The Benefits of Farm Programs:*

Incidence, Shifting, and Dissipation

By MASON GAFFNEY

I
Introduction

I WRITE AS ONE who has spent half his career inside and half outside agricultural economics. That makes me less familiar than many agricultural economists with the details of farm programs, and this will be the kind of treatment where you cannot see the trees for the forest. What I had in mind when I undertook this inquiry into farm programs is that, like a man from Mars, I may be able to contribute something useful with an outsider's perspective. At the same time, as a land economist who has studied the southward movement of subsidized California water to irrigate subsidized cotton developed by subsidized research to replace eastern lands idled by public expenditures, I have some feel for the tensions and contradictions of that set of random programs, agencies, and appropriations which we laughingly refer to as a farm policy.

But I do not wish to scold agriculture for outstanding iniquity. As farm spokesmen have always argued, other industries are worse. Restrictive farm programs do not yet match the production allowable prorate of major oil-producing states which let wells produce something like seven days out of each month. The numbers of farm firms have never fallen so low as auto-manufacturing firms. And farmers have never conspired so easily in restraint of trade as Main Street merchants in the typical county seat. I never cared for the implied philosophy that Billy may cheat because Johnny started it: we try to teach our children better. But I do not question that Johnny started it.

I do wish to argue that the farmer's "countervailing power" in which we put our faith is exercised for the benefit of a minority in agriculture; that inter-industry equity is a meaningless idea, and our efforts to achieve it are purchased at the cost of greater inequity inside agriculture, and of unacceptable social cost greater than any benefits; and that even the benefits may be transitory.

II
The Proximate Incidence of Gains

THE PROXIMATE BENEFICIARY of most farm programs is the landowner

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per se. Farmers who are not landowners, like the migrant harvesters who get down to 25 cents an hour in some places, do not gain, but suffer from lower demand for their srevices. Landowners who are not farmers, such as the matinee idols, senators, industrial executives, and country bankers who sink their spare change in rural real estate, benefit greatly. In the short run some tenants with long leases, or renewable ones under custom-bound crop shares, may gain a good deal. But these tenants really have a species of equity in land, and it hardly rises above the dignity of a quibble to cite them to refute what is otherwise too obvious for serious question.[1]

Agricultural economists are becoming increasingly vocal on this subject which, as farm land values continue to soar in defiance of falling "farm" income, is increasingly apparent. The work inspired by Walter Chryst is outstanding.[2]

His findings really should not surprise us. The surprise is why it took the profession so long to catch up with David Ricardo. In analyzing the corn laws—the farm price supports of his day—he made the same point, and on the side enunciated the law of rent and founded classical economics.

Ricardo must be qualified, some say completely rejected. It is true that the increase of rent in one industry is limited because in the long run we can increase the land supply. But we do so only at progressively higher cost. That is why the low-cost lands yield rent—which, after all, is about what Ricardo said.

Others point out that, if landlords gain from higher prices, they also are the ones who have to withdraw a resource from production. True enough —but they get paid for it. Here is where the farm landowner has it over the members of privately financed cartels. The oil man idles his well at his own expense. The farm landowner gets paid for idling land, and he has the choice of banking land or not, as his personal circumstances dictate. No wonder the other cartels complain—they should be jealous.

It is precisely the fact that land is selected as the input to be idled that makes the "farm" programs really landowners' programs. If we idled labor, labor would become artificially scarce. Likewise, if we sought to restrict output by limiting the input of barns, hay balers, or peach trees, we would make them scarce and put them in position to capture the benefits of

[1] A few programs may give quotas to tenants rather than landowners. Such a quota, if permanent, is a new kind of property which would stand to capture the benefits of farm programs.

[2] For example, R. F. Boxley, Jr., and W. L. Gibson, Jr., *Peanut Acreage Allotments and Farm Land Values*, Va. A.E.S., T.B. 175, 1964; F. H. Maier, J. L. Hedrick and W. L. Gibson, Jr., *The Sale Value of Flue-cured Tobacco Allotments*, Va. A.E.S., T.B. 148, 1960; J. L. Hedrick, "The Effects of the Price-support Program for Peanuts on the Sale Value of Farms," *Journal of Farm Economics*, Vol. 44(5), December, 1962.

price supports and technical progress. If we idled some of *all* inputs in farm industry, we might properly call it a "farm program." But we single out one input, land. One result, as everyone knows, has been to weaken production control so much that one is tempted to wonder if that ever was the prime objective. The greater effect has been to change the relative bargaining power of different inputs inside agriculture vis-à-vis one another and shift the terms of trade to favor land.

As among landowners, the programs also have a systematic bias in favor of larger ones. Larger landowners can spare marginal acres easier than smaller ones. Their factor-mix is already lean on labor and machines relative to land—we usually perceive that as lower costs per acre. Smaller farmers, below optimum acreage, are by definition in the stage of increasing returns to land, with marginal value greater than average. Those programs that cut back everyone by a fixed per cent of his land are therefore harder on smaller landowners whose marginal acres mean more to them.

The bias is only slightly offset by exempting minuscule farms from cutbacks in some commodity programs: these are charity cases. There may be a greater offset in basing quotas on histories of production rather than owned acres, because smaller landowners have tended, more than large ones, to push their land to its capacity and grow intensive crops where they could. But negating that is the fact that larger landowners tend to hold the best land, of which a larger share would under an optimal program have historically been devoted to supported products.

The commodities enjoying strongest support are on the whole land-using: cash grain, wheat, rice, and cotton are prime examples. The littler fellows who feed the grain to fatten hogs and cattle are not quite so well treated, nor are those who grow their own. The argument that they are protected by limiting feed grains hardly bears examination, and the quixotic behavior of the National Farmers Organization would suggest a membership frustrated to the point of irrationality.

The pinch of land-idling on the interfactor terms of trade is accentuated today when various pressures to substitute capital for labor have tended to increase the optimum landholding. At a time when pressure to expand has not yet worked itself out by consolidation and cannibalization of weaker farms, most farms are in the stage of increasing returns to land, with the marginal value of land greater than the average. In that context, programs that cut back on land put on it an even greater premium than under static conditions.

Now at the same time we are thus manipulating factor proportions and terms of interfactor bargaining, another set of farm programs seem calcu-

lated to inure to the benefit of farm landowners in another way. These are programs of public works that bring to land water, or cheap power, or flood control, or improved access, or what have you. Here I am using "farm program" broadly—these are not operations of the Commodity Credit Corporation. They are, however, very much a part of the total bundle for agriculture secured in the political process—the Great American system of public works for private profit. They are sponsored by organized farm groups, and it is this larger picture with which this paper is concerned.

Let us, without pretending to comprehensiveness, remind ourselves of the richness and variety of these programs by enumerating several.

The federal reclamation program is most often cited. In one way it represents the genus poorly, because of the so-called "anti-speculation" provisions which purport, with varying success, to ration the conversion of public investment into private land values to a maximum 320 acres per family. But small, medium, or large, it is still obviously a program to increase land value and may reasonably be taken as the prototype of public works programs. Other water supply agencies, notably the Army Engineers, make no bones at all about their work enhancing private farm land value for the benefit of a few.

In multipurpose projects, by whatever agency, farm landowners usually receive benefits of price discrimination, getting power or water at much lower rates than city consumers. In federal reclamation projects, which do ask farms to help repay some costs, the irrigation component gets interest-free money.

But while reclamation is the most conspicuous of the expansive genus of "farm programs," it is not, I think, the most pervasive. That distinction belongs to the way we handle the layout and financing of distributive networks generally—that is, our utility and transportation lines.

Most distributive networks consist of a rich, densely peopled center grading off toward the fringes into marginal territory that barely repays the cost of service, and submarginal territory that is carried by the surplus-yielding center: perhaps promotionally, looking to a better future, but often unwillingly by force of state law. It is almost universal practice that charges throughout this network are either uniform—the postage-stamp pricing principle—or insufficiently differentiated to reflect differential costs. The charges may be rates, with private utilities or carriers, or taxes, with public roads.

The proximate beneficiaries of submarginal extensions are clearly those whose lands they serve. The benefit is not universally diffused, but localized within the ring served by submarginal extensions. To enjoy the

benefit, one must locate where it is to be had, and of course pay the price in rent or land value.

We can all supply examples—the only problem is where to stop. Local rural roads are everywhere costlier than farmers would or could pay for themselves, and state financing means tapping the urban tax base for rural works. Small feeder airlines serving rural areas require and get heavy subsidies. Sparsely populated western states have many more miles per capita of federally financed highways than do urban eastern states, reflecting what the Indiana senator, Albert Beveridge, once styled "the free coinage of western senators." The Rural Electrification Administration funnels cheap credit to distribute farm power. Rural Free Delivery carries the mails to whereever a farmer may choose to locate. Western irrigation districts carry water up hills and over dales without surcharge at the end of the line. And so on.

Common carriers' freight rate structures generally discriminate against high-value cargo, to give lower rates to bulk cargo, and farm landowners gain preference from that because farm products generally fall in the bulky low-rate classes.

Then there are the ACP programs which help the farm landowner build up the value of his property: establishing cover, liming, controlling erosion by tillage, strip cropping, and contouring. There are water conservation works—some doubling as farm swimming pools—built with the help of the Soil Conservation Service and other agencies.

We also try to spread credit around rural areas at lower interest rates than would obtain in the absence of the Federal Land Bank, the Production Credit Administration, the Farm Home Administration, etc. Short and intermediate credit, used for production, tends to increase the annual value of land. Long-term credit, used to buy land itself, tends to lower capitalization rates and increase the land value derived from any level or annual values. There was once some thought that rural credit programs might work to offset the bias, in private lending, of credit rationing based on collateral security. But I believe that is now regarded as a visionary scheme unworthy of hardheaded bankers, and credit agencies tend to prefer creditworthy borrowers, much as other lenders always have. So the net effect has been to increase land value by lowering the structure of interest rates available to landowners.

Some would place Agricultural Experiment Station research on top of any list of farm programs. Research might seem to be an objective activity, pushing back frontiers of knowledge, but is it? When did you last hear anyone frame a research project to help labor get by with less land? Are

we not rather oriented to the landowner, who wants to "cut cost" by using less labor? If we ever teach labor to cut costs by dispensing with land, it is incidental to teaching landowners to raise yields per acre. Landowners are the effective client group to whom the AES's staff address themselves.

I will not labor the income tax advantages of farms—expensing of capital investments in "conservation," taking capital gains on sales of breeding stock, disguising consumption expenditures as business costs, and preferential laxity of enforcement—because others also receive tax concessions, and I am not at all sure farmers do as well as oil men or suburban real estate speculators. But it is interesting how the tax cards are stacked for the larger landowners. The breeders, whose ranches on the average not only outspread but outvalue other farm firms, and whose taxable income is largely land rent, get capital gains. The feeders pay on ordinary income.

Last, we should mention agriculture's peculiar institution, the *bracero*. I can imagine clever arguments delaying our recognition that primarily landowners benefit from some other programs, but who would ever have the effrontery to tell us that cheap contract Mexican labor was imported for any purpose but to increase the economic rent of farm land at the expense of labor's share? Exemption of native farm labor from minimum wage laws and social security would seem to have a like purpose and outcome.

Having taken all the above steps to raise land value, we cap the performance by paying the landowner for the privilege of holding idle some of his land we have enhanced, so we may pay him more for the produce of his other lands and lower the bargaining power of his labor and other hired inputs. It is little wonder, then, that some people feel the "farm" programs are not that at all, but landowners' programs.

III

The Shifting of Benefits

WE CANNOT BEGIN to rest, however, with the simple conclusion above. Piecemeal analysis of each program shows the systematic bias for landowners, but beware the fallacy of composition. Critics of the landowner-conspiracy approach have long pointed out that new lands opened up by public works, etc., compete with old lands for customers and men and supplies. Higher yields from landowner-oriented research tend to flood markets and lower prices.

The obvious power of landowners over individual decisions may lead us to overestimate their aggregate power and lead them to their own undoing. Landowners are organized well, but not perfectly. They dispute the division of the spoils, and each state has two senators wherewith to claim its

share. The logrolling process therefore becomes the basic mechanism for allocating quotas and other benefits among the senators' clients.

Logrolling is a process whereby we generally get more river and harbor improvements then we need. Is it not to be expected, by analogy, that interstate rivalry for production rights would lead us to grant more than a monolithic and calculating monopolist would allow? It is the nature of the political process to give away more than there is. It is the nature of cartels to stimulate excess capacity. Here we have a mixture of both.

Some analysts have alleged that lower costs of production will be passed on to consumers, but that is bad economics. Prices are determined by supply and demand. If landowners could control aggregate supply they could capture and keep all the benefits of lower production costs. Whether benefits are shifted depends on what happens to aggregate supply.

In a very few programs supply is effectively controlled. Tobacco is the outstanding case. Just why tobacco programs are so much tighter than others I am not sure, but I suggest several plausible reasons. There are no farm consumers of the raw material to apply counterpressures, as with feed grains. Demand is exceptionally inelastic, there being no near substitutes. Production control is not a novel idea but goes back to the seventeenth century. And the public tolerates control on sumptuary grounds much as it would opium control (except opium is not carcinogenic).

Most other programs suffer from serious leakage. Not being an active farm economist, and never having been a policy man, I observe these from the sidelines, but if my examples are unbalanced or obsolete, I'm sure the farm economists can improve on them.

Marketing orders applied to fruit, for example, generally limit output by proration from existing groves. But there is no effective restraint on the entry of new groves, except that they, too, are required to create a capacity to produce more than they are allowed to produce, inflating costs all around. Taking California as the national problem in microcosm, state and federal subsidies are abetting the entry of new groves by bringing generous new water supplies to lands with soils and thermal conditions that fit them for horticulture.

Voluntary land-retirement programs, like soil bank and emergency feed grain, do nothing to prevent new acres being plowed up to replace the banked ones, sometimes by the same man, sometimes in different regions. The wheat boom in southeastern Colorado, for example, has uncovered a million acres or so of grassland to replace less erosive land idled elsewhere. Some acreage control programs are intermittent. Cotton is one. During wars and other periods of release, new regions hasten to expand their

plantings to establish histories of production as a basis for future quotas—how else has California dealt itself into the cartel?

Some programs are limited to so-called "commercial" counties, where production is centered. The predictable result is the spread of the controlled and supported crop to noncommercial counties. Some crops, like wheat, grow better in noncommercial counties anyway and the eastward backlash of wheat has done much to help burst controls on that crop.

Some programs let "non-compliance producers" sell whatever they will without subsidy.

Some programs reap a whirlwind of substitution. The corn program is the most extreme case in point. It seems that the American hog and steer are quite omnivorous and thrive on small grains too. So the corn program has become the feed-grain program, but the net has yet to be cast wide enough to stop the principle that scarcity breeds substitution. The animals also like silage, sorghums, soybeans, concentrates, hay, pasture, and who knows what else? One can only hope that the easterly movement of wheat and the westerly movement of feed grains may stop short of complete reversal of regional specialization based on comparative advantage.

It also seems the American consumer is willing to substitute cheap white meat for dear red meat within some limits, and feed-conversion ratios in all livestock enterprises are subject to remarkable improvement under the pressure of dear feed. It's no great trick, after all, to clop off a few marginal months before slaughter, and that is only one of many ways to cut down on the beasts' board bills. Consumers also take synthetic fibers, worry about lung cancer, and heaven knows where this weight-reduction fad may lead.

Substitution can also work for feed grains. When we limit a "milkshed" by marketing order, we run into what Arthur C. Bunce called the "secondary elasticity of production." Producers, that is, can import feed from outside the milkshed. That is like importing land.

In fine, farm commodity groups face the classical problem of all cartels, the price-umbrella syndrome. Organized owners of superior resources cut back output to maintain price, and, under this "umbrella," outsiders expand output and find loopholes to invade the sheltered market. The cartel expands to control the interlopers and new ones appear, until a final dissolution which leaves a legacy of excess capacity, much of it irreversible. Economic history is littered with the corpses of cartels thus destroyed by their own machinations.

The farm commodity cartels are rather more vulnerable to overexpansion because their board of directors is the Congress of the United States, which

includes the voices of fifty major and countless minor jurisdictions, plus the increasingly restive consumers. So, politically, the stage is set for expansion. Economically, there is hardly a state within which several commodities cannot be produced at support prices. The long-run supply elasticity of farm products is high, within the relevant range. Let us enumerate several reasons why.

A. There is ample marginal land to bring in, wherever politics allows it. In a few cases, like tobacco, land as such has almost ceased to be a meaningful constraint on output—only the right to use it has value. In some contexts we may properly speak of land as fixed in supply—in tax matters, the supply in one taxing jurisdiction is fixed. But in commodity matters, land is versatile. Since "farm" programs are specific commodity programs, all land used for other commodities may be transferred over. In the Tulare Basin counties, for example, there are countless thousands of acres in alfalfa and pasture, using four or five feet of water per year, just panting for the signal to shift over to cotton. In the nation there are millions of acres of crop land in pasture.

In the aggregate, the supply of farm land is of course less elastic, but yet quite responsive in the long run to high prices and advancing knowledge and technique. The quiet resurrection of the dust bowl through adaptation of culture and species to local conditions is one of the monuments of our times. The conversion of badly drained hardpan Putnam soils of central Missouri to first-class crop land required mainly better traction and cheaper lime and nitrogen. Alkali "wasteland" around Raisin City, California, is now growing cotton and grapes, thanks to gypsum and lower water tables. Deep-well turbine pumps and cheap rural power have reopened many desert lands to settlement. In all states, expansion and improvement of the state and local networks of rural roads and utilities has brought immense new land supplies into contact with the market.

B. Political-economic power attaches to many marginal lands. The owners have the muscle to claim that combination of public works and production rights that rations out shares in the American way of life. The Free Coinage of Western Senators is only one example—its effect on the westward movement of farm production is not hard to trace.

Some marginal lands, especially hard scrabble hill lands, attract the politically inert. Other lands, presently submarginal but potentially superior, gravitate to very different kinds of owners. These lands fall to "strong hands," to those who can afford to pay a present price for a remote future chance of great gain, and who know how to bring political pressure to assure the gains. The west side of the San Joaquin Valley and the

Mississippi Delta are in point. The strong hands provide political leadership and money. Many weaker hands provide votes. Together they keep bringing new lands into production.

C. "Marginal" land often produces high yields per acre. "Marginal" land evokes the image of low yields, frequent drought and crop failure, and the like, and to be sure that is one side of it. But land may be marginal due to high costs rather than low yields. It may be separated from its market by high transportation costs. It may require heavy capital outlays for water supply or drainage. It may need heavy doses of labor or fertilizer, or heavy farm investment in trees, stock, or buildings. And then it may outyield superior lands by many fold, even though its net rent after costs is close to nothing.

The marginality of lands should not be described or measured in terms of yields, nor yet in terms alone of net rents per acre. To foresee the effects of price changes we need to know the *ratio* of non-land costs to gross revenues. The *difference* of those two is net rent; their *ratio* is an important supplemental datum which I will christen the "intensity quotient" (i.q.). Marginal land of high i.q. answers to what some writers have described as land of "high capacity and low efficiency." My excuse for new terminology is expository—emphasizing the ratio helps bring out important leverage effects.

The net rent of land of high i.q. is highly leveraged. If i.q. = .95, a 5 per cent rise of price means a 100 per cent rise of net rent. If i.q. = 1.05, the land is submarginal but crosses the threshold of use when price rises, or cost falls, by more than 5 per cent.[3] And when such land enters the game, it throws on the market outputs that answer not to its low net rent but to its high gross yields. It is the vehicle, if you will, by which large numbers of non-land inputs enter the market on a minimum base of raw land value.

Speaking broadly, these auxiliary non-land inputs include public ones as well as private. Often, as we have seen, public inputs are financed from outside the benefitted area and may then be applied even when benefits are well below costs. By this means, not just marginal but submarginal raw land crosses the threshold and comes on production.

The high leverage on the rent of these marginal lands of high i.q. tends to make their owners political activists. They have a great deal more to gain and lose by higher and lower prices than the well-cushioned owners of superior lands of low i.q. Like Avis, they try harder—harder for quotas

[3] Bunce makes this point using his tests of "efficiency," "capacity," and "elasticity of production." A. C. Bunce, *Economics of Soil Conservation*, p. 38.

and public works. They have everything to gain by getting the outside public to assume some small percentage of their costs. And they are dogged interlopers, hard to wall out of any sheltered market for long.

The type of these marginal lands of high i.q. are irrigated lands in the arid states. They are far from market, they require artificial water supply and, in some farm enterprises, absorb large inputs of labor and private capital per acre. They could flood the Chicago and New York markets with potatoes and apples and vegetables and other western specialties without beginning to return to their owners a net rent at all commensurate with their share of the market. Most of the value is added along the way by non-land inputs and non-farm inputs.

Some of these irrigable lands, to be sure, rise to very high acre values. But let us not be deceived into taking that as an index to their net value to the economy. Part and often all of the private values represent heavy elements of subsidy, including a transcontinental freight rate structure that carries potatoes from Kern County, California, to New York City for only 150 per cent more than the rate from Aroostook County, Maine. Many lands now busily supplying large shares of the market and yielding rents to their owners are, in an over-all social accounting, well below the margin.

The arid states are the type, but not the whole genus by any means. There are also marginal lands in the East and Midwest and South. Land may be remote not just because it is at the end of continental transportation lines; it may be beyond the local networks. And within the farm it may be remote from the center of storage and operations. Or it may require unusually heavy inputs for draining or fertilizing or stabilizing. The loose economy of land which has characterized our entire national experience has left a latent reserve of by-passed acres in all regions. Much of this marginal land is "high i.q.," with high gross yields per acre.

In analyzing aggregate national and world supply, the farm-to-market transportation input should certainly be counted heavily as a non-land (or non-farm land) input that leverages the net rents of lands at the end of long hauls. It may be just an accident of geography, but yet a fact, that our greatest national reservoir of good soils fans out west of the Ozarks along the tier of prairie states, speciously central yet increasingly remote from major populations on the two coasts. These are high-yielding lands, too, and a small percentage price rise can convert many of them to feed grains, with overwhelming results. Perhaps we should describe much of this as transfer of land from pasture to plow, rather than extension of the margin, but the effect on output is much the same whatever we call it.

Here we should note the differential importance of price stability to the

usability of high i.q. lands. The higher the leverage on net rent, the greater is the value of price stability to a landowner, because the greater is the percentage reduction in variation of his net income. One aim of price support programs is, of course, stability. To the extent they succeed, they do more for high i.q. land than low. If we include transportation among our non-land inputs, we find high leverage lands farther from markets. Since the area of a circle increases with the square of its radius, and since the great mid-continental Golconda of prairie soils is far from markets, price stability acts strongly to bring on new lands of high gross yields.

D. There is also great supply elasticity from superior lands, through elevation of their i.q.'s. This is, indeed, the most commonly cited cause for the impotence of acreage restriction as a supply control. We pour more non-land inputs onto limited acres and discover, to the evident surprise of many, that the curves of marginal product and marginal cost run parallel and horizontal over a long range so that a slight rise of price or drop of costs can lead to great intensification. Lands which Conrad Hammar thought had "high efficiency but low capacity" now, it seems, also have high capacity (as he had originally suspected when he and Muntzell first wrote of their surprisingly low man-land ratios.)[4] The latent capacity simply was not fully used.

Here, again, our concept of i.q. provides an easy explanation. Suppose —and this is realistic—a farmer has a choice between two different intensities of land use, *A* and *B*. *A* yields slightly less net rent per acre, but at a low i.q. of .50. Shifting to *B* means higher net rent, but at the cost of a much higher i.q. of .85. He might very well prefer *A*. High i.q.'s are uncomfortable and risky: a slight fall of price and one is wiped out; a strike or labor shortage can be disastrous; bad weather is murder. Or the farmer may have taken too seriously the bad advice of certain public servants who advise us to maximize benefit-cost ratios on public works—that being comparable to minimizing the i.q. The low i.q. enterprise—barley or onions, for example—yields much less than the high, but it yields a safe, steady return each year, without acute management problems and with plenty of slack to cover mistakes and contingencies.

Now suppose we support prices 15 per cent above their former level. The .85 i.q. enterprise now nets twice as much as formerly, the .50 i.q.

[4] C. Hammar and J. H. Muntzell, "Intensity of Land Use and the Resettlement Problem in Missouri," *Journal of Farm Economics*, Vol. 17, pp. 409–22 (1935). C. Hammar, "Intensity and Land Rent," *Journal of Farm Economics*, Vol. 20, pp. 776–91 (1938). I have long been sorry that Hammar, in the 1938 article, persuaded himself that the factor disproportions disclosed in 1935 were rationalizable. I suspect they betrayed serious economic imbalances.

enterprise only 1.30 times as much. That tends to overcome the landowner's natural aversion to risk and worry and entice him to lay out more for non-land inputs. Leverage! How little we have appreciated its latent power to multiply yields. Give the farmer a place to stand, and he can lift the world.

A recent Iowa study of corn yields[5] concludes that Iowa alone could supply the nation's output of feed grain, if only all farmers improved their practices to the standard currently observed by the most advanced managers. It is not likely the other states will soon give her the chance to prove it; but it gives a notion what giants in the earth we stir when we pry open the gap between prices and costs.

E. Submarginality of land needs to be conceived over time. Some lands yield a nice rent surplus for a few years until some limitational input, like ground water, gives out.

Now we have established a fairly definite policy of public rescue of such areas—their residents do vote, after all, and they also benefit from a peculiar combination of public admiration for the self-reliant frontiersman and pity for the welfare case.

That encourages settlement of such lands in anticipation of public rescue. As the ground water drops, the legislative wheels grind out canals and dams and whatever else it takes to save this "established" area from natural disaster. By this process, many lands otherwise submarginal can enter production, even before the public works are built on which they depend.

F. Finally, there is the aversion of the American people to philosophical consistency. We may praise it as "pluralism" or damn it as "indecision," but what we do with the right hand we often undo with the left. So if we are not quite sure we are doing right to idle land, we support a host of counter programs to reclaim new land, and gloss over the contradiction with talk of "reserves for future crises" and "interregional equity"—euphemisms for excess capacity and senatorial logrolling.

Added to that, we have the inertia of existing expansive programs. The juggernaut in motion is nearly irresistible. If it meets a few immovable objects, it detours them and chugs massively on. The agencies and their client groups are not much concerned with their aggregate supply impact. They want their share of the melon in any event. With the innocence of babes they tote up benefit-cost ratios based on support prices, and zero-interest costs, to justify probing deeper and deeper below the economic

[5] Wm. Shrader and N. Landgren, "Land Use Implications of Agricultural Production Potentials," in L. Fischer (ed.), *Shifts in Land Use*, Nebraska A.E.S., 1964.

margin of cultivation. The higher we hold price, the greater pressure we put behind the movements for developing new lands.

Sometimes we hear that new lands do not compete with old but produce different crops. That is of course promotional drivel. All foods compete for the same shelf space and stomach space and budget dollars. If new lands do not compete directly in corn or wheat, they do indirectly by releasing older lands transferable to corn or wheat.

In sum, the supply of farm land in the long run may be regarded as quite elastic to price, and the supply of farm products even more so through substitution of non-land for land inputs, or intensification. It may be, then, that the complex of farm programs is playing the same kind of ironic twist on landowners as the Homestead Act and its associated subsidies to hasten rail penetration of the heartland. The rails, you recall, each worked to raise land values near the routes but in the aggregate brought in so much land as virtually to destroy its unit value by the 1880's and 1890's, bringing on Populism and Bryan. Is that what the omens now portend?

University of Wisconsin-Milwaukee

(Continued)

Plea of the Newborn

THE YOUTH, of course, is an innovator by the fact of his birth. There he stands, newly born on the planet, a universal beggar, with all the reason of things, one would say, on his side. In his first consideration to feed, clothe, and warm himself, he is met by warnings on every hand that this thing and that thing have owners, and that he must go elsewhere. Then he says, "If I am born into the earth, where is my part? Have the goodness, gentlemen of this world, to show me my wood-lot, where I may fell my woods, my field where I may plant my corn, my pleasant ground where to build my cabin."

"Touch any wood, or field, or house-lot, on your peril," cry all the gentlemen of the world. "But you may come and work in ours and we shall give you a piece of bread." [From the essay, "Man, the Conservative."]

RALPH WALDO EMERSON

The Benefits of Farm Programs, II
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By MASON GAFFNEY

IV
The Dissipation of Net Benefits

A. *The Short Run*

If landowners are ruining themselves by too much success, that is not yet apparent in the value of farm land, which keeps rising in the face of falling farm income. How do we account for this perverse behavior? It is a complex phenomenon of many causes. The analysts' problem is to get some feel for their relative weight.

In part it is a matter of lag and recovery. From 1940 to 1950 land values lagged farm income; now they are making it up. But in 1940 we had great excess capacity in land, a fact which goes far to explain the lag of land values in the forties. A return to the low income-value ratio of 1940 is not necessarily a return to a stable or desirable norm. Let us table this point for later reappraisal.

In some areas landowners' share of the product may be rising. Farm wage rates, which multiplied in the forties, seem to have dropped in the fifties as wartime demands for common labor gave way to the modern emphasis on training and skill. Tenants have been displaced, where customary crop shares gave them too much of the pie, by managers and machines. Farm expansion pressures in many areas have let land claim a marginal value greater than its average net value. Cheaper fertilizer and insecticide and herbicide have cut costs. "Conservation" measures once thought essential are being abandoned for cheaper alternatives—for example, crop rotation for continuous corn and fertilizer. If we consider how much we have to pay to get farmers to put a few million acres in retirement programs, and extrapolate the implied annual value of land to all American farm land, we get an annual value equal to the entire "farm" income.

Even on such fragmentary evidence it is hard to avoid conceding considerable weight to the thesis of a rising landowner's share. Since farm prices have not been rising, the implication seems to be that lower costs have been captured by landowners in higher net rents.

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Of course, urban expansion is also boosting land values over many areas. In 1958 I estimated the area of urban price influence at 100 million acres. It was a safe guess, because it is not a statement subject to precise evaluation. What is "urban price influence," anyway? Farms near town have always been worth more, and "part-time" farmers, both poor and rich, have always drifted back and forth, from commuting to farming, of the dirt or gentleman variety. In this broader sense, 200 or 300 million acres might have been the better figure then, and certainly would be now after another eight years of sprawl.

We are all familiar with the explosion of recreation demand. This, too, is largely a kind of urban demand: most upper-class suburbs, indeed, evolved from summer resorts. Today, recreation demand in the extended sense dominates some entire states, notably Vermont and New Hampshire; and in all states its force is felt, sometimes over areas as large as Vermont or New Hampshire. It is often the salvation of regions whose net income from farm products would not sustain land values.

We should not think of residential-recreational values as spurious "nonfarm" influences. They are subject to different cycles than crop income and bear separate analysis on that account. But they represent real economic values, phychic and implicit though they may be. Improved urban-rural access has genuinely added to the production power of rural land to answer real human wants, of a kind that full-time farmers have always appreciated.

In addition to conversion to urban use, and partial conversion of full-time to part-time and recreational farms, there is an important set of indirect effects of urban expansion on farm land values. Urban expansion sends out shock waves of land-use conversion that travel through the entire hierarchy of farm enterprises as each begins to invade lands in the next less intensive use. This effect is most observable in California, with its great variety of enterprise and its steep gradient of intensities. As subdividers pull orchards to make way for metropolitan Los Angeles and San Francisco, the orchardists push out, carrying with them a new higher intensity and standard of land values. They sprinkle themselves about here and there in a kind of low-density horticultural sprawl, inflating land values over wider areas than could ever find markets if all were actually in producing groves. The trees drive out vines or vegetables. These replace dairies or cotton, which in turn press on barley, and so clear to the lowliest wilderness use—where they meet the wrath of the Sierra Club.

The whole process is calculated to add to farm land values—and perhaps

ultimately to farm output. The second, we will see, is deferred. The first is immediate.

Mineral rights is another cause for high farm values. In all areas where mineral rights have not yet been reserved from surface rights, the prospect of future lease payments and royalties may dominate values. William Scofield, who does such an excellent job of reporting on farm real estate values, would be hard pressed, I think, with his limited staff, to untie the bundle of rights in the Williston Basin, or Oklahoma, or Morrow County, Ohio, or Kern County, California, and report only on price changes based on farm influences alone. The stepped-up search for oil in the United States is no small matter. Oil royalties and leases and bonuses paid to passive landowners run $2 to $3 billions yearly, and the hope of cutting in on the bonanza certainly boosts farm values in areas of good mineral prospects, possibly out of all proportion to the sober probabilities of success.

So we are not at a loss for reasons to explain the paradox of rising farm real estate values and falling farm income. But there is another and more important reason.

Many farm programs, of public works and production research, enhance the capacity of land to yield income. Land values respond to that higher capacity immediately; actual production comes along much more slowly. A handful of alert innovators seize on new possibilities and convert their land to the new uses. In the process they often buy land, at values reflecting in part the income from higher use. Since only 2 to 3 per cent of farms, and a smaller percentage of land, turn over each year, these few purchases by aggressive innovators loom large in the sales figures which we then blow up to estimate the aggregate value of all land.

We need to distinguish carefully a rise in the unit value of land of constant quality, and a rise in aggregate values brought on by qualifying land for higher use. Consider the analogy of urban expansion. We often read that urban land values are rising, but that has not been generally true for some years. Rather, they are spreading out. Rural land appreciates when it becomes convertible to urban use. But older urban land is more homogeneous and a truer indicator of the trend of urban land values per se. It has been falling in many areas.

So when new water supply qualifies dry range land for citrus and olives, it is not the unit value of homogeneous land that rises. Rather, the premium value of irrigated land has been spread thinner, to the potential discomfiture of owners of older irrigated land. Older producing areas would give a truer index to the trend of land values of homogeneous quality—if we exclude those that have, in turn, been invaded by the city.

Few conversions of farm land use are as neat and easily defined as the conversion to irrigation. There are many margins and many degrees of intensity, overlapping and intermingled. But the general principle is the same. Conversion of land to higher use, enabled by new public works, or new techniques, is not the same as a rise in the value of homogeneous land. Conversion increases the aggregate effective supply.

The distinction would be less crucial if the new capabilities of land were quickly exploited. Then the new supply would lower prices, older lands' value would suffer, and aggregate land values would accurately reflect land income. But in practice the supersession of land uses is a matter of generations, as Ray Teele, David Weeks and Charles West, Roy Huffman, and other water economists have abundantly demonstrated. In the transition, land has a value based on expectation of higher use but markets no products commensurate with the value. Since this is land of high i.q., as a rule, it must ultimately market products more than commensurate with its value to warrant the value. Just who will buy those products, and at what prices, is a problem we defer. Meantime, we expand the area of land whose value is premised on intensive use. We increase values of those lands without paying the penalty of higher output and lower price.

That is, I think, the prime factor in today's land price paradox. It is not in competition with other explanations, but helps tie them together. The lag of land values behind farm income in the 1940's reflected the preexistent excess capacity in land, brought on by premature public works and production research in the twenties and thirties, and we are now returning to a comparable condition. Urban price influence affects an area many times greater than is actually converted to urban use, or ever could be without deflating values to nothing. The larger share of landowners in farm income reflects cost reductions that have not yet brought in enough new land to shift the benefits forward in lower prices. In the short run, the buildup of new areas even absorbs as inputs some of the output of older areas—breeding stock, seed, or feed, for example. And investment of non-farm inputs in areas requiring heavy public works adds to local demands for food and diverts local labor from farming.

Thus, if retribution is to come, it is deferred. Meantime, the gratifications of the system are immediate. Higher land values are enjoyed all around. The mere fact that owners do not take quick advantage of them does not mean they do not appreciate them. The individual can always sell, or mortgage, and most of us like to have options that we can exercise at our leisure.

A system of instant pleasure and deferred pain lends itself nicely to the

demands of the American political process. Short-run electoral survival is paramount; long-run problems may fall on one's successors. Little wonder, then, that we have had so much trouble avoiding contradictions in our farm policy.

B. *The Long Run*

In the long run it seems inevitable that the euphoria induced by the long lag of supply response should give way before the weight of massive new capacity.

In the short run, implicit rent is a lax taskmaster. In a period of rising land values it is especially so because the annual increment to value is a species of income from land which helps cover carrying costs. Even with steady land values, implicit rent merely represents an opportunity, a carrot without a stick. It is an option open primarily to those who need it least, those affluent enough to own land, and who are least likely to exercise the option to its utmost.

But over time more of the implicit rent becomes explicit. Fixed charges build up. Land changes hands at high values and is mortgaged. Property taxes and land assessments respond to the higher base. And of course each year a few more owners jump at the carrot, regardless of the stick. The demonstration effect of progressive innovators is contagious. Older capital depreciates and its replacement affords the occasion to intensify. Older farmers retire. The collateral of high land values lures more capital into agriculture. High asking prices for land make intensification an ever more attractive alternative to land expansion. And social prestige shifts from the old to the new way of life, and the latest equipment becomes a status symbol.

The result could be a dramatic price collapse, one which would be worsened by liquidation of farm capital and a panic rush to cash in on fugitive opportunities. But we have forestalled much of that by our program of price supports. If they cannot hold prices forever in the face of surpluses, they can at least preside over an orderly retreat to ever lower percentages of parity. Thus farm landowners never have to take the full force of the debacle of the cycle of overexpansion in one blow—their world can not end with a bang but with a whimper.

The trouble with that policy is that supply curves are irreversible. New techniques discovered and disseminated under the stimulus of high price are not forgotten when prices drop. New regions are not abandoned, new roads not rolled back up, new dams not unbuilt, new quotas and congressional districts not relinquished. Slow as positive supply response may be,

negative response to lower prices is much slower and in some conditions even perverse. So when we ride down the supply curve by lowering support prices, it is not the same curve we rode up, but much steeper. The new equilibrium price is lower than what we would have obtained had we never supported prices. That is the landowners' deferred retribution.

The process has some of the marks of a boom and bust cycle like that of irrigation from 1918–40. But modern farm policy has made it more of a continuous process. Suffering and retribution do not always bring education and understanding. No lights flash or bells ring to announce the period of retribution and penance. No one resolves to foreswear supporting prices above market. On the contrary, the new free market price at the bottom of the steep downwards supply curve generates acute vertigo and a firm resolve to avoid the perils of full competition.

So, in our "orderly retreat" from insupportable prices, we drop them a peg or two but continue to support them above a free market equilibrium, which falls progressively lower by virtue of the fact that we are holding prices above it. A pretty dilemma, indeed! We fear to unbottle the productive genies we have awakened by price supports; but the same high prices which we fear they would undercut keep awakening more genies than we can control.

The result is surpluses and excess capacity—at or below price levels that would have prevailed had there been no farm programs. And we continue to add to the irreversible excess capacity; not as fast as we would at 100 per cent of parity, but faster than we would at the new equilibrium price.

The greatest beneficiaries are the owners of marginal land of high i.q. brought into the market by this or that subsidy. The losers include the owners of superior land who ultimately have to share what might have been their market with others whose share of political power exceeded their share of natural land value. Consumers may ultimately benefit by lower prices, although that depends on the fate of production controls and diversion programs, and if consumers do finally gain they will have earned it. Taxpayers are big losers, and we all lose as balked consumers of the various useful goods and services that might be produced with the non-land input poured into needless public works and development of high i.q. land. (The argument that these inputs would be wasted anyway hardly warrants a reply.) Recreationists are losers as agriculture invades and reclaims more and more wild land it never needed.

The distribution of gain and loss is less important than the fact that the

aggregate loss exceeds the gain by a wide margin. The ultimate end toward which the programs are drifting is dissipation of the benefits in sheer waste. The waste consists basically in locking up the latent productive power of superior land, duplicating it at great private and social cost on the desert, in the swamps, and in the backwoods, and then locking up part of the duplicate land as well. We deny ourselves full advantage of our landed heritage and even of the capital we substitute for it. We produce at real human cost what nature wants to yield freely above our efforts.

Location and regional specialization are badly distorted. Land best suited for corn is diverted to hay or small grain, while corn invades the wheatlands and wheat tears the cover off erosive grasslands. Land near cities goes into low uses while remote land goes into horticulture, magnifying the transportation bill and the farm-market spread. We spread thin the economic rent that would under an economic regimen focus on better soils and location. We can hardly blame the trucks and railroads then if they take a larger slice of the food budget.

Public enterprise is magnified at the expense of private. The system is a combination of artificial scarcity and artificial abundance of land. Within the given framework of social overhead capital and infrastructure we create an artificial scarcity by idling land and taxing private capital needed to fructify it. Concurrently we create an artificial abundance of land by subsidizing tax-free public works, transport-utility extensions, and production research. The net result is replacement of competitive private by public enterprise and semi-public regulated monopoly enterprise. We can hardly wonder, then, if taxes rise and if large corporations and bureaus dominate more of economic life.

In sum, we are left with heavy costs and few benefits. As high as farm real estate values have soared, they still hardly represent more than a capitalization at the going rate of the annual budget of the U.S. Department of Agriculture, not to mention some $2 billion charged to "foreign aid" that really belongs in the agriculture budget, plus public works charged to the Department of the Interior, and to the Army, and other billions in the other programs mentioned earlier. The benefits are dissipated in the terrible contradictions of the programs.

In coming to this unhappy state, land plays the role of the Lorelei. The siren song that leads the sailors on the shoals is the lure of unearned increment. Land is ideally cast for the Lorelei role. It is immobile between congressional districts and so captures net benefits to districts brought home by the congressmen. That makes it the coin for paying off political re-

tainers. It is the ideal medium for promising more than can be delivered, because the lag is so long before most landowners capitalize on new opportunities.

And so our surplus problem traces back to the implicit national policy of high land values for everyone. To straighten out our farm economy we need some fundamental reappraisal of the prevailing system of artificial scarcity to enhance some land values and public works to enhance others.

University of Wisconsin—Milwaukee

Vital Need for Forest Conservation

AT CANADA'S National Forestry Conference in 1966, some forecasts were reported by R. M. Fowler, president of the Canadian Pulp and Paper Association who was chairman of the plenary session. The demand for pulp and paper 34 years hence is expected to be 5½ times that of today; requirements of hardwood are expected to nearly double by 1975; the demand for softwood lumber and plywood is expected to grow by nearly 50 per cent by 1975 and to double the 1975 figure by 2000. "We can say," the chairman commented, "that a major effort is going to be needed to obtain these possible levels of demand. When we look to 2000 A.D. it is quite clear that with present methods and arrangements we will not have enough wood to meet the estimated demands."

That is the industrial aspect, but we must not forget that the forest has other uses and virtues. Visitors find the appearance of the woods enchanting, and every tree, taken singly, is beautiful. These visitors are consumers of goods and services. Their expenditures benefit merchants, farmers, labourers, hotels, and many others. The new money they bring into the country is an important factor in our balance of international payments.

The tree that is felled and floated or trucked away to the sawmill or pulp mill becomes the raw material of another existence, takes on a new life. A dead tree put to use becomes something lively and profitable. But it must be replaced by a living, growing, tree.

The forests are renewable. Nature will see to this if not interfered with. But they can be despoiled or killed, not to be renewed in mortal time. If we interfere with Nature's way in the forests then we must use our talent to maintain them.

Good citizenship calls upon every citizen to require and support an enduring forestry program, and to accept his own personal responsibility for forest conservation. [From the Royal Bank of Canada *Monthly Letter.*]