



Dissertation: Chapter 1, Unused Land

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CHAPTER I

UNUSED LAND

I. Introduction to Part I

Part I, consisting of the first three chapters of this study, presents a survey of three basic and, as the analysis of Part II will show, interrelated problems of land use. Each is a "problem" in the sense that it represents a failure of the market to allocate land according to the equimarginal criterion postulated in the Introduction to this study.

Probably no one doubts that there are here and there particular instances where the land market has gone astray. All markets are in some degree less than perfect. The important question is, is the amount of malallocated land great enough, is the overall damage to economic life severe enough to warrant attention from economists preoccupied with other serious problems?

Part I presents the data that have led the writer to conclude that the market's failure to allocate land according to the equimarginal ideal is not merely localized and transitory, but is a general rule, a problem which, with its many ramifications, is well worth the serious attention of economists. Each chapter purports to establish that

the phenomenon it discusses is a violation of the equi-marginal ideal, and also to present such measures as the nature of the problem and available data allow of its extent and probable future trend.

II. Introduction to Chapter One

Probably the most salient shortcoming of the land market is that it somehow consigns a good deal of valuable land to no use at all. Some private holders, that is, evidently find it or consider it to their interest to preempt and withhold land from any use. Were there no demand for the land's services, no "huddled masses yearning to breathe free" in teeming alleys, or thin-pinched peasants cramped on miniature farmlets, no latent talents frustrated for lack of space: were there none of these, good idle land might bespeak no fault in our land system. But as things are, it seems, at least on first glance, to represent some waste of natural and human potentialities. Thomas Adams put it this way:

In New York, and in many cities and villages in the New York region, there are multitudes of dark rooms for lack of space about buildings to enable people to live in comfort; and yet there is abundance of accessible space awaiting a market. . . .

Were overcrowding and congestion necessary because accessible land was scarce, or because the cost of making it accessible was prohibitive, only then would it represent unavoidable waste. But where there is overcrowding in one place it is offset by underloading in another place. Both are complementary and economically unsound in a region having great unbuilt spaces.

The area of the city of New York is 190,161 acres-- of which about 83,000 acres consisted of vacant land in 1920. . . .¹

Clearly Adams implies a violation of, without using the term, the equimarginal ideal. A small amount of additional land integrated into the crowded tenements would have added a great deal to the annual value of the "dark rooms," yet over 40% of the city's area was not so integrated, was not used for anything at all, not even for raising the food for which New York's millions provide one of the world's most concentrated markets.

Such an anomaly strikes the inquiring economist between the eyes. The high rents and congested quarters of New York City are legendary. The total value of her lands compares with that of all the farms in the southeastern states, and her skyscrapers, pushed upwards by the pressure to economize on this high-priced land, are the world's tallest. Yet in 1920 nearly half the city's area was yielding none of the urban services so strongly demanded, nor any income to its holders. Does the land market then fail to allocate this resource to its most productive use?

To answer, we first must know if the area of good accessible land still idle is enough to rouse any concern. This chapter surveys the problem.

To survey one must first define. When is land "unused"? What about vacant lots used occasionally for parking, or baseball? What about idle cropland sometimes grazed or

hunted? Are billboards a "use," and derelict shacks "improvements"? To ask the questions is to suggest the answer. No land is literally absolutely unused, and there is no sharp line neatly dividing the desert from the sown. There are only degrees of use, from 100 per cent full capacity down towards complete disuse. Anyone who estimates the area of "unused" land draws his own arbitrary line, and nearly every published study draws it--if it bothers to draw it at all--differently.

We cannot, therefore, in a broad survey where we must draw on many sources, pretend to any nice precision, or comparability of data. "Unused" land is really only "extremely underused," so extremely that the surveyor, because it is easier to classify things by kind than rank them individually by degree, has, in his wisdom, called it "unused."

But precision based on some arbitrary standard would be a delusion anyway. In fact, the full meaning of our data lies exactly in the fact that they cannot be precise. If only a hair divides the "used" and "unused," then "unused" land is only the most extreme manifestation of a more general condition. For every lot or acre counted "unused," there may be another just across the borderline counted as "used," and perhaps several more working below capacity. So the data of this chapter by no means measure the entire defection of our lands and the shortcomings of our policy. They only introduce the subjects, as this chapter introduces

those that follow.

Thus oriented, let us apprise ourselves whether "unused" lands comprise any problem substantial enough to warrant probing further.

III. Unused lands in some relatively static and underdeveloped areas

In the United States one sees vacant land most commonly, although not exclusively, in "zones of supersession," that is in areas where one land use is giving way to another, usually more intensive. Accordingly, many casual observers have inclined to discount the phenomenon as only a passing growing pain, even now of interest mainly to historians of the old frontier. But a harder look must dispel that idea. For in many economies less dynamic than our own large areas still lie unused.

The late administration of Jacobo Arbenz Guzman in Guatemala brought some of this land to world attention in 1952. This administration expropriated 234,000 acres out of 299,000 that United Fruit held in the Tiquisate area of Guatemala's Pacific Coast, under a law permitting the government to redistribute unused lands among the peasants. Later Arbenz took another 174,000 acres on the Caribbean Coast. The land was of some value, United Fruit claiming \$16 billions, or \$68 an acre compensation for the Tiquisate lands. United did not allow that the lands were completely idle. Conceding

that only 25,000 acres of the Tiquisate lands were in bananas, they held that only 20 per cent of the total was entirely idle. Perhaps the true figures lie between the disputants claims, but clearly United Fruit held a substantial area unused. That is also their practice in some of the other countries where over 3 million acres lie.²

In this practice United Fruit is not alone. Arbenz also found many idle lands other than theirs to expropriate.³ In contrast to the large native holders, United Fruit may be quite progressive in developing its lands. Throughout Central America "huge tracts or latifundia were conferred upon individual colonists and then allowed, for the most part, to stand idle."⁴

Throughout the whole of Latin America a good deal of cultivable land seems to lie idle. Soule, Efron and Ness have provided data for several countries.⁵ More generally, the recent United Nations study of "Land Reform" has this to say of Latin America (excepting Costa Rica, El Salvador, Haiti and Mexico):

. . . large estates take up the greater part of the cultivable land area throughout the continent. . . . While much of the land is not suitable for crop production, a substantial proportion consists of idle lands that have been held for generations. Large plantations are also included in these great landholdings, but do not account for the greater part of the land so held.⁶

According to de Castro, only 20 per cent of the cultivable land of South America is used!⁷

Now consider some of the lands of Asia. Admiral Raymond A. Spruance, retiring U.S. Ambassador to the Philippines, "... gave a piece of parting advice to the Filipinos on land reform, which he considers essential to the progress and orderly development of the nation. The Philippines, he said in an interview, has a great deal of unproductive land whose owners are content to let it remain idle while the pressures of an increasing population increase its value."⁸ In the Philippines, 1.1 million hectares out of 6.7 million hectares in farms were idle in 1939. (Besides that the government holds a vast domain off the market. The Bureau of Forestry estimates that 7.6 million hectares of this are suitable for agriculture.)⁹ In Malaya, like the Philippines long harassed by landless Communist guerrillas, Jacoby reports an "abundance of arable land, and an almost unlimited reserve of virgin soil waiting for cultivation."¹⁰ In south Viet Nam, anti-Communist refugees from the north have recently found that "Fortunately, there are large areas of vacant land available for them. Already a third of the refugees are installed in new homes and are at work cutting timber."¹¹ That, in a country of such microscopic and intensive farms as characterize parts of Viet Nam, is quite remarkable.

Turn to Africa. In Southern Rhodesia there is an European reserve of 49 million acres--about one and a half times the area of England. In all that area there are only

5,400 farms and ranches, some running to over 40,000 acres.

"Immense areas of cultivable land are not cultivated," according to New York Times correspondent Albion Ross, although only a fraction of the 145,000 Europeans in Southern Rhodesia hold any farm land. As to the Africans, some two million of them produce most of what is produced in Southern Rhodesia from small, more intensive farms in their reserve of 30 million acres. But:

Great acreages in the immense European reserve lie idle or are used only occasionally. . . . Thus it is the European today with his great idle acreages who practices the agriculture of the old native tribal days and lets the tired land rest until he gets ready to come back to it.¹²

In Kenya, the recent Mau Mau uprising has brought to world notice a parallel, if less extreme, condition.¹³

Look now at the "fertile crescent." In their small portion of this ancient garden the modern Jews are demonstrating what an enterprising people can do there. A central agency, the Jewish National Fund, bought up Arab lands and made them available to settlers on reasonable terms. While by no means an unqualified success, and in some measure subsidized, still the Jewish experiment puts nearby Arab landowners in a bad light. Warriner writes "At first sight the main crop of Syria appears to be thistles, and so it is in fact. . . ."¹⁴ Only about one-third of the cultivable land is ever cultivated there, according to her figures, and the "cultivated" includes

fallow.¹⁵ She writes of equal waste of land in Iraq. FAO data suggest that the Levant in general contains a higher proportion of "unused but potentially productive" land than any major world region, mainly in Syria, Iraq and Iran.¹⁶ The English geographer W. B. Fisher supplies these figures:

TABLE I

UNUSED LAND IN THE LEVANT¹⁷

	<u>Percent Cultivable</u>	<u>Percent Actually Cultivated</u>	<u>Percent Cultivable that is Cultivated (Computed)</u>
Turkey	30	15	50
Cyprus	65	55	85
Syria and Lebanon	30	8	27
Trans-Jordan	5	4	80
Palestine	44	33	75
Iraq	20	3	15
Iran	10	2	20
Egypt	5	4	80

A few writers have mentioned "labor shortage" to help explain why lands in the above regions are idle. This seems a very careless interpretation. The facts do not allow of it. Although the regions are thinly peopled, most of the people have little or no land, live in abject poverty, often work their small holdings intensively down to a very low margin, and offer their labor for next to

nothing. Thus any one landholder could hire all the labor he needed very cheaply. In Southern Rhodesia, for example, natives work on the European reserve for 2 to 5 cents an hour.

All the same, the idea persists in some quarters that this land lies idle because no one wants it. It is more telling, therefore, to find idle land amid the world's densest clusters of humanity.

Consider Italy: Many vocal Italians say their country is "overpopulated." Teeming humanity seems to be pressing against the limits of nature in an inexorable Malthusian advance to starvation. Step by terraced step, agriculture has climbed the hills only to meet more terraces climbing the opposite slopes. Families huddle in hillside villages and some even in caves, as though there were no room, and in the cities employers fabricate "busy work" to keep alive some pride of being in men grown superfluous. Here, it would seem, is a people who have wrung the last drop from their meager natural resources, a people whose only hope is to emigrate. And yet, in 1949, in the southern Italian province of Calabria:

Thousands of peasants, with their children and their crude belongings, swarmed onto 1,235,000 acres of unused land belonging to rich and titled absentee owners. The police killed a few but thousands more staked out and plowed the land.¹⁸

1,235,000 acres of unused land is one-third the area of Calabria. Perhaps the figure is too high--again, it

doubtless depends on what one means by "unused." But clearly large parts of that "overpopulated" province are nearly unpopulated.

And in this Calabria is not alone. A high Bank of America official, Harry McClelland, then Chief of the Food and Agriculture Division of the ECA mission to Italy, stated in 1949 that much of southern Italy has vast "idle or undeveloped lands in the hands of owners who have not, can not, or will not develop them."¹⁹ Again, "Hundreds of thousands of acres in Italy are undeveloped, especially in the south. No roads, no electricity, no houses."²⁰

Accordingly, the flames from Calabria quickly spread. Peasants seized idle lands in Crotona, Catanzaro, Sicily, Apulia, Sardinia, Rome province and elsewhere, where the sparks of revolt found the combustible mixture of idle lands and hungry men.²¹ Premier de Gasperi finally extinguished the flames only by promising to buy some of the unused and poorly used lands and divide them among the peasants, providing technical aid and some capital to boot. Meantime, it was left quite clear that a good deal of land in southern Italy had been lying idle.²²

India is another country often called "overpopulated." But in 1952, when Nehru divided 60 million acres in Uttar Pradesh among 12 million peasants, the New York Times reported a good deal of "potentially rich wheat land now unworked," and stated "half the land to be parcelled out in

Uttar Pradesh is now uncultivated."²³ And so successful has been Bhave, India's unique land reformer,²⁴ in persuading large landholders voluntarily to give some of their "surplus" lands to the landless, one is tempted to infer there are yet in India many "surplus" lands yielding no income. In Ceylon, according to a roving correspondent, three-fourths of the arable land is unoccupied.²⁵

England is a third country of dense population, a country moreover whose normal high demand for food is enhanced by its vulnerability to naval blockade. Yet in the last century of growing population and growing risk, market forces have tended to remove land from cultivation. From 1867 to 1880, about one million acres formerly cultivated were turned to pasture.²⁶ Sir J. Russell estimates that about 3 million acres have been abandoned since 1891.²⁷ The English "primary" rural population has declined from 1871 to 1950 from about 24 to about 20 per acre, and by an even larger percentage if one includes the "secondary" population in small farm towns.²⁸ Some private parks have grown fantastically large: the 11th Duke of Devonshire's "Chatsworth House," for example, being set on 50,000 acres of park and woodland in Derbyshire--that is one acre for every 600 in England. In 1943 the 22 Dukes of England were reported to hold an average 45,000 acres each, including some of the most valuable urban, suburban and mineral lands.²⁹

Some hint of the untapped potential of English agriculture was revealed during the second world war when English farmers plowed up 38 per cent of their grassland, increasing the cultivated area by more than 50 per cent.³⁰ This they did not through market incentives, but due to direct land use controls. And in 1947, the Agriculture Act, "aimed at reforming pre-war conditions under which 'millions of acres of cultivable land lay derelict,'"³¹ carried forward wartime land use controls because "In our crowded and indebted island we can neither afford the luxury of idle or ill-used acres. . . ."³²

And might we not mention, too, the French chateaux of the Loire and the Gironde; the immense underdeveloped holdings of Spain, the part-idle lordly holdings of pre-Communist Prussia, Hungary, Poland, and Rumania? Might we not circle the globe with evidence of unused land? I think so. But without further detail it is clear that the incentives of the market, in some areas fail to incite landholders to put land to any use at all, even though there is great potential demand for these lands on the part of those living and working in crowded conditions nearby.

IV. Unused Lands in the United States

In the more dynamic United States economy, idle land appears most conspicuously in a more dynamic context, in "zones of supersession" where one land use is superseding an earlier, less intensive one.

That is not to say there are in the United States no more or less static idle holdings. It is, after all, a United States corporation, United Fruit, that we have seen holds considerable land idle in the Carribean area, and lesser U. S. interests do the same. Whatever motivates them there may prompt the same course at home. Texas' King Ranch,³³ California's Kern County Land Co.,³⁴ Irvine Estate, and Southern Pacific³⁵ appear to have strong tendencies in this direction. In the Pacific Northwest, non-restocked cutovers are conspicuous because the figures have been compiled for a public interested in forestry. About one-third of the Douglas Fir cutovers are not restocked, and most of this non-restocked land is around Puget Sound and on the Western slope of the Coast Range, the best timberland. Other timberlands are in a sense idle because they are still under deteriorating virgin timber which adds no annual growth.³⁶ Between Philadelphia and Atlantic City the 100,000 acre Wharton estate has lain idle for decades. In Revolutionary times it supported thriving towns and industries, but later was assembled into one holding and went out of use.³⁷ In North Carolina there are over a million acres of idle cropland.³⁸ And besides these examples there are myriad others. Their lack of public roads obscures much of them from outside observers, and their exact area, and its latent productivity, remain largely mysteries. But in most regions one need spend but a few hours hunting, fishing,

or otherwise knocking about off the beaten tracks to discover a good deal of such "wild" land, much of it never yet captured under the nets of basic public works that enable an advanced society of independent producers to occupy and develop the potentialities of land.

But one can hardly call most of these regions in the United States "static." Static they might be for any activity of those who hold idle land. But to such a degree have American pioneers settled among and around and beyond such lands that much of the country has become, in a broad sense, one, or rather several, vast and loosely bounded zones of supersession, broken littorals over which a rising tide is probing and trickling inland along lines of least resistance, leaving headlands and promontories high and dry in its wake. Here and there one may pick out especially prominent islands of resistance, approximating the latifundia of less dynamic areas. But to classify these as distinct species of unused holdings would be arbitrarily to turn a difference of degree into a difference of kind, at great effort and to no good purpose. We will not try, therefore, sharply to distinguish static from dynamic areas in the United States. We will treat of three major zones of supersession, understanding each to contain a vast area, loosely bounded, and understanding that these do not include all zones of supersession. These three are the frontiers (A) of cultivation; (B) of irrigation, and (C) of the city.

A. Frontiers of cultivation

The 19th and early 20th century farm frontier was a zone of land speculation on a grand scale. During and after the furious turnpike, canal and railway booms of that expansive era great tracts of western land lay idle for years and decades while settlement passed beyond them. Pre-emption of land on this grand scale has been recorded, too, on a grand scale, earning mention in standard histories, and more intensive study in the works of Paul W. Gates, Henry George, R. A. Billington, A. M. Sakolski, Roy Robbins, David M. Ellis, and others. Although they may dispute its import, almost all agree in general on the facts. These following citations serve, therefore, not to promulgate any new doctrine, but only to exemplify the general tenor of informed opinion:

All along the frontier speculation ran ahead of settlement; in many cases it held land out of the market so long that settlement was forced to pass around or over it.³⁹

. . . those vast and beautiful prairies . . . wholly uncultivated for miles because held by speculators, who keep the land for a rise.⁴⁰

. . . (the) best land (is) generally purchased by speculators who have money, not with a view of cultivating it themselves, but to keep it until settlement of the country enhances its value. . .⁴¹

. . . Too often the land grant railways west of the Mississippi found that after much of their land was sold and the bulk of government land along their lines had passed into private hands, their territory was but sparsely settled. Large areas of land had been held for appreciation in value, without improvement or cultivation.⁴²

As recently as 1916, an estimated two-thirds of the Canadian prairie provinces were held by absentee speculators.⁴³ And in California a 1917 survey by the wartime San Diego Food Administration brought out that 62,000 acres of "easily available farm land" were then lying idle in San Diego County. That was an area about equal to the land being used in the same County. The Los Angeles County Council of Defense discovered about 400,000 acres in the same condition.⁴⁴ More generally, the California Commission on Immigration and Housing reported of 250 large, non-railroad landholdings that in 1919 comprised half the farm area of southern California:

That a considerable part of this tillable land lies idle, and that another considerable part of it is not devoted to its most beneficial use; that though there are many thousands of persons eager to get access to this land, much of it is not for sale under any circumstances, and that such portions as are for sale are held under prices usually beyond the productive value. . . .⁴⁵

In more recent times, as a new revolution in transportation has made possible new advances, and the frontier has penetrated to lands less and less well endowed for cultivation, the same pattern persists. The frontier of cultivation still comprises a vast area, thinly settled--and that not in the sense that the farms are large and extensive, but more in the sense that there are large uncultivated holdings among which small farms are scattered.⁴⁶ As many of the lands now involved are of low present and probably also potential value for agriculture, the emphasis of observers

has shifted from the unused lands themselves to the problem of scattered and isolated settlement they impose. I say emphasis has shifted because scattered settlement was also always a serious handicap to settlers on earlier frontiers, and we would err to think the present frontier entirely different from the old. Morris Birkbeck wrote from Illinois in 1818:

One of the greatest calamities to which a young colony is liable is this investment of the property of non-residents, who speculate on their prosperity, whilst they are doing all they can to impede it. . . . This holding back from cultivation of millions of acres, tends to scatter the population of these new countries, increasing the difficulties of the settlers manifold.⁴⁷

And Ray Billington points out:

. . . the pioneer who held back land from settlement in this way separated himself from his neighbors, delayed the coming of schools and internal improvements, and hindered the development of social institutions that would have made life easier.⁴⁸

But where the frontier now lies, this once secondary and temporary problem has become primary and, to present appearances, permanent. The first wave of scattered, isolated settlers has, in many parts of the cutovers, the high plains, and elsewhere, proved the only wave. The empty spaces between settlers remain empty, and a few people are left stranded on poor land to pay dearly for roads and other indispensable public services, or do without.

That is not to say the whole enormous zone comprising the present frontier of cultivation should be cultivated. Some of the uncultivated lands are not idle, but used for

timber, grazing, recreation or watershed protection; and some of them are doubtless better thus used than cultivated. But it is to say that, as long as lack of comparable opportunities elsewhere has pushed many American citizens out to seek a living on these poor and remote lands they could do so more easily and amenably in more compact communities, on the better lands, as almost all students of the areas aver. And it is to say that a more perfect land market would not let the present situation persist, where idle holdings, as well as others used rather lightly for grazing, timber, or occasional recreation disrupt the compact pattern of settlement on lands more suited for cultivation than those to which some settlers are then forced to resort. (lands so poor that the National Resources Board in 1934 recommended retiring 20 million acres from cultivation, and resettling the farmers elsewhere;⁴⁹ and the Resettlement Administration actually did retire several million acres.) For, as Ratcliffe reminds us, "In the perfect market, natural zoning would result; land uses of similar or complementary character would naturally group themselves with maximum benefit to the property owners and to the community."⁵⁰ Even where its value is quite low, idle land thus constitutes a serious and costly problem by breaking up the natural zoning and also driving settlers on to cultivate poorer lands.

B. Frontiers of more intensive farming: irrigation as an example.

1. Private and quasi-public reclamation

The irrigation frontier has received an extraordinary amount of careful study, due to the recurrent financial troubles of the marginal projects, as well, no doubt, as to the inherent fascination of water in a thirsty land. Among the outstanding problems has ever been that of unused irrigable land under the ditch. For unused lands in irrigation projects vex and may ruin enterprises whose financial success depends on compact settlement to minimize distribution costs, and quick development to meet the inexorable interest charges. Few students have failed to note the problem:

Even where all conditions are favorable . . . the promoters of water companies aiming to supply settlers on public lands are often balked of dividends by the "sooners" who seek out each new project in advance of the constructing engineers and locate their claims as soon as the surveyor's stakes are driven. By more or less fraudulent compliance with the Homestead Act, they manage to get possession of the best land under the prospective canal. They have no intention of developing their holdings and use little or no water for irrigation, but hold their patents for a rise in value and thus retard legitimate settlement.⁵¹

. . . the development and settlement of lands not previously irrigated, but for which water has been made available, have become the outstanding problem in land reclamation.⁵²

(Sad is) the plight of the owners of a canal where the lands have been filed on by speculators instead of cultivators. . . . They can wait. The canal owner cannot . . . this . . . has wrecked many a meritorious irrigation project.⁵³

It was believed by the promoters of private enterprises that their inability to force the owner of land for which a water supply had been provided to contribute to the cost of the producers of "water rights" was the principal reason for their financial failure.⁵⁴

In their oft-cited 1927 study, Weeks and West brought out that, while California irrigation projects were ready to serve water to 6.7 million acres, a full 1.2 million acres, or 18 per cent, were unirrigated, although irrigable. Only 4.75 million acres "were making full use of the water."⁵⁵ And of the irrigated land, over one-half was not developed well enough to produce good crops.⁵⁶ In 1930, in the Sacramento Valley alone, 500,000 acres of irrigable land in organized irrigation projects were not being irrigated.⁵⁷ As late as 1940, the United States Census reported that existing irrigation works were capable of supplying water to one-third again more land than was irrigated.⁵⁸

Ray P. Teele's studies cast additional light on the matter. From the 1920 Census he tabulated the percentage of capacity utilized on the projects there enumerated, arranging the projects in order of their age. Plotting the data, and fitting a smooth curve, he read off the percent of capacity utilized at the end of each five years from inception (Table II).

TABLE II

AGE AND DEVELOPMENT OF AMERICAN IRRIGATION
PROJECTS IN 1920⁵⁹

<u>Years from Inception</u>	<u>Percent of Capacity Utilized</u>
5	36
10	45
15	52
20	56
40	65

He observed, "The curves show plainly the immediate cause for the financial failure of irrigation enterprises--the very low rate at which the land included is brought into production."

2. Federal reclamation

The general financial failures of private projects sparked a demand for Federal aid to reclamation which, beginning with the Carey Act of 1894, "was supposed to overcome the difficulties experienced by earlier enterprises in being frozen out by speculators who held the lands to be watered."⁶⁰ But the Carey Act by no means solved the problem. "There has been disappointment here, as in most irrigation projects, in the rate at which the land has been occupied and improved. . . . The speculators and the undesirable farmer can not be entirely eliminated."⁶¹

Following these disappointments, Congress essayed the Reclamation Act of 1902, by which the Federal government undertook reclamation directly, and applied a 160 acre limitation. But by 1912 the Reclamation Service ruefully reported that, "Most of the large enterprises . . . have been in this respect a disappointment, because of the slowness with which the lands have actually been utilized."⁶² Each year, as the Reclamation Service expanded its works to serve more and more land, there remained a substantial percentage of land under its ditches not taking water. By 1924 the Service was ready to serve 1,693,000 acres; but only 69 per cent of those were taking any water. 31 per cent of the land under Federal canals remained unirrigated.⁶³ As late as 1953, 16 per cent remained unirrigated.⁶⁴

Lest anyone think these lands remained idle simply because a bungling Bureau of Reclamation had built irrigation works to serve worthless land, note that "raw," unimproved land under the Bureau's ditches was being held for high prices--\$200 to \$400 per acre--when water became, or was expected to become available.⁶⁵

3. Lands outside organized projects

Another aspect of the problem is that many easily irrigable lands remain outside any irrigation project altogether, even while the outermost frontier of irrigation development has pushed on to less favorable sites, sites on which projects often prove financially unfeasible. Not

all these undeveloped irrigable blocs are, to be sure, entirely unused. Some are dry-farmed, others even irrigated by natural flooding or other primitive method. But some are unused, and almost all are underused relative to their full capacity. The National Resources Board reported in 1934 that, of about 11 million acres of undeveloped irrigable land which they investigated, 4 million could be irrigated for \$50 an acre or less; 3 million more for \$50-\$100; and another 3 million for \$100-\$200.⁶⁶ For comparison, the Merced Irrigation District in 1929 had outstanding \$16,250,000 in bonds, by dint of which expense the district irrigated 112,000 acres, and was able to serve 162,000 acres--giving a cost of \$145 per irrigated acre and \$100 per acre made irrigable.⁶⁷

C. Urban Frontiers

1. In search of the urban frontier

One finds idle land, then, along the broad fringes of agriculture, in the turbulent zones where man is first capturing and taming the wild horse of raw land, bridling it with public works, saddling it with bonds, and spurring it with ad valorem taxes. Once thus removed from frontier fever-zones of heady illusions the tamed land may settle down to serve steadfastly for generations. But the wild horse in it never dies, nor forgets its former ways. At the tantalizing distant approach of building, the seductive

murmur of traffic, or the incendiary whisper of public works, the long-faithful servant may rear up, rampaging, buck off farm and farmer and break wild, a savage once more. Even in pioneer days, "surrounding every urban center were large areas of unoccupied land, lying unproductive and held at speculative values. . . . this land would not be needed for town extension for years . . ."68 The same was true in 1933:

About the fringes of most large cities today lies a great belt of such idle land, grown up in weeds. . . . This land is usually so situated as to enable it to render valuable services. . . . Instead of receiving the benefit of such services the community must see this resource lie idle.⁶⁹

As any city-dweller can observe in a short drive, it is truer than ever in 1955.

But the word "fringe" is misleading if it implies that there is a solid central core. So diffuse is many an American city that the "fringe of growth" may have no inner margin short of the center. Homer Hoyt has neatly cinematized a city growing, quite literally, by leaps and bounds, to produce the typical disintegrated structure:

Chicago has not grown in a compact body, because new transportation lines made it possible to pass over old areas that were partly built up in favor of virgin tracts that were not marred by obsolete buildings, and because the cupidity of owners frequently caused them to raise prices of land adjoining new improvements to prohibitive figures. Rather than pay such advanced prices for land, builders tended to jump several blocks ahead into another area.⁷⁰

Chicago grows, that is, by "leapfrogging." The process resembles that of frontier days, when "speculators helped speed the western advance by withholding from cultivation great tracts east of the frontier line,"⁷¹ and of the irrigation frontier where the non-development of more easily irrigable lands drives settlers on to costlier and less desirable project areas.

And while the city's outer frontier extends back inwards toward the city center, there are also several central frontiers, frontiers of intensive high-rent downtown uses, probing outwards. Even as the chatter of mob gunfire along city streets recalls another lawless era so, in the history of land, the wild west lives again at the frontiers of commercial growth. In the van of commerce's golden tides our wild horse oft runs amok once again, unseating houses and tenants with abandon. In Chicago, from 1930 to 1940, more buildings were demolished than built--even in the downtown Loop more than 15 per cent of the land was vacant in 1941.⁷² On Manhattan's teeming lower east side, after 1923 vacant lots began to appear in appreciable numbers, and from 1933-42 over 60 per cent of all demolitions went unreplaced.⁷³ In central Los Angeles, 20 per cent of the lots were unimproved in 1932.⁷⁴ A good deal of "improved" land in central cities carries only shacks, and is little more than vacant. Four-fifths of the apartment buildings on Manhattan are over 50 years old.⁷⁵ In Flint, Michigan,

about 5,000 buildings became obsolete from 1930-37, while only 1,000 new ones were built.⁷⁶

The resulting urban structure is variously described as checker-boarded, spongy, honey-combed, vermiculated or worm-eaten--it is, at any rate, like other frontiers not solid or compact. To be sure the nearer the city center, in general, the higher is the percentage of land improved. But many peripheral blocks have filled in fuller than many central ones, and one would be hard put sharply to distinguish any "outer fringe" from a "central core." Thus the National Housing Authority reported in 1945:

The statement that there is plenty of land on the fringes of cities surprises no one. The startling fact to most is that actually there is no dearth of land in most central cities, and within the central parts of cities to provide homes for all city-dwellers without over-crowding.⁷⁷

2. Unused land in central cities

Table 3 shows the percentage of land vacant in a number of cities for which data are easily accessible. Obviously the NHA assertion has some weight behind it.

One must be circumspect of these raw data, collected under various auspices for various purposes. Different surveyors define "vacant" land differently, some counting parking lots and billboards as "improvements," others not; some counting each lot, others going by the dominant character of whole blocks; some considering unsubdivided acreage, others ignoring it; and so on. Thus we have

encountered somewhat different figures for a few cities-- Minneapolis, Berkeley, Yokers--and had to reject one. Clearly for comparing cities the figures are of limited value, and they are not presented for that purpose. They only purport to show that some high proportion of the American city lies unused.

Here are some cautions in using the figures. First, regarding some cities the figures doubtless overstate the case, since some cities have expanded their political boundaries outside the economic city. But more often the political city is the center of a metropolitan cluster, only the most solidly improved section of the complete economic city.

Second, in one way the figures as given consistently understate the case. For they show vacant land, not as a percentage of all privately allocated land, but as a percentage of all land in the city, including streets, which take up about 20-25 per cent of the city, and parks and other public land which take up 5-10 per cent or more. Subtracting those public lands from the base, vacant land becomes a much higher percentage. In a few cases we have been able to supply the latter figures, which of course are much higher, and more pertinent. Thus in Chicago in 1941, 21.4 per cent of the city area was vacant, but as streets and alleys, railroads, and other uses took up a great deal

TABLE III

PERCENTAGE OF LAND VACANT IN SEVERAL AMERICAN CITIES

City	Year		Percent Vacant of	
	Data Gathered (if known)	Source Published	All Land	Private Land
Rochester, N.Y. ⁷⁸	--	1946	14	19
Little Rock ⁷⁹	--	1946	38.6	
Minneapolis	--	1946	19.1	
Portland, Oreg.	--	1946	39.3	
St. Louis	--	1946	15.7	
Madison ⁸⁰	--	1952	11.7	
Glendale	--	1952	35.5	
Green Bay	--	1952	47.2	
Greensboro	--	1952	--	38.8
Harrisburg	--	1952	13.6	
Kalamazoo	--	1952	19.1	
Oklahoma City	--	1952	--	36.1
Omaha	--	1952	18.7	
Washington, D.C.	--	1952	11.0	
York, Pa.	--	1952	23.0	
City of New York ⁸¹	1920	1927	44	
Greater New York ⁸²	1934	1939	19.9 (predominant usage by blocks)	
Los Angeles ⁸³	--	1941		40 (lot area. Acreage not counted)
Berkeley ⁸⁴	--	1951	7.7	12.2

TABLE III (Continued)

City	Year		Percent Vacant	
	Data Gathered (if known)	Source Published	of All Land	of Private Land
Bartholomew's 16 Self-Contained Cities ⁸⁵	---	1932	40	56
Knoxville	---	1932	47	59
Vancouver	---	1932	29	52
San Angelo	--	1932	29	52
Fort Worth ⁸⁶	--	1932	45	64
Cape Girardeau	--	1932	62	76
Sacramento	--	1932	42	59
San Jose	--	1932	39	52
Springfield, Mo.	--	1932	36	47
Cedar Rapids	--	1932	67	80
Tulsa	--	1932	39	53
Louisville	--	1932	22	34
Peoria	--	1932	25	36
Jefferson City	--	1932	57	72
San Antonio	--	1932	31	46
Troy, Ohio	--	1932	30	45
Binghamton	--	1932	36	50
Bartholomew's 6 Satellite Cities ⁸⁷	--	1932	42	
Clayton, Mo.	--	1932	39	
University City, Mo.	--	1932	64	
Maplewood, Mo.	--	1932	24	

TABLE III (Continued)

City	Year		Percent Vacant	
	Data Gathered (if known)	Source Published	of All Land	of Private Land
River Forest, Ill.	--	1932	32	
Ferguson, Mo.	--	1932	51	
Shrewsbury, Mo.	--	1932	43	
Ascher's 22 Cities Over 50,000 ⁸⁸	--	1945	44.7	
Providence ⁸⁹	--	1945	14.4	
Duluth	--	1945	59.3	
Other 20 cities not specified				
San Francisco ⁹⁰	1948	1948	14.5	
Chicago ⁹¹	1923	1933		30 of lots
Chicago	1929	1933		30 of lots
Chicago ⁹²	1941	1941	21 (by blocks 90% or more vacant)	28 (by blocks 90% or more vacant)
Buffalo ⁹³	--	1938	--	14 of lots
Flint ⁹⁴	1938	1940	--	44 of lots
Cleveland ⁹⁵	--	1939	--	47 of lots
Burbank	--	1939	--	75 platted area
Portland, Me.	--	1939	--	50 platted area
El Paso	--	1939	--	30 platted area
Grand Rapids	1931	1939	--	44 of lots
Dearborn ⁹⁶	1933	1939	---	75 of lots
Richmond, Va. ⁹⁷	1942-3	1943	about 33	about 58

of land, only 24.1 per cent was in residences, and the Plan Commission pointed out "almost as much land is still available in Chicago as is now used for homes."⁹⁸ On the other hand, these figures overstate the dereliction of the private land market, as some of the vacant land is held by the city, which takes no positive steps to clear title and return the land to private use.

Third, note that some of the figures are for percentages of lots vacant. Such figures are of course imperfect because not all lots are the same area; but, more important, they take no account of unsubdivided acreage. In some cities that is a large oversight. In Flint, Michigan, for example, not only were 44 per cent of the platted lots vacant in 1938, but in addition 26 per cent of the city's area was not yet platted or developed--no streets or utilities. That was true in spite of the fact that most new building at that time was going on beyond the city limits.⁹⁹

Fourth, note that the figures do not include lawns, yards, private parks and other lands appurtenant to some structure. If we calculated the percentage of land in cities actually physically covered by some structure it would be very small indeed. Some of these appurtenant grounds may be very little used, and represent a very lavish use of valuable land, but for the present study we count them all as "improved."

Fifth, some of the vacant land may be very steep, or poorly drained, or otherwise of low value. Vacant lots do average lower in value than improved lots, largely because of their less central location. The question of relative values we take up in a few pages.

3. Unused lands in Rurbania

So much for the relatively compact central city. Let us move outwards to Rurbania, the broad transition between city and country. Let the editor of "The American City" paint the landscape:

(East of Paterson, N. J.) the casual stroller who leaves the main highway to roam the untilled areas just to the north, will find among the underbrush the crumbling remains of concrete sidewalks thinly laid over once fertile farmland regardless of need or topography.

(Around Detroit) as far as the eye could see, the white painted posts bearing street names stretched out in all directions, a band sometimes a mile or more in width along the traffic artery.¹⁰⁰

Around Chicago in 1930 was enough platted land to house millions of people--18 millions, according to one generous estimate (probably based on an unrealistically high standard of density). Long Island, N.Y., alone had enough lots to "make suburbanites of the inhabitants of the five boroughs of New York." And Florida! "It has been estimated that the total land subdivided during the Florida boom was sufficient to house the population of the whole United States."¹⁰¹

Not all this land, to be sure, is vacant. But from the numbers of lots obviously much of it must be--there simply are not that many people. In Cook County outside Chicago, 69 per cent of the lots were vacant in 1931.¹⁰² 79 per cent of the lots in suburbs of Buffalo were vacant in the 'thirties,¹⁰³ 60 per cent in Yonkers, 63 per cent in five suburban towns in Monroe County, New York (Rochester),¹⁰⁴ 75 per cent in Dearborn, Michigan,¹⁰⁵ about 55 per cent in Bergen City, New Jersey,¹⁰⁶ 53 per cent in Los Angeles County, and 95-1/2 per cent in Redford Township (near Detroit).¹⁰⁷

Besides the vacant lots there are hundreds of thousands of acres never subdivided, despite their being better located than other lands which are so developed. For just as the builder "leapfrogs" over several overpriced lots or blocks to find land on which he can build without losing money, so the subdivider, who serves the useful function of planning and dedicating land for and sometimes financing and building streets and other basic utilities, must often leap over considerable overpriced acreage before settling on some he can develop without loss. Not until 1953, for example, was the thousand acre tract of the Mills estate between Millbrae and Burlingame, California, sold to subdividers--for over \$3500 per acre--although there are several well established bedroom suburbs beyond it.¹⁰⁸ In the shadow of Manhattan the Erie Railroad is only now

beginning to develop 1,000 acres at Secaucus, N. J., with these advertised advantages: "7 minutes to mid-Manhattan; express highway service to all points; Erie railroad sidings to sites; . . . America's largest pool of labor, clerical and engineering talent . . ." Between this site and Manhattan there lies at least an equal area still vacant.¹⁰⁹ In California, "For years the historic Moraes Ranch in Marin County, overlooking Mill Valley and the Bay . . . held out against development. . . with less desirable lands, many times the distance from San Francisco, long since filled with thousands of homes. . ."¹¹⁰ Inside the outermost urban subdivisions there remains much raw acreage, a large part of it not used even for farming. In Cook County, Illinois, some 248,000 acres, or 41 per cent of the county, were unplatted in 1929. Some of this unplatted land was inside Chicago itself. 114,000 acres, or 46 per cent of the unplatted land, were assessed as "unimproved."¹¹¹

4. The economic importance of vacant urban and suburban land

Of what account, one may ask, are a few or even many vacant lots in and around cities, when the cities themselves occupy so little land surface?

a. Market values

The land of central cities, despite its small area, is probably our most valuable natural resource. That

at least is the judgment of the market. The National Municipal Review publishes each year the assessed values of American cities over 30,000 population, together with reported ratios of assessed to market values. A glance at the figures is impressive. In 1954 the assessor valued the taxable land and improvements in New York City at \$20 billion--a figure which should doubtless be raised to correct for underassessment, which is high-universal, and for omissions of tax-exempt property. But even as is, it is almost as great as all the farm land and improvements in the sixteen southeast and south central states (\$23 billion, by the 1950 census). Los Angeles, with market value estimated at \$5 billions, about balances the value of all the farms in California. Correcting the Review's figures for underassessment according to the figures therein provided (which, from the writer's experience, seem to understate a good deal the actual degree of underassessment), and for omissions of tax-exempt property (estimated at 19 per cent), the market value of the top twenty American cities approaches \$100 billions. The value of all cities over 30,000 approximates \$250 billions. For comparison, all American farm land and buildings were worth, by the 1950 census, near the peak, \$75 billions.

As to Rurbania, its area alone is impressive. With no clear boundaries it is a nebulous region. But, give or take a few counties, it was authoritatively estimated in

the 'thirties at about the area of Pennsylvania, 28 million acres.¹¹² Since then, with commuters ranging over 50 miles, with pieces of Chicago scattering up to the Wisconsin line, with Sacramento sprinkling over the Sierra foothills, and several Mohawk Valley towns nearly coalescing, Rurbania has expanded voraciously. Recalling that the area of a circle increases with the square of its radius, it must have eaten up a great deal of territory since 1940.

It is valuable territory, too, strategically located as it is around urban centers with their markets, transportation, pools of labor and warehouses of raw materials. H. D. Simpson has observed that a few acres on the fringes of Chicago may have the productive potential of whole counties at the fringes of cultivation in northern Michigan. The average unplatted farm acre in Cook County, i.e., around Chicago, as reported in 1929 by the State Tax Commission, was worth more than 8 times the average farm acre in Illinois itself, a state of highest grade farm land--the Illinois average, incidentally, including Cook County and land in some adjacent counties that is part of Chicago's Rurbania. We have mentioned the tract of the Mills Estate by Burlingame, California, that recently brought over \$3,500 an acre. Another recent sale, from the old Gallegos grant south of Irvington, California, brought, as reported in the press, about \$3,120 an acre. The Wall Street Journal of January 25, 1955, cites prices of \$1,500 per acre seven

miles from downtown Indianapolis; \$3,500 around Minneapolis; \$4,500 around Los Angeles; and up to \$14,000 in Nassau City on Long Island.¹¹³

Simply to get the general dimensions of rural value, and without the slightest pretense to accuracy, let us suppose Rurbania now to comprise 50 million acres, about the area of Utah, and the bare land to average \$1,000 an acre. That gives \$50 billions--again, probably more than the value of bare farm land which, lumped together with all improvements, was about \$75 billions in 1950. And if we consider that much rural land is subdivided with utilities, that some is commercial, \$1,000 an acre seems rather a conservative figure. If we include the gold coast suburbs of our cities--and we have not counted them anywhere else--we might raise that average considerably.

While perhaps half the non-public area of central cities, and over half of Rurbania are unimproved, it would be premature to conclude that over half the urban productive potential is thus lost. For vacant land, although it penetrates clear into the hearts of our cities, comprises generally a lesser proportion there than at the outskirts, where values are lower. Accordingly, assessed values of vacant land, per unit area, average less than those of improved land.

Some writers, on such evidence, have gone so far as to pronounce the productive potential of vacant land

negligible. Coupled as they often are with the warning that vacant, if put on the market, would compete with and drastically devalue other urban land, such pronouncements have not been very convincing. And they do seem to go a good deal beyond what the evidence allows. Were vacant land all beyond the city's last outposts it would still compose our best farmland, and as we have seen a sizeable piece of it. But scattered as it is throughout town, it consists also of land with high urban potentialities.

Unfortunately there are no easily available reliable data on relative values of vacant and improved land. There are only assessments, whose evidence is grossly biased. The notorious fact needs no proof here that assessors usually under-value vacant land relative to improved.¹¹⁴ For example, the current practice of many assessors is to keep vacant land and old buildings at prewar values and assess new buildings at their inflated postwar construction costs.

But sometimes there is a true assessment. We have it on the authority of H. D. Simpson, then of Northwestern University, that in 1927 Chicago's quadrennial assessment was tolerably accurate, thanks to a vigorous clean-up campaign.¹¹⁵ The assessor then valued vacant lots in Cook County at an average of \$601.29, and improved lots at \$1,923.77, or a little over three times the vacant.¹¹⁶

More research on this point might turn up more true assessments to permit of more general and more accurate estimates. Obviously, Chicago in 1929 is not, say, Houston in 1955. But the present point is only that vacant land is valuable enough to represent some appreciable part of the city's productive potential, and is not to be whisked lightly aside as "negligible." Suppose half the lots in a city and its Rurbania are vacant, and the vacant lots average one-third the value of the improved. That would make one dollar's worth of vacant for every three dollar's worth of improved: 25 per cent of the city land, measuring by value, would be vacant. That is still a large part of the American heritage.

b. Aggregate vs. piecemeal valuation

But a simple comparison of aggregate values like that is only the roughest preliminary approach to an estimate of the productive potential of vacant land. For in our highly interdependent economy the use of land affects the productive potential of other land in countless ways, both direct and devious, both complementary and competitive. Let all vacant land be put to use and the whole structure of urban values is drastically changed, reconstructed from the ground up. Market values, by contrast, come from individuals' appraisals of individual lots in their actual setting. Simply to aggregate those appraisals gives little notion of the true productive potential of vacant land, were

it all put to work--in this case the whole is clearly not equal to the sum of its parts.

But is the whole greater or less than the sum of its parts? There are influences working both ways.

On the one hand, the ultimate potential of some vacant land is greater, relative to improved land, than its present value suggests. Consider a section near the heart of town, well endowed by nature and the geometry of local transportation. Often such a section, by virtue of its great expectations, is held by its original owner, or perhaps an avowed speculator, at a price too high to let anyone buy and subdivide it; or, once subdivided, the lots may be held too high to permit of much building, a remarkably self-defeating, but for all that a frequent kind of behavior. Contrast this central land with a humbler peripheral district, less favored by nature, where for that reason the lots pass quickly at low prices to ultimate consumers: resident owners. Let enough families settle here, and soon a struggling church and community center may arise. The county improves the incoming highway, and gives it a stop light, and a transit company adds it to the schedule. The local demand increases enough to support a grocery, garage, barber, and druggist: a small commercial nucleus takes birth. A small industry, seeking low cost elbow room and well-housed labor, comes to town. The residents incorporate, dedicate a park, tidy up their lawns, float their first school bonds--and before

many years that once humble district may be worth, on the market, considerably more than the undeveloped central section of greater natural potentialities.¹¹⁷ For, although an improvement little influences, as a rule, the value of the very site on which it stands, to improve a whole district will much increase land values there, as the improvement on each lot radiates benefits onto neighboring lots, doing its bit to create a neighborhood, a local market, and a community. Granted that some "improvements" radiate detriments as well as benefits onto their neighbors, clearly the net influence is generally more complementary than hurtful.

At this juncture the inquiring economist comes on the scene to compare the market values of vacant and improved land. Taking these two sections, he duly reports higher market values for the improved, peripheral lots than for the vacant central land. But clearly, in this case, the relative market values are no measure of relative ultimate productive potentials. The vacant section still has greater natural capacity: could it be subdivided, and some first "settlers" buy in to start the kind of snowballing community development that gave the peripheral section its value, the central land would eventually achieve much higher values. In fact, if many such central areas developed to their full capacity they would drain demand away from the outer areas, many of which would lose their urban value and eventually revert to farming. So if the inquiring economist inquires

deeper, he must put a high value on the vacant central land, relative to the peripheral developments, than does the market.

That is a situation where the aggregate productive value of vacant land is greater, relative to improved land, than their market values indicate. But on the other hand, there is the opposite situation. To put the best land now vacant into full use would prick the whole bubble of present rural land prices. It would draw in from the outer vastnesses of Rurbania the population and demand that now, thinly scattered over whole counties, titillate the hopes of speculators for all the empty spaces between. It would utterly deflate those anticipations, and with them the prices of rural land which, considered in the aggregate, are largely fictitious. For the demand for each lot or acre depends on others' remaining unused; and so the urban potential of some outlying vacant land, when we consider the aggregate, is exactly nothing.

Of those two situations, the second probably weighs heavier in the balance. That is because a smaller percentage of land is generally vacant in more central zones. And it seems likely that, were all urban and rural vacant lands put to full use, the value then attaching to the lands now vacant would comprise a smaller percent of the total than now. For values would fall most drastically in the outer zones, where the percent of vacant is higher. Central

values, on the other hand, might even increase, as a more compact urban population focussed its activities on fewer centers.

As far as we have come, then, the aggregate valuation seems to deflate vacant land relative to improved. However there is more to tell.

c. Offsite benefits from using vacant land

Does it follow that the productive potential of vacant land is, in the aggregate, a smaller portion of the urban total than present market values indicate? It depends on what one means by "aggregate productive potential." If this means the ability to yield income to the holders of land now vacant, then probably so. But if the "aggregate" includes increased output and reduced costs on land now already used, then certainly not. For every vacant lot put to use not only earns an income, but complements other lots in the city, and the lands of the hinterland whose products move to and through the city, and labor and capital within and without the city. Thus its use increases the economy's output a good deal more than it increases the landholder's income. A full aggregate evaluation of vacant land must certainly take account of these offsite benefits, or "external economies."

In preface, note a point that will be obvious to most, but perhaps a source of confusion if not made explicit. Vacant land, if put to use, would drain demand away from

competing urban lands and reduce their income yielding capacity. This we have already accounted for by valuing urban lands, both vacant and improved, at the resulting reduced values; and we have conceded that lands now vacant would probably fall more than lands now improved. But we have not reckoned the value decline itself as a net social loss; nor should it be so reckoned. As to lands already used, the lower income represents merely a redistribution from the landholders to others: their customers and suppliers, employees, and tenants. The land is as useful as ever; it is simply less scarce, hence commands lower rentals. This is merely a shift between groups, comparable to the shift that would occur if, for example, government stocks of butter were released to break the price. Consumers would gain in lower prices whatever sellers lost. As to land now vacant, the loss of value is merely the puncturing of what always was, from the aggregate standpoint, an illusion. (For more detailed treatment of the point, see section IV, A and B, below.)

By contrast, the offsite benefits about to be described are social gains. These offsite benefits tend to increase the net income of other lands, not by creating an artificial scarcity, but rather by better fitting the other lands to render productive services at lower costs. Let us analyze these.

The offsite benefits that would follow from putting vacant land to use derive essentially from letting the city's people achieve the many advantages of closer community. Converting the present sprawling settlements into a more compact and integrated economic organism would in many ways better fit the land to satisfy the desires of its residents and the needs of its businesses.

Most obviously, closer settlement would lower all manner of transportation costs within the city, both for the public that finances streets, walks, and lights, and the users who now waste their time, fuel and other valuable resources getting past vacant lots. Public transit would be cheaper than now, and service more frequent. Many municipal services such as police, fire protection, garbage and sewage disposal could be cheaper and/or better. And all distribution and collection services would be more economical. Rates for water, gas, power, telephone, deliveries and pickups, and so on could all be less. Considering that distribution is the major cost in these services, the savings could be very great.¹¹⁸

Most of those are generally recognized as decreasing cost services, whose unit cost decreases as the use increases. What is often forgotten is that the decreasing costs result, not from large use alone, but from large use within a given area. Expand output by expanding area, and the "fixed" costs must expand proportionately. But consolidate

population within a smaller area and unit costs will fall.

Of course it would also reduce unit costs if a given population in a given area increased its use per capita. Because of this, there is an additional benefit to reckon. If the decreasing cost service is unsubsidized, like many private utilities, and charges rates equal to unit cost, then the lower unit costs resulting from closer settlement will permit of lower rates, which in turn will permit larger use per capita, which in turn will further lower unit costs. Lower rates for basic utilities like water and power would stimulate many investments now hovering just beyond the margin of profitability, and bring new capital and population to the city. The ultimate benefits could be very great.

It is also likely that consolidating settlement would let many citizens receive decreasing cost services they cannot now in their present scattered locations receive at any plausible price.

Those benefits and others of their kind would come to a handsome total, expressed in the increased income of city lands and the people using them. As they would result from putting vacant land to use, they must certainly be counted as part of the unrealized productive potential of vacant land.

Let us interject at this point, to avoid misunderstanding, that none of this is to say that dwellings should

be planned without open spaces. We are referring to vacant fields and lots, unplanned open spaces, unintegrated with the structures scattered among them, and serving only to obstruct the integration of those structures.

But in addition to benefits from decreasing cost services would be others, less startlingly obvious, perhaps, and involving many imponderables, but nonetheless irrefutably real. These are the benefits that Adam Smith summed up in: "The division of labor is limited by the extent of the market."

"The market," of course, is no abstraction, but an area of land linked by feasible transportation and communication. The cheaper these two, the better the market, until at best "the market" is a very small central meeting place to which large numbers have access, which many habituate, and which by the same token affords each of them access to large numbers of others. A primary function of the city is to provide such centers where buyers, sellers with their wares, lawyers, financiers, and the whole complex of allied specialists who form the collective brain center of a free economy may associate freely, with minimum spatial barriers, to carry out their vastly complex and utterly interdependent functions of control, adjustment, and continual readjustment.

To improve land now vacant would, obviously, make of each city a better market. Let the present scattered population draw together and each economic unit would enjoy much

easier access to others over many avenues of contact, most particularly through the downtown center. The demand now scattered piecemeal over numerous small commercial ganglia would come to focus more on the larger central market, with its greater variety and newer stocks. The central market would thus become a wider market, allowing of finer division of labor, or specialization. This is not in any way to deny the influence of the automobile as a substitute for the central market--although we would incline to interpret the automobile revolution as the result, as much as the cause, of scattered settlement. It is only to say that, automobile or not, there are great advantages in close settlement. Let us consider some aspects of that.

For any market, however large or small, there exist in the minds of enterprising men many projects which now lie beyond the margin of economic feasibility because the market is too small. Perhaps they require great volume or, more likely, they cater to special needs or tastes and can find enough patronage to support them only where large numbers congregate. Or, again, perhaps they require large numbers of sellers, like a scrap steel foundry; or they require access to a wide variety of raw materials and specialized services such as only a large market can supply. Widen the market and some of these dreams materialize. Some out-of-town seller opens a retail outlet and service center; retail shops carry a wider selection, and faster turnover cuts

storage costs, spoilage and obsolescence, permitting lower prices and higher quality; wholesaling for the city market becomes simpler, with retail outlets concentrated in one area, letting wholesalers introduce new products, and the new opportunities attract new wholesalers whose competition lowers the mark-ups. New medical, legal and other professional specialists open offices, replacing the more general practitioners, while garages come to specialize in radiators, wheel alignment or foreign cars, affording the consumer better service in each case. Transportation lines schedule more frequent runs. Industrial sites become more desirable, offering better access to labor of varied skills, transportation terminals, warehouses, central offices and the whole downtown complex, and so a new industry comes to town. Benefits like those would follow simply from closer congregation. One must reckon them as part of the unrealized productive potential of vacant land.

Another benefit would be keener competition among sellers and buyers. A larger market can support not only new goods and services, but more buyers and sellers of the old. However large the market, it will always contain a fringe of local monopolies and oligopolies, enterprises of which the market can support only one or a few. In a larger market all will feel the spur of keener competition, with obvious benefits.

On a national level there are further benefits to count. Thus far we have dwelt on the increased specialization possible among those sellers whose market is one city, and the benefits to those who buy in the city. But if many cities filled in their vacant land to make better markets, the national market easily available to any manufacturer or grower or other producer would increase. Specialty producers who now can market their wares only in a few of the largest or nearest cities could tap a much broader market as it became feasible to establish new sales outlets, and the old outlets reached more potential customers. Increased specialization and keener competition would ensue.

And clearly there is more to tell. Within some limits, growth begets more growth. A market center attracts people who want many contacts; having come, they themselves are contacts for others. A wider market attracts sellers, the greater concentration of sellers attracts more buyers, and all attract restaurateurs, shippers, entertainers, educators, and others who widen both the market for sellers and the range of choice for buyers.

The members of a city are something like the embers of a fire. Bring these together and the glow from each smoldering ember cheers along its neighbors, who throw it back augmented until the reciprocal radiations cumulate into a lively blaze. The compact city is a great cooperative enterprise whose members, however self-seeking, radiate

benefits onto their neighbors and themselves depend entirely on benefits radiating from others.

A wider market might justify more frequent freight service. That, in conjunction with the wider market, attracts a new wholesale outlet, which in turn makes easily accessible a raw material or device with which a local manufacturer expands or improves an operation or develops a new product. Such chain reactions may proceed a long way. In general, a wider market increases the alternative raw materials, services, labor talent and equipment available to all producers. The enterprising will seize upon some of the new alternatives to improve their operations, with cumulative benefits too complex to foretell, yet confidently to be expected. As the number of new "things" available increases from n to $(n + 1)$, the number of their possible combinations increases by 2^n --i.e. it doubles--and the number of possible arrangements in productive enterprises (which are not limited by any one-dimensional ordering) increases at even higher rates. As the market widens, more and more entrepreneurs, whose function is to combine productive factors effectively, have greater and greater scope to exercise their ingenuity. The result must be to accelerate technological advance, both by inspiring new ideas and facilitating their broad application. Henri Poincare, the renowned French mathematician, has described the creative process in these words:

Figure the future elements of our combinations as something like the hooked atoms of Epicurus. During the complete repose of the mind, these atoms are motionless, they are, so to speak, hooked to the wall; so this complete rest may be indefinitely prolonged without the atoms meeting, and consequently without any combination between them.

On the other hand, during a period of apparent rest and unconscious work, certain of them are detached from the wall and put in motion. They flash in every direction through the space (I was about to say the room) where they are enclosed, as would, for example, the molecules of gas in the kinematic theory of gases. Then their mutual impacts may produce new combinations. . . .

The rules of . . . calculations are strict and complicated. They require discipline, attention, will, and therefore consciousness. In the subliminal self, on the contrary, reigns what I should call liberty, if we might give this name to the simple absence of discipline and to the disorder born of chance. Only, this disorder itself permits unexpected combinations.

In shops and offices where work proceeds under discipline we have the social analogy to Poincare's conscious thought. In public thoroughfares and meeting places, the undisciplined unconscious. "Only, this disorder itself permits unexpected combinations." Of these are born material and intellectual progress.¹¹⁹

We might add, tentatively, the inchoate thought that the full value of central location cannot be told in terms merely of the known. A central location offers access also to the unknown, or unforeseen. As a central market gathers more specialties it becomes more and more a specialized thing in itself, a collection of specialties, a place where one can "get anything," learn what is available, satisfy

unforeseen emergency needs, and, in a dynamic competitive world, gain earliest access to the latest products and ideas, whatever they may prove to be. In this respect, too, the growth of a central market makes location near it still more desirable and begets further growth.

Philadelphia, for example, advertises its attractions in these terms:

Raw materials are handier in Greater Philadelphia. . . Land of Everything! Basic raw materials for industry converge on Greater Philadelphia over its unequalled rail, truck, ship, pipeline, and air transportation facilities. Whether you are interested in manufacturing, processing, fabricating, or refining, you will find here the skills, the market, the site, and the distribution means for an efficient, economical and profitable operation.¹²⁰

In short, the labor and capital of a city, considered in the aggregate, are in the stage of increasing returns, due to the many complementary relationships facilitated as spatial barriers become less. No doubt there is some intensity at which diminishing aggregate returns would commence, due to crowding of streets, and perhaps lack of Lebensraum. But many adjustments facilitated by closer settlement would help solve these problems, and delay the coming of aggregate diminishing returns. Crowding of streets is due largely to private cars. Closer settlement would reduce their use, by permitting cheaper, more frequent and more luxurious public transportation and delivery service; by increasing the number of business and social contacts accessible to pedestrians from their homes and

from transit stops; by reducing the distances necessary to travel, hence the time that cars are on the road. In addition closer settlement would, by reducing street mileage, release funds to improve the remaining ones, widening bottle-necks, over- or underpassing intersections, improving traffic control, and so on. As to trucks, they would lose business as population drew closer around rail and shipping terminals.

Nor would it deprive many people of Lebensraum merely to improve vacant lots, most of which now provide very little usable room for anyone: even as ball-fields they hardly compete with school-grounds and parks. But most residents of the more compact city would have quicker access to open country than they do now, when an urbanite must buck miles of urban traffic to reach free wheeling.

Considering these things, it seems the American city might profitably draw in its skirts a long, long way, releasing land for agriculture in the city's hinterland, and simultaneously increasing per capita output in the city.

Summing up, to improve vacant lots would increase the net output of other lots in two general ways: distribution services would be cheaper; and the wider market would permit of more specialization and keener competition. These benefits, reinforcing one another, interacting, combining and cumulating in countless ways, would benefit the economy by a good deal more than improving vacant lots

would increase the incomes of those who now hold land vacant. It would make other land more valuable to society, not by restricting the supply on the market, but by making it more productive--actual market values might fall, due to the increased supply. Considered in this light, the aggregate productive potential of vacant urban and suburban land looms much larger even than its present value suggests. Just how large, surely no fallible human can say, but certainly large enough to warrant great weight in our calculations.

V. The social costs of unused land

Let us now sum up, in more general and systematic form, the social costs of unused land. In the main these are: A. the unrealized income of the unused land itself; B. the costs of subdividing and providing basic public works for land otherwise submarginal; C. the reduced marginal productivity of labor and capital, including reduced investment and employment; D. costs of scattered settlement; and E. costs of increased economic instability.

A. and B. The unrealized income of the unused land itself; and the costs of subdividing and providing basic public works for land otherwise submarginal.

R. U. Ratcliffe writes:

. . .The services of urban real estate . . . perish with the passage of time, whether or not they are utilized, and are not recoverable. Thus the landlord cannot build up an inventory for future sale, or hold for a higher price; he must sell his entire stock from day to day or the opportunity is forever lost.¹²¹

We certainly agree--with the usual reservation that disuse today may sometimes permit of some later use enough better, and not too much later than the feasible present use to compensate for the lost years' incomes. (For a criticism of the argument that fear of obsolescence is an adequate rationalization of unused land, see Chapter 4). In general, the unrealized produce of idle land passes away with time, beyond recapture. And this holds for farm as well as urban land. This fact is often overlooked because it is possible to farm land destructively, a practice compared to which disuse may seem like beneficial conservation. But it is also possible to maintain farm land while taking from it an income net of all costs. It is this net (speaking roughly, to avoid detail) that is lost each year by disuse.

But how evaluate the unrealized annual services of idle land? Were all used, the price of those services would be less, due to the increased supply, than today. On the other hand, to evaluate all the services at those lower prices would give too small a sum, since all but the last unit would be of greater utility to consumers than the final price struck by supply and demand. Here is a matter involving the concept of consumer surplus, a matter best analyzed by a traditional supply-demand graph.

Such a graph will serve also to indicate the second social cost of unused land: the cost of subdividing and

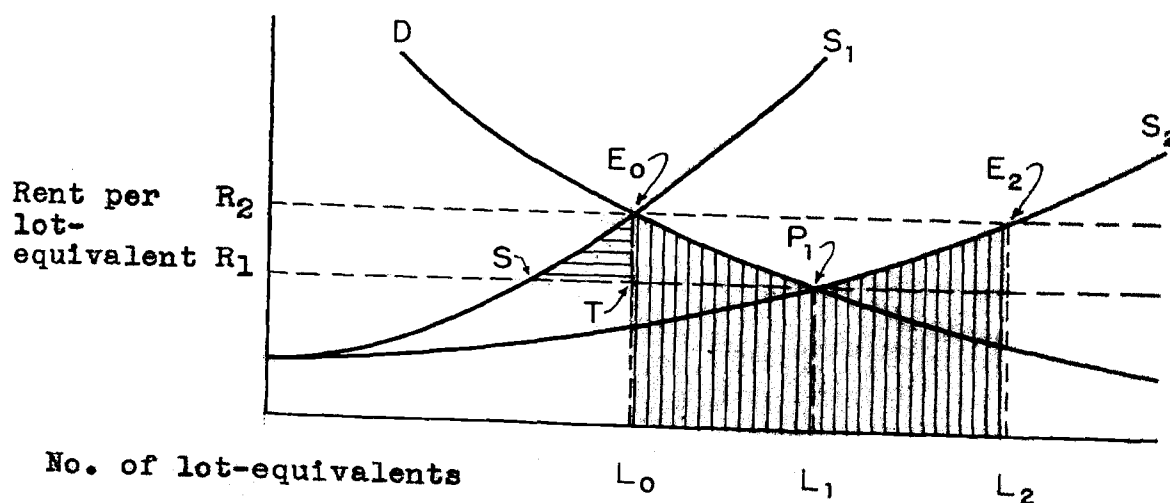
providing basic public works for land otherwise submarginal. If the reader will bear with a few simplifying assumptions we can estimate the amount of these two costs together in the small compass of one graph. We will take as an example the urban frontier--the analysis applying, with appropriate adaptations, to any frontier.

In Fig. 1, the abscissa is the number of urban lots accessible to a given urban market. These lots are measured in "lot-equivalents," based on a lot of some arbitrary standard quality. On the ordinate is the annual economic rent per lot-equivalent.

"D" is the demand schedule for the annual services of the land. There are two supply schedules, S_1 and S_2 . The meaning of these curves must be understood

FIGURE 1

URBAN LAND: DEMAND AND TWO KINDS OF SUPPLY



in the context of the market they represent, a slow-moving market of massive and long-term investments. Let these curves represent the response of supply to price over a period of some years, say arbitrarily five. Let it be understood that the curves are not reversible in so short a time.

S_1 is a supply schedule showing how much land will, at various levels of rent, be supplied, improved, to meet the demand for the services of urban land. S_2 is a supply schedule showing how much land will, at various levels of rent, be subdivided and provided with basic urban public works such as streets, water and sewers. The difference between the two is land subdivided, and provided with basic public works, but not improved. These are, in short, vacant lots, which do not help meet the demand for the services of urban land.

Because S_2 minus S_1 is held idle, the level of urban land rent rises to R_2 instead of R_1 . This high rent level, and the high land prices derived from it, stimulate subdivisions otherwise submarginal, increasing the number of urban lots from L_1 to L_2 .

The number of vacant lots is L_2 minus L_0 . What is the social cost of keeping these lots vacant? The utility of the lots from L_0 to L_1 is of course the area under the demand curve between L_0 and L_1 : price plus consumer surplus.

As to the lots L_1 to L_2 , their utility to urban users would be, in the aggregate, only the area under the urban demand curve, D , from L_1 to L_2 ; but their cost to society is greater than that. It is the area under the supply curve, S_2 , from L_1 to L_2 . The supply curve represents the cost of subdividing and providing public works for those excess lots; that is, it represents the best alternative use of the land, probably in farming, plus the cost (reduced to an annual equivalent) of the resources poured in to provide urban public works and utilities.

Adding these, we get the vertically shaded area: E_0, P_1, E_2, L_2, L_0 . This is an area still not as large as the rectangle E_0, E_2, L_2, L_0 , which represents the cost of the lots were they all valued at R_2 , the going level of rents. But it begins to approach that rectangle.

And to these costs we should add the horizontally shaded triangle E_0, T, S . The lots from S to T are improved; but their cost of subdivision exceeds what would be their rent were no land withheld from the market. Adding this to the vertically shaded area we get a total nearly approximating what we would have by evaluating all the vacant lots at R_2 , the going level of rents. So as a rough rule of thumb one may say that the aggregate unrealized direct income of unused land, plus the costs of excess subdivision, are together almost as great as the unrealized rent of land at present high levels of rent.

This leaves to consider the area R_1 , R_2 , E_0 , S . This area represents no net loss or gain to society, but merely a redistribution among groups due to lower rents. Holders of used urban land lose it; but their loss is the gain of users, customers and complements.

The social losses represented on Fig. 1 are, therefore, the shaded areas: (a) the vertically shaded areas representing unused land; and (b) the horizontally shaded triangle representing the portion of used land whose costs of subdivision exceed what its value would be were no land idle.

Our exposition will impress many readers as oversimplified. And so it is. Figure 1 is but a pale likeness, in abstract and static form, of a flesh and blood phenomenon, dynamic and complex. Yet it provides an indispensable conceptual framework for valuing idle land in the aggregate, and for estimating the cost of excess subdivision. And as the things abstracted are common to all frontiers, it serves not only for the urban but, mutatis mutandis, for any frontier. The framework also proves useful in analyzing dynamic movements in land markets, a matter we take up shortly (point E).

G. The reduced marginal productivities of capital and labor, including reduced investment and employment.

The people who might find work on (as well as consume the services and products of) unused land must crowd

onto other lands. There, assuming diminishing returns, their marginal efforts will bring smaller returns. Capital, too, will yield less at the margin. Taking the nation as a whole, the effect on wage levels and investment yields must be appreciable. Men or equipment producing and earning values of several dollars a day less than they might are clearly not using their time to best advantage.

In time of unemployment the loss is not merely an additional sum they might earn on idle lands; but their entire earnings. The land, put to use, would provide new investment and employment opportunities. Increased investment might well have multiple effects on national income. Economic stagnation was not long ago attributed to lack of new frontiers. Are there not such frontiers of unoccupied land within the very centers of our civilization?

D. Costs of scattered settlement

These costs we have already discussed at length. In a word, they are increased distribution costs and shrunken markets, limiting specialization and exchange. These costs, in the sense of wasted opportunities for technological progress, may be enormous--over several decades, simply incalculable.

Our previous discussion concerned only urban settlement. The costs of scattered rural settlement are likewise very large; power, phone, water, road, collection and

distribution costs of all kinds being very high, social life limited, schools too small, specialization hampered, and sellers generally reduced to catering to the lowest common denominators of taste.

E. Increased economic instability

It has often been remarked that the greatest fluctuations occur in those economic activities whose products are farthest from the ultimate consumer. Construction of buildings is generally considered to suffer very violent swings. But, as Lewis Maverick has observed, subdividing activity is farther yet from the consumer, and there is probably no other economic time series whose swings have such amplitude.¹²²

Refer again to Figure 1, recalling that the supply curves there purport to show how supply will increase over a period of years (arbitrarily five), and are not reversible in so short a time.

Let demand increase from some lesser amount up to the curve shown on Figure 1. Conceivably supply could adjust smoothly to demand, along S_2 ; but it rarely does. How often a huge speculative bubble dominates the transition, misleading investors applying capital to land, swelling phenomenally, and one day collapsing in a chaos whose repercussions may upset the whole economy. This evolving bubble bears analyzing.

The new demand increases the income to be realized from improving urban land, and construction proceeds apace. But many lot holders, heartened by signs of new interest, raise their holdout prices. The supply of improved land at work meeting the demand for the services of urban land increases too little to prevent a sharp rise of rents and land prices. Demand, frustrated in the center, probes outward, titillating speculative hopes for the next belt. Many holders decide to wait for a rise, or to "see how the district develops," with the result that it doesn't. Demand, naturally, pushes farther outward, where the process repeats, and so again and again in a widening circle.

High lot prices of course tend to reduce the profit margins of builders, for whom a lot is a basic raw material. Thus in some degree high lot prices inhibit improvements. At the same time, they make new investment opportunities for those who would "create" urban land by subdividing. On Figure 1, the high rents determined by the intersection of S_1 and D evoke new subdivisions out to the point E_2 , where subdividing cost per lot equivalent (reduced to an annual equivalent) becomes as high as the rent.

Moreover, moving a step closer to reality than Figure 1 can take us, it is really urban lot prices, rather than current rents, that stimulate subdivision; and these prices often rise in even greater proportion than rents, thanks to extravagant expectations of future growth. Let

land prices rise over a few years, let some handsome fortunes be turned, and many investors come to look through rose-colored glasses at any investment designed to gain from the "inevitable" rise of land prices. Money flows freely to buy vacant lots, and other money flows freely to convert farm or wasteland into subdivided lots with streets and sewers, and advertise it for sale--the flows determined not so much by any nice calculations of supply and demand as by herd instincts, mass hypnotism, and such supreme folly as only avarice seems able to engender.¹²³

What has sometimes ensued cannot be explained on an entirely rational basis. As a matter of American history, excess land subdivision has several times gone to incredible extremes. Probably in no other market can one find comparable excesses. Perhaps it is the perpetual life expectancy of land, allowing great scope for fevered imaginations to err; perhaps it is the irreproduceability of location, which makes of many lots potential bonanzas, should demand settle on their location; or perhaps it is partly because the mere processes of subdivision and construction bring payrolls and demand, so that growing districts, or even whole towns and regions, have bustled for years with the semblance of economic well-being, but actually exporting little except securities and land titles, and having little immediate raison d'etre save to build themselves.¹²⁴

Whatever the causes, there have been periods of several

years when avowed speculators have subdivided lots with utter disregard for supplies on hand. Far from dampening their ardor, the hum of subdividing activity has seemed to convince many buyers that the frontier would grow on forever. In these circumstances the subdivider, like Leacock's knight, leaps to his mount and rides madly off in all directions, quite forgetting that the area of a circle increases with the square of its radius, and that a few circles of radius 50 miles could, at urban densities, house the population of the globe. E. M. Fisher has calculated that in our last great land boom subdividers overestimated their market by some 30 years!¹²⁵

At this writing (November 1955) the current boom seems to be entering this dangerous phase. Urban lot prices have about doubled since 1946,¹²⁶ thus squeezing the profits of home builders, and diverting funds from improving lots to creating them from acreage. Acreage is high, too, diverting funds from subdividing inner acreage to building highways to bring submarginal acreage into the urban sphere. Homebuilding is off 20% this year, while capital is pouring into streets, expressways, water mains, sewers, utility distribution networks, etc.¹²⁷

But the brute facts of supply and demand cannot forever be denied, and when they finally take command of the market, the bubble collapses. Then the repercussions must be widespread. The economy has been geared to subdividing

vast numbers of lots, often with borrowed money; now it must readjust to absorb the surplus and pay the debts, while subdivision stands still, and all the incomes it created are no more.

One might expect the collapse to encourage construction, through lower lot prices, in the same measure that it discourages additional subdivision. Historically it has not, and for this there are some good reasons. One key factor is probably that builders typically work on borrowed funds, at fairly high interest rates and on fairly short terms, in contrast to lot speculators who more typically work with their own funds. Let us explore the effects of this contrast.

Builders, by the nature of their business, must speculate in the land under what they build. This, when they expect land prices to rise, is no deterrent but often a lucrative adjunct to their operations.¹²⁸ These same builders become quickly circumspect when prices falter, the more so when some of their ventures pay out too little to justify the high price of land, and some of the more extended shoe-string operators go to the wall. Working typically with funds borrowed on short or medium terms at fairly high interest, they must sell quickly, turn over their funds and get out. They are particularly skittish about being left "holding the bag" in a slow market. This is the more true when lenders, sensing greater risk at current price levels,

hike interest rates and shorten terms, and refinancing becomes a more difficult prospect. Builders in these straits must lower their bids for lots.

But lot holders are not in general so quick to lower their asking prices. More typically working with their own funds, they are not pressed to sell; more typically absentees or retired or otherwise unfamiliar with the local situation, they are not so aware of a surplus of lots hanging over the market; more typically optimistic, they are not psychologically prepared to take losses; more typically large operators, they are more concerned about "breaking the market." As a matter of history, therefore, a period of falling prices is a period of deadlock, of very few land sales, and of rapidly declining construction.¹²⁹ As to the speculative builders, they generally operate with remarkably little overhead.¹³⁰ When their profit margin is squeezed they fold their tents like the Arabs, and as silently steal away.

Another feature of this period, according to Arthur Holden, is that many prospective homeowners have sunk their equity funds into high-priced land titles on which they plan to borrow for future buildings. But when land prices waver, loanable funds dry up, frustrating these plans.¹³¹

With subdivision and construction falling off, two major investment outlets begin to close.

Total private construction of all types amounted to about 45% of total private investment during 1945-50, and the percentage was considerably higher than this in the major expansions before 1929.¹³²

The drop of investment spending may very likely induce a further drop of national income, through that process that has come to be known as "the multiplier"--or, if one prefers the older terminology, through a fall in the velocity and perhaps also the quantity of money. The drop in income may very likely induce a further drop in investment as well, since a falling income may have a remarkably sobering influence on some about to borrow to build.

Moreover, reversing the upward course of land prices must in some degree increase liquidity preference. Land, in a rising, active market, is a very liquid asset, not quite a "near-money" perhaps, but in some measure a substitute for money. That is not to say it serves as a medium of exchange, although it sometimes does; but rather than it serves as a secondary or tertiary reserve for contingencies: it is esteemed as an asset that can be converted to cash quickly and with little loss by sale or mortgage. In such a market, individuals holding land do not feel the need of keeping such large cash reserves as otherwise. But in a falling market the liquid freezes: asking prices generally lag above bidding prices and land moves very slowly. Holders of land feel the need of accumulating larger cash balances. The devastating spiral effects of that process are well known. The drive for liquidity reduces spending, which

freezes assets still harder, which in turn augments the drive for liquidity. In income terms, the rise of land prices is a species of "income" which, although it pretty well escapes official data on "national income," by no means escapes the notice of its beneficiaries. It is heady stuff, this gratuitous swelling of one's assets, and must powerfully stimulate spending, as well as banks' willingness to lend. From 1920 to 1926 urban land prices about doubled, increasing by several billions a year, no small influence in the economy of that time.¹³³ To this we might well add part of the rise of stock prices, the assets of corporations including of course vast and valuable real estate. In income terms, again, the fall of land prices is negative income, tending to depress spending. And when this and other factors inhibit new bank loans it becomes painfully evident that a great deal of income has been committed to service loans taken on during the expansion.

Then, too, a downturn, or even a levelling off, of land prices will doubtless bring a crop of bankruptcies among a few overextended speculative builders to dampen the ardor of others. Builders, we have mentioned, must unavoidably speculate in the land under what they build. Some of these will have been sailing close to the wind, depending on a further rise of land prices to balance their books. In a rising market a corrupt, starry-eyed or inefficient promoter often can use borrowed money for current operating expenses

or varieties of embezzlement, and cover himself by the rise of land prices. The inviting sunshine of a rising land market, indeed, seems to draw forth a breed of shoestring plungers and gamblers who can persuade lenders to let them work on the thinnest of equities; and this same warm sunshine lulls lenders into an easy tolerance of managerial bungling and outright embezzlement that is, in retrospect, astounding. There seem always to be some whose ability to pay their debts, feed their families and keep out of jail depends utterly on a continued rise of land prices. Let the market waver, let a panicky lender foreclose, refuse to refinance, and some of these, often among the most conspicuous symbols of the new era, face the wringer. Their affairs are exposed amid great publicity heavy with the breath of slander. Investors wonder "If these, why not others?" Lenders scrutinize borrowers closer; borrowers sensing the temper of the times hesitate at commitments that may need refinancing. The result of all this is further to reduce confidence and investment.

Then there are the bank failures. Banks, in times of booming land prices, are inclined to accept land titles as collateral for substantial loans. In crashes they have been deluged with land they cannot sell for enough to meet the bond it is supposed to secure. They can hardly sell at such prices, in quantity, as then the bank's books would show assets less than deposit liabilities; too, allied

banks and real estate interests are urging them to hang on, to avoid breaking the market. But in time depositors sense that not all is well, and many banks, their assets frozen, have been unable to meet runs. Billions in bank deposits are wiped out, and the community loses a large part of its money supply. In 1933 H. D. Simpson wrote:

Real estate interests dominated the policies of many banks, and thousands of new banks were organized and chartered for the specific purpose of providing the credit facilities for the proposed real estate promotions. . . . these banks commonly stopped short of nothing but the criminal law. . . and sometimes not short of that. . . .

. . . real estate, real estate securities, and real estate affiliations in some form have been the largest single factor in the failure of the 4,800 banks that have closed their doors during the past three years. . . . our banking collapse during the present depression has been largely a real estate collapse.¹³⁴

The cumulative effect of all these factors can be devastating, leading to the grasping for liquidity and security, the general chaos, disintegration and demoralization of interdependent economic relations that is a depression.

What we have said of the urban frontier applies with a few technological modifications, to other frontiers. The land bubbles of 1920-29 repeated, in modern dress, the fabulous canal, turnpike, and railroad bubbles of the 19th century.¹³⁵ Less widely known, especially in the east, is the irrigation frontier. There, the slow settlement of projects ready in the early 'twenties delayed the flood of irrigated crops they would ultimately produce, and lot prices

remain high enough to evoke many further projects otherwise submarginal, whose output led to ultimate collapse of prices. David Weeks warned in 1930 of a "vicious cycle of overexpansion" from this cause, of the danger "of the development of competing areas which remain in production to aggravate the situation when prices fall again."¹³⁶ The ensuing collapse, with its foreclosures and bankruptcies, strikingly paralleled and reinforced the contemporary urban debacle.

None of this is to say, of course, that the land market alone is responsible for boom and bust. But it certainly does play a large role. Builders and subdividers on a frontier of economic growth must operate and borrow and make decisions on the shaky foundation of a bubble, a large land bubble whose glossy surface is supported only by the pressure of vacant space inside. As it swells, opportunities multiply; when it bursts they disappear in chaos, and many a bankrupt with them. Little wonder that each major American land boom has closely preceded a major depression, and no major depression has come except shortly after a land boom. As there seems to be some line of causation from one to the other, we may tentatively suggest that one social cost of vacant land may be some contribution toward unstabilizing the economy.

VI. Conclusion

To sum up, a great deal of land in the United States lies unused. While we keep less of our land unused than do

many of the most retarded countries, still we keep a great deal, especially on frontiers of economic growth. There appears no prospect of the problem's curing itself. It is if anything more pronounced on modern urban frontiers than on the old frontier of cultivation.

This unused land represents a violation of the equi-marginal ideal, being located not beyond the bounds of settlement, but so thoroughly mixed among settlements that one cannot usually define the bounds of settlement. Much unused land lies amid intensively used urban land of high value and marginal productivity, yet it yields no urban services, nor any income for its holders.

In addition, this unused land obstructs economies of closer settlement, disrupts markets, denies employment and investment outlets to society, and, strategically located on margins of economic growth, by the fluctuation of its prices exerts some unstabilizing influence on the flow of investment, and thence on all economic activity.