inflation cycle. This cycle of expansion and contraction in output under the natural rate hypothesis becomes less pronounced as learning proceeds—behavior consistent with the rational expectations hypothesis.

Supply-side economics. The nation blundered into the Great Depression blindly following Say's Law that supply creates its own demand; the nation blundered into stagflation by blindly following Keynes' Law that demand creates its own supply. Many students first encountered economics defined as the science of allocating scarce means among unlimited wants to satisfy those wants as fully as possible. NK macroeconomics would allocate limited wants among unlimiting means to utilize those means as fully as possible. Except in the short run, the concept of limited wants and unlimited means fails to square with even casual observation of reality.

In the traditional Keynesian model, another dollar of investment or government spending adds $1/s$ dollars to income, where s is the marginal propensity to save. As s approaches zero, the multiplier approaches infinity. Small doses of autonomous investment are required to boost national income in an economy where s is small. To make the economy responsive to stimulative policies by making s small, spending became a virtue and thrift a vice. The allure of the "free lunch" and the sanctioning of massive government spending to stimulate demand through consumption, as opposed to stimulating supply through investment (which requires deferred gratification), made neo-Keynesian remedies irresistible. The propensity to save s could be made small, for example, by making social security universal and financed by taxes rather than by actuarially sound investments. The problem is that as s becomes small, all is consumed that is produced and growth comes only as inflated, not real, dollars.

Sobering vignettes from economic theory emphasize the importance of supply-side economics. The Harrod-Domar tautology showed that the rate of growth of real income r was a product of the output-capital ratio (efficiency) g and the propensity to save s, i.e., $r = gs$. This conclusion that a high rate of savings is associated with a high real rate of economic growth is contrary to the NK model and received little attention from macroeconomic textbooks, politicians, and the public because it called for a return to deferred gratification and the dismal science of economic scarcity.

Supply-side economics recognizes that unused capacity and unemployment will be present in a "full employment" economy. At issue is whether the unutilized capacity is profitable to operate at the margin. In keeping with neoclassical theory, supply-side economics emphasizes the importance of examining whether it pays employers to hire unemployed workers and whether workers hired under public employment or other NK-type programs contribute more to real output than would alternative uses of the resources.

Neo-Keynesian prescriptions have structural impacts on supply. Persistence of Keynesian prescriptions slowly alters institutions and attitudes in a manner that robs the market economy of savings, investment, flexibility, and other features critical for economic progress. Firms in an atomistic, competitive industry find it difficult to pass inflated costs to other industries and consumers. Firms possessing much bargaining power in a highly concentrated industry and laborers in powerful trade unions can more readily pass on costs to the next link in the market chain. Minimum wage laws, unemployment insurance, collective bargaining legislation, and other measures established by government to provide built-in economic stabilizers for aggregate demand also provide a framework of

enabling-legislation for growth of monopoly in the form of big labor and big business which use market power to pass rising costs to consumers.

But even General Motors cannot pass all costs to consumers because of competition from foreign firms. In world perspective, major U.S. industries are in many cases atomistically competitive, and scope for monopolistic exploitation is limited without collusion of government in the form of trade barriers. Major American industries have lost their world dominance partly because of neo-Keynesian macroeconomics. In part because of the growth of organized labor and its demonstration effect on other workers, and in part because major U.S. industries operate in a highly competitive world market where rising labor costs cannot be passed to consumers, labor has increased its share of firm receipts. The result is less investment in capital to increase worker productivity and expand jobs. Federal double-taxation of corporate profits and allowance for depreciation at less than replacement costs further erodes capital formation in an inflationary economy.

Special interest politics has played a role in setting "full employment" targets that cannot be sustained because of intolerable inflation. Emphasis on raising aggregate demand by stimulating consumption has attracted a host of political special interest groups to share government largess. Government has become the politics of distribution. The distribution has been to those possessing political power and not necessarily to the poor or disadvantaged. Critics argue that economic democracy asks government to perform far more than it has capacity to deliver. Before goods can be distributed, they must be produced.

Right-wing charges of neo-Keynesian contributions to an underachieving economy go on, but more positive dimensions of right-wing economics exist. The right-wing argues it is in tune with wants of people for personal freedom while at the same time funneling the self-interest of impersonal man to serve the public interest through the invisible hand of the competitive market. Right-wing economists point to the economic success of the essentially free enterprise economies of Singapore, Hong Kong, Taiwan, and, prior to recent times, the United States.

American agriculture of today provides one of the best sector examples of the right-wing model. The competitive farming industry plows back 30% of its income into capital investment, whereas the nation as a whole invests about 10% of national income. Farm labor productivity perennially increases at approximately 6% annually, while nonfarm labor productivity has stagnated. Farmers account for only 3% of national income but supply over one-fifth of all exports. Farming industry performance is unparalleled for contributing to low domestic food costs, export earnings, and redistribution of income from high income to low income consumers and taxpayers.

Left-Wing Macroeconomics

Left-wing post-Keynesian economists subscribe to no common paradigm (see Croity and other articles in the series). However, left-wing macroeconomists more or less accept the Keynesian and neo-Keynesian precepts and prescriptions listed in the previous section. In mildest form, left-wing macroeconomics merely adds to these the need for a "high pressure cap on the overheated radiator" in the form of wage and price controls. More extreme forms of left-wing macroeconomics call for government ownership of industry and a centrally planned economy.

History provides compelling evidence that large, complex economies cannot be centrally planned and administered with acceptable levels of efficiency, that price and wage controls are unworkable in all but the short run, and that socialized industry rarely operates as efficiently as private industry.

More workable are alternative forms of left-wing macroeconomics that reject both the neo-Keynesian ideology of monetary-fiscal pump priming for all seasons and the conspiratoral views of industry exploiting labor. In the successful economies of West Germany, Japan, Sweden, and Norway, government plays a major, paternalistic role in managing (but not centrally planning) the economy, reconciling labor-management conflicts, and redistributing wealth. Labor and industry cartels are allowed, even encouraged. Industry and labor are concentrated into so few entities and each has such a large impact on the nation that each holds itself (or is held) accountable to the public at large for its price and wage actions. National priorities for wages, output, and prices are worked out in negotiations among industry, labor, and government. Cooperation among these public and

private power centers is also commonplace in research and development of new products and markets as well as other endeavors not well suited to private investment alone because of risk, externalities, and economies of size. Such managed economies seem to perform well only in countries characterized by a highly industrious labor force in an atmosphere of mutual trust between labor and management. Applying the above left-wing strategy to the United States is fraught with peril because powerful collectives would be formed which could go dangerously out of control in a heterogenous nation with the tradition of an adversary relationship between labor and management.

The Untenable Middle Ground

The most notable distinction between successful economies of the right and left is whether they use competition or other forces to channel self-interest to serve the public interest—each type of successful economy exercises monetary-fiscal restraint and control over special interest groups. The latter probably makes possible the former; this is, control of economic collectives restrains cost-price inflation, and control of political collectives restrains demand-pull inflation.

The U.S. economy is in an unstable position between the left and right models. Its political and economic collectives are large enough to aggrandize themselves at the expense of the general public but small enough to escape accountability. Because the United States gets the worst of both worlds, economic performance can improve by moving toward the best of either the right-wing or left-wing post-Keynesian economic models.

Neo-Keynesian economics has become something of a drug habit which, despite failure to produce highs anymore, is difficult to foresake because of traumatic withdrawal symptoms. Large numbers of people and the politicians who represent them have a stake in continuing the "habit" despite the counsel of post-Keynesian economists. Even in the unlikely event of a sharp turnaway from neo-Keynesian prescriptions, the legacy of high inflation and unemployment, slow real income growth, and/or a weak dollar likely will persist through the 1980s. At issue is how an underachieving economy and a left or right turn in macroeconomics will affect the farming industry.

Implications for the Farming Industry

Once farmers prospered under national booms because of a relatively high income elasticity of domestic food demand and easy credit associated with business expansion. Now domestic demand is of lesser importance—nearly three-fourths of the growth in demand for farm output comes from foreign markets. Once a strong labor market in the metropolis was required to absorb excess farm labor; now there is little excess farm labor. (Gardner [p. 14] found that local off-farm earnings so critical to farmers are not highly sensitive to national business conditions.) Once farming industry economic fortunes were tied to product markets as influenced by business cycles; now such fortunes are more closely tied to input prices as influenced by government-induced inflation cycles.

Some effects on the farm sector of an underachieving economy are clearly unfavorable; others are favorable. Direct effects of a turn to the right or left in macroeconomic theory and policy may be massive, but whether they will be favorable or unfavorable in the short run is not easily predicted.

Favorable Impacts of an Underachieving Economy

Favorable impacts for the farming industry include a faster rate of growth in export demand, more elastic total demand, and less demand for structural changes.

While growth in demand for some farm products, such as beef with a relatively high income elasticity of demand, will be slowed, on the whole the response of farm output demand to real income is now too low to be of major concern. Of greater importance is the weak dollar, making our farm products a bargain in world markets, and causing exports to be the major source of the growth in demand. As the major efficient sector of the economy where productivity has been kept high and comparative advantage intact, the farming industry by virtue of its export position stands to gain from mismanagement of the economy.

The fast-growing foreign demand for farm output coupled with a slow-growing domestic economy may turn the dynamic farming industry into a growth industry—it may grow faster than industry as a whole in the 1980s. The farming industry may contribute a larger share of national income in 1990 than in 1980.

Up to three-fourths of the growth in demand for farm output is expected to be from foreign sources in the 1980s compared with half in the 1960s. The growing weight of exports in demand for farm output from 15% in 1965, to 30% in 1979, implies a 50% increase (from −.4 to −.6) in total elasticity of output demand assuming a domestic price elasticity of −.2 and a foreign elasticity of −1.5 in each year.

Growing farm exports coupled with highly elastic domestic alcohol fuel outlets for farm commodities tend to make total demand for farm output at "floor" prices less inelastic in the short run and elastic in the long run. The implication of stronger and more elastic demand for farm output is reduced need for government loan, deficiency payment, and production control programs to support the level of farm product prices and incomes. Such policies would be in keeping with the market orientation of right-wing post-Keynesian economics. Commodity reserve programs to stabilize markets may become more important because of growing but highly volatile export markets.

Farms needed to grow in size at the real rate of 5% annually in the past three decades in response to technology and the opportunity cost of labor. Real nonfarm income per capita growing at (say) 1% per year rather than 3% shaves two percentage points off the required growth in the scale of farm firms to "keep up with the Joneses." If labor-saving technology is also forthcoming at a slower rate in an underachieving economy, farmers will get a welcome breather from the adjustment treadmill in the 1980s.

Unfavorable Impacts of an Underachieving Economy

The principal unfavorable impact on the farm economy of an underachieving nonfarm economy comes from inflation as (*a*) factor markets respond more quickly and fully to national inflation than product markets, causing a cost-price squeeze, and (*b*) immediate costs of land purchases rise whereas returns are deferred, causing a cash-flow squeeze.

Cost-price impact. In the 1980s, national inflation clouds optimism for rising real prices received by farmers from my projection that farm output demand growth will exceed supply growth rate due to productivity. Farmers have no immediate means to pass inflated input prices to the next link in the production-marketing chain as can imperfectly competitive input supply and product-marketing firms.

In a recent study (1980a) I found that for the 1963–77 period, inflation pass-through is complete in one year from retail food demand down to the farm level—each 1% increase in the general price level is associated with a 1% increase in nominal demand at the farm level. The situation is more complex on the supply side. Each 1% increase in the general price level is associated with an approximate 1.4% increase in prices paid by farmers, shifting the long-run nominal supply curve for farm output upward by 1.4%. Short-run inflation pass-through averaged 70% in the 1963–77 period; that is, each 1% increase in prices paid by farmers caused by inflation was associated with only a $1 \div 1.4 = .7\%$ increase in prices received by farmers. Farmers restrain input use and output until eventually their buying power is restored in a pattern depicted by Tweeten and Griffin.

Cash-flow impact. Judging by net income per farm from all sources, by net worth per farm, by rates of return on farm equity capital versus returns elsewhere, and by firm failure rates, commercial farmers have on the average enjoyed robust financial health since 1960 (Tweeten 1979, pp. 53–61). However, the favorable average indices of the farming industry poorly reflect the situation faced by beginning or expanding family farms experiencing inflation-caused cash-flow problems.

Durable assets, principally real estate, interacting with inflation are the source of the cash-flow problem. The conceptual framework developed elsewhere (Tweeten 1980b) begins with the formula for the present value of an acre of farmland P_o:

$$(1) \qquad P_o = \int_{t=0}^{\infty} \frac{R_o e^{(i + i' + \epsilon)t}}{e^{(\alpha + i)t}}\, dt$$

$$= \frac{R_o}{\alpha - i' - \epsilon},$$

where R_o is after-tax net rent per acre in the initial period *0*, i' is the before-tax real rate of increase in rents, i is the rate of national inflation, α is the desired real rate of return on land, ϵ is the rate of increase in net rent due to the tax advantage on farmland versus that on alternative investments, e is the base of natural logarithms, and time t goes from the initial period *0* to infinity. The discount rate (nominal total rate of return) is $\alpha + i$. In a well-functioning market, the capitalized present market value of an acre of farmland is $R_o/\alpha - i' - \epsilon$, the current rate of return on investment in farmland is $\alpha - i' - \epsilon$, and land rents and values increase at the rate $i + i' + \epsilon$.

Conceptual and empirical considerations of the model provide additional insights:

(*a*) The value of ϵ is so small at inflation rates likely for the 1980s that it will have a minor impact on land rents and returns; hence ϵ is ignored below (Tweeten 1980c).

(*b*) If rents are expected to increase exactly at the inflation rate ($i' = 0$), then land is capitalized at the desired real rate of return α and the initial and continuing current return on land is α. This principle constitutes the foundation for the cash-flow problem engendered by inflation, i.e., the current rate of return on farmland is invariant to the inflation rate! If $\alpha = .04$, or 4%, the land price is twenty-five times net rent, and the current return on land is 4% of the inflation rate. The long-term mortgage interest rate is the real rate of interest plus the inflation rate, hence inflation defers returns and inflates immediate costs. If inflation is 9% per year, nominal capital gain is 9%, which, together with the current return of 4%, brings total return to 13% per year. However, the real return is only 4% per year because the inflation in land values and rents does not add to buying power.

The mortgage interest rate is the real rate of interest, approximately 3%, plus the inflation rate i. An inflation of 9% means a mortgage interest rate of 12% which, coupled with current returns of 4%, leaves a cash flow deficit of $12 - 4 = 8\%$ of farmland value under a perpetual mortgage. In contrast, in the absence of inflation, the current return of 4% and mortgage interest of 3% leaves a cash flow surplus of 1%, excluding principal payments.

(*c*) Expected real increases in land rents ($i' > 0$) change the capitalization rate and current return on land to $\alpha - i'$, whatever the value of i and with farmland taxed at the same rate as alternative investments in response to inflation. If the desired real rate of return on land is = .04, or 4%, if land rents are expected pected to increase at a real rate of $i' = .02$, or 2% per year, and if land returns are taxed at the same rate as returns from other investments, then land price is fifty times rent and the initial rate of return on land is 2%. Using Melichar's terminology (p. 109), farmland becomes a "growth stock" when $i' > 0$ and real capital gain accrues at the rate i'. If inflation is 9% annually and with the above parameters, the nominal capital gain is 9%, real capital gain 2%, and current return 2%, for a total annual return of 13%. Again, real return is only 4% (2 percentage points each of current earnings and real capital gain) because the 9% capital gain induced by inflation represents no increase in buying power of land. With a 2% current return and 12% mortgage interest rate, the cash flow deficit is 10% of land price with a perpetual mortgage. Thus the tendency for farmland to become a growth stock in an underachieving economy exacerbates the cash-flow problem.

For the beginning full-time owner-operator with limited potential to generate cash flow, land is clearly "overpriced" with 9% inflation. Operator-family labor-management returns are not expected to exceed 2% of land values in the 1980s, hence applying the entire amount (if that were possible) to pay the interest would still leave a large cash-flow deficit with 9% inflation. Principal payments only add to the cash-flow problem. Tenancy, off-farm employment, and special assistance from parents and other concessional sources are various means operators use to cope with the problem. Unless new financial strategies, sound monetary-fiscal policies, and other measures are found to deal with the cash-flow squeeze, the trend is likely to accelerate toward farmland ownership and operation by part-time farmers, corporate conglomerates, and established, wealthy commercial farmers.

Increased ownership of farms by these latter groups conflicts with the traditional family farm concept. Coupled with high overall capital requirements for an economic farming unit, the cash-flow squeeze has gone far to reduce the farming industry to a landed class whereby the only family farmers who can become established in farming are sons and daughters of established farmers.

Fixed long-term interest rates inject un-

necessary risk into the credit market, which could cause severe financial hardship to farmer-debtors with the deflation that would follow a return to sound monetary-fiscal policy. Because the equity ratio is high in farming and because much of the current long-term debt was not incurred at high mortgage interest rates, it seems imprudent to continue neo-Keynesian economics on the grounds that "the only thing worse for farmers than inflation is deflation." Indexed interest rates are one means to reduce risk to debtors and creditors as monetary-fiscal policies change.

Serving the Threatened Mid-Size Family Farm

Many agricultural economists committed to serve the public interest have perceived farmers to be a disadvantaged and oppressed class. Where the interests of the farmer conflicted with those of the public at large, it was easy to side with the farmer. The world is no longer that simple.

Cost-price difficulties will continue and pockets of low income farming will remain; but on the whole, cash-flow problems will force ownership of farming sector assets into the hands of the financially strong. Per capita wealth will be considerably higher in the farm sector than in the nonfarm sector.

Tweeten, Cilley, and Popoola show that the composition of small farms, where low income problems have been acute, will experience a sharp turnaround. Once by far the largest category of small farms, those operated by full-time, able-bodied persons will be comparatively few in numbers by the mid-1980s. The total number of small farms probably will begin to grow because of rising numbers of part-time and/or aged operators. Part-time farmers are for the most part not a welfare problem, and the aged are best helped by welfare programs. Because these farmers produce so little and are hard to reach, neither of the latter groups is a prime candidate for utilizing a larger share of scarce agricultural research and extension resources.

Publicly supported agricultural research and extension needs to focus especially on the mid-size family farms with sales of $20,000 to $100,000, that can be operated efficiently but are threatened by cash-flow and cost-price pressures of neo-Keynesian economics (Tweeten 1979, pp. 70–75). These farms are less able to handle cash-flow problems than (*a*) small farms which receive large shares of income from off-farm sources and (*b*) large farms with access to diversified sources of earnings as well as equity and debt capital. Public research and extension will need to play a key role in improving efficiency (through improved technology, information, etc.) and financial management critical to formation and survival of moderate-size farms.

Impacts of a Shift in Economic Policy

The tide of political economy for the farming industry will drift with the tide of political economy for the nation. A turn to right-wing, post-Keynesian macroeconomics will mean an even greater market orientation for agriculture, with the government role restricted largely to correcting market imperfections, e.g., aligning private and social costs (benefits). The result could be continuation of conservation, information, and stability programs such as the farmer-held reserve. But farm prices and incomes might not be supported directly, farm import curbs might be eliminated and farm cooperative antitrust preferences might be withdrawn. The fate of public research and extension is enigmatic: would emphasis on supply-side economics bring greater outlays for public agricultural research and extension to substitute for higher-cost conventional sources of output? Or would a right-wing political economy be dominated by an overriding concern for cutting public spending? Outlays for public agricultural research and extension could go up or down depending on the balance of these "substitution" and "income" effects.

The fate of tax policies is also enigmatic. Right-wing policies in general will result in lower income and estate taxes, which could favor growth in large, established farms. The resulting concentration of production in a few large farms may not be viewed with alarm if consistent with efficiency—such farms will be too numerous to form cartels and they will not be provided with enabling legislation in the form of market orders to facilitate collusion.

Pursuit of the left-wing model could bring all agricultural workers into a trade union. Extension of marketing orders and the National Labor Relations Act to the entire farm sector

could set the stage for commodity-wide, perhaps nation-wide, collective bargaining over commodity prices and output. Farm cartels would not be allowed to set prices at will. The farming industry could become a giant public utility with wage and price changes worked out in negotiations with government and consumer. A milder scenario merely would continue current commodity programs but with more generous price and income supports. The left wing would place much more emphasis than the right wing on preserving a large number of farms through a structure policy including special tax advantages for small and entry level farms coupled with tax penalties against large agribusiness corporations.

Implications for Economic Theory

Scarcity is divisive and an underachieving economy exacerbates scarcity. An underachieving economy needs economics more and appreciates it less than does an achieving economy.

Kuhn lists two ingredients for a scientific revolution: a crisis in the old paradigm and availability of a superior replacement. Rates of unemployment and inflation near double-digit levels signal a crisis in the old paradigm. No satisfactory paradigm awaits to replace the existing economic theory. The most successful left-wing economies do not use price controls but exercise restrained monetary-fiscal policy in conjunction with a sociopolitical strategy of concentrated but accountable labor and industry power. The conceptual framework is not new but avoids excesses of neo-Keynesian macroeconomics. On the other hand, the right-wing model calls for a return to traditional neoclassical marginal economics, the classical quantity theory of money, and Jeffersonian democracy. The neoclassical competitive model has experienced a renaissance but not necessarily for its predictive value.

Rebirth of Neoclassical Theory of Pure Competition for Prescriptive Purposes

Right-wing post-Keynesian economics is especially difficult to relate to the public because it emphasizes deferred gratification and efficient sources of additional output rather than stimulation of demand with transfer payments for consumption. It is indeed a "people" program, but benefits to people are less direct and often deferred as compared to left-wing policies. Stress on efficiency often concentrates wealth; the needs of the poor remain, and the equity-efficiency quandry is intensified as the pace of economic growth quickens. If the re-emerging neoclassical competitive paradigm appears to be an anachronism unable to deal with economic equity, it is because our economics has been too small. Excessive emphasis has been placed on prediction and Pareto-optimum efficiency. The competitive model has much to say about welfare maximization that economists have been too timid to voice.

Since Friedman's *Essays on Positive Economics,* it has been fashionable to regard a theory as useful to the extent that it predicts reality. Assumptions are of secondary importance. Students frequently protest neoclassical competitive theory on that basis, saying the model neither resembles nor predicts the real world. With modifications (to include the cost of time, risk, and information) the neoclassical competitive model does predict reasonably well, but the competitive model is not critical for prediction—it is easily supplemented and amended to include behavioral and other elements of reality. (Whereas some reject the competitive model because it does not resemble the real world, others make the opposite mistake of equating a free market with perfect competition.)

The most underutilized value of competitive theory is for prescription, as opposed to prediction. Here the perspective is the reverse of Friedman's: for prescription, usefulness of the competitive model lies in the fact that it does not resemble or predict the real but is a norm for an allocation to improve well-being of people. A device to detect automobile engine malfunction would be of no value if all engines functioned as predicted by their designed specifications. Similarly, the competitive model is useful to diagnose inefficiency (less utility than possible from means available) precisely because the real world does not resemble the competitive allocation. It is essential here to distinguish between pure (or perfect) competition as a set of assumptions and pure competition as an allocation of resources and commodities. In measuring social cost and performance, the allocation of pure com-

petition rather than the adherence to assumptions (e.g., many buyers and sellers) is important. The competitive model is a tautology whose marginal conditions and allocations must hold in a barter, socialist, or market economy which prizes above all the well-being of its people!

In short, Friedman's position that the test of a theory is its ability to predict the real world—assumptions are of secondary importance—is turned upside down. In prescriptive use of theory, market concentration, degree of knowledge, mobility of resources, and other assumptions are hypotheses useful to judge opportunities to improve allocations. Even left-wing cynics, who see nothing resembling pure competition in the real world and who call for enlarged collectives to exercise bargaining power in all sectors, measure the inefficiency of economic systems by the yardstick of pure competition. But the competitive model is not carried far enough. To show that imperfect competition in the food-marketing sector results in excess costs of $\$x$ billion is incomplete without examining costs of reducing such inefficiency with alternatives such as atomistic competition, cooperatives, or government performing the food-marketing function.

Toward Resolving the Equity-Efficiency Quandry

A most serious shortcoming of the competitive norm is that it is only a Pareto optimum, a position from which one cannot be made better off without making someone else worse off. A Pareto optimum can exist between two individuals while one is starving and another is sated with goods and services. It is fashionable for economists to recommend improvements in efficiency that make the sated individual even better off, arguing that the issue of equity should be left to radical social scientists and revolutionaries. That is precisely what has happened too often, with tragic consequences. Radical social scientists and revolutionaries behave as if efficiency does not matter, ignore the impact of redistribution on efficiency, and inadvertantly invite trauma exceeding pre-revolution miseries. On the other hand, positivistic economists often become hostages of the status quo, behave as if distribution does not matter, and ignore concentrations of wealth that are setting the world aflame with social unrest. To ignore the equity dimension of economics is to ignore much of economics that is important in today's world. The neoclassical competitive economic paradigm has been labeled a tool of the "haves" to oppress the "have nots," legitimatizing inequality and encouraging increasing concentration of wealth. It need not be.

Neoclassical economics is robust enough to handle the conceptual and empirical modifications needed to specify an optimal distribution of resources that recognizes the utility-maximizing trade-off between equity and efficiency. What is required are measures of the marginal utilities of income and resources for groups of people. In a pilot study, Harper and I showed that intergroup (though not necessarily interpersonal) utility can be measured for policy purposes employing attitudinal scales and test instruments widely used and accepted by other sciences such as psychology and sociology. Positivistic economists have for the most part rejected such estimation to depict equity-efficiency trade-offs as subjective and value-loaded. Yet, the value judgments of the "positive" economists (that the marginal utility of income is constant and equal for all, and hence the distribution of income is of no concern) seem even more imprecise, subjective, and value-loaded.

Some express concern that economic prescriptions showing allocations of resources that would maximize utilities would be a threat to politicians, replacing their role of interpreting social welfare functions. That is unfair. The appropriate and positivistic procedure is to lay before politicians alternatives derived as objectively as possible: one (say) which increases income, another which decreases unemployment, and a third which increases utility. The politician is then free to choose among alternatives based on the trade-offs between serving his narrow constituency (perhaps of special interests) versus the public at large. The need to study equity-efficiency trade-offs is not restricted to left- or right-wing schools of economics; rather, such study can bridge some of the gaps between schools emerging from different perceptions of importance of equity relative to efficiency.

Summary and Conclusions

Neo-Keynesian macroeconomic theory and practice have helped to create an underachiev-

ing economy of crisis proportions. One road to the left from the current impasse calls for diminishing the labor-management conflict and for enhancing the concentration of power in labor and industry, while holding collectives accountable for acting in the public interest. One road to the right calls for reliance on competitive forces of the market to produce outcomes in the public interest. The United States is currently in an unstable situation between these extremes, with collectives too small to be held accountable for the nation's ills but large enough to aggrandize themselves at the expense of society. A move to the right or left that promises to restore economic vigor will come eventually, but an underachieving economy will continue to be manifest in the 1980s in the form of high unemployment and inflation rates, slow growth, and/or a weak dollar in international markets.

The underachieving economy and a turn to the right or left has strong implications for the farm sector. The backbone of the farming industry and the principal clientele of the land grant university, the moderate-size family farm is particularly threatened by the cash-flow and cost-price impacts of an underachieving economy. On the more optimistic side, the underachieving economy could change farming into a growth industry and increase the elasticity of demand to reduce the need for price supports and stabilization policies.

Farmers are reaping the bitter harvest of neo-Keynesian macroeconomic policy they did not consciously sow. They might well contemplate how to have a part in sowing the seed for the next harvest. Agriculturalists need to be as diligent in helping farmers choose a variety of macroeconomics as in helping them choose a variety of wheat. Farm organizations and spokesmen are powerful political forces, but for the most part they have not used their influence for constructive, consistent macroeconomic policy. The excesses of neo-Keynesian economics are not ultimately the fault of politicians but of citizens uninformed of the institutional requirements for operating a responsible economic system in a world where people and collectives pursue self-interests.

The economic structure of the farming industry in the long run will depend more on federal taxation, spending, money supply, and trade policies in the Federal Reserve System, the Internal Revenue Service, and Department of State than on commodity programs in the U.S. Department of Agriculture. The "farm bloc," though less visible than before, still wields much influence in Washington. Because the future of the farming industry is so much influenced by sound monetary-fiscal policy, it is well for farmers to turn some of their attention from traditional commodity programs to money supply, wage-earnings supplements, measures to reduce labor-management conflicts, and other macroeconomic issues and policies so important to the economic well-being of the farming industry.

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