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THE HISTORICAL RATIONALE FOR THE PROPERTY TAX

By

Philip M. Raup

Department of Agricultural and Applied Economics

University of Minnesota
Institute of Agriculture
St. Paul, Minnesota 55108

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Taxes on land and real property are among the most ancient taxes of which we have record. To treat them in a historical context is presumptuous, in a paper as short as this. And yet it is important to set our property tax problems of today in a historical frame, limited though it may be. The focus will be on the United States, and the time span will be confined largely to the Twentieth Century. Short as it is, this period has encompassed the transition of our economy, and its tax systems, from one dominated by rural institutions to an economy dominated by cities, by wealth held in intangible forms, and by a population remote from the land in its habits and occupations. Still the property tax persists. Why? This paper will attempt a tentative answer, and will explore some of the economic and social forces that have sustained the property tax in a post-industrial society.

The economic justification for the property tax can rest on several different bases. It can be regarded as a wealth tax, singularly appropriate to an economy in which wealth is primarily represented by land.

Alternatively, it can derive its justification from its relationship to the income from property. The preferred approach is in part a consequence of the stage of development of the society. In a non-monetized

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society, or one in early stages of the development of an exchange economy, there is a tendency to impute a person's income from his wealth, especially from his tangible wealth. Acres of land, number of houses, number of cattle, horses, or sheep--these become the indicators of relative ability to pay taxes. Even in urban settings this habit persists. In the cities of the Middle East today a measure of a man's importance is the number of keys he has, signifying the number of houses in his possession.

This focus onwealth as an indicator of ability to pay is appropriate to an economy in which technological conversion rates in production processes are believed to be largely outside of man's control. Crops are a function of weather; the wealth of mines and the sea are lumped together with wild game and their capture regarded as a matter of luck - the fruits of the chase.

As the economy becomes more commercialized, the emphasis shifts from the stock of wealth to the flow of income. This process is accelerated by the growth of technological diversity. Management modifies nature. Crop yields respond to tillage, seed selection, and soil and water conservation. The concept of fertility is transformed from that of an independent variable to that of a dependent variable. Techniques of sanitation, transport and food storage support much larger urban populations. The imputation of income from wealth is eroded, and tangible property is no longer a valid measure of ability to pay taxes.

The consequences and contrasts of this transformation can be seen in the different ways in which the property tax is administered in the United Kingdom and the United States. In the UK the tax on property is levied on the income from property. Wealth in property is measured in multiples of its annual income. "Twenty years purchase" may be the

answer given by a British farmer to the question, "What is the value of this land?" Meaning, of course, twenty times the annual net rent.

In the United States, the property tax is levied on the capital value of the property, reflecting a frontier tradition, the prevalence of owner-occupiers, and the relatively late development of an efficient rental market.

Apart from these different approaches to the roles of wealth and income, the property tax can also be justified as a "user tax", on the basis of benefits received. The "use" in this case is the use of government -- of the organized structure of the society that promotes stability, communication, and the security of life and property.

This view of the property tax as a user tax was especially appropriate on the American frontier. The first functions of government were to establish order, provide roads, and establish a system for the registration of rights in land, minerals, or water. Early in our history a fourth function was added: The provision of schools. These were all local services, clearly beneficial to the community, and with benefits flowing in a relatively egalitarian manner to all residents.

In both our early cities and on the farms, it can be argued that the correspondence between tax costs and benefits received from the expenditure of funds raised through the property tax were roughly equitable. This is particularly likely to be the case when the following conditions hold:

1.) A widespread diffusion of rights in property, and a trend toward less rather than more concentration as settlement progresses.

2.) Income flows that are roughly proportional to property rights.

3.) Comparatively low levels of geographic mobility, insuring that those who pay property taxes will be the ones who benefit from slow-maturing public enterprises like roads and schools.

4.) Relative uniformity in life styles and family size.

4.) Relative uniformity in work schedules and the availability of leisure time.

Today, the functions of government have changed with the changing social order, and the uses of government cover a much wider range. In the early days of settlement, government was a "producers good". It provided inputs into the production process through the creation of an infrastructure that was essential to the development of an industrial society.

Government today is still a major provider of productive inputs, but it has also taken on responsibility for the provision of services that in an earlier era were regarded as consumers goods, or as proper functions of the household, not the firm.

The user of government today benefits from pollution control, land use planning, environmental protection, welfare programs, parks and recreational facilities and many other governmental functions for which the incidence of benefits is sharply differentiated. Many government services have become "consumers goods."

As these new structures and functions develop it is understandable that questions should be raised about the suitability of the property tax for the financing of public services. We can identify many reasons for this shift in the appropriate basis for fiscal support, but one stands out: the dramatic transformation in attitudes toward the

proper division of responsibility between the public and the private sector for health and welfare.

This brief survey of some of the major forces affecting the role of the property tax points up the significance of social changes as determinants of needed reforms in tax and fiscal systems.

The shift in attitudes toward the purposes of land classification and assessment provide one of the most revealing illustrations of the changing responsibilities of government. In virtually all countries the initial interest in land classification originated in a desire to know how valuable or productive the land was, in order to collect the maximum amount of tax. This was true, for example, in the Roman empire, in Britain under William the Conqueror, in British India, and on the American frontier.

Beginning in the 1930's in the United States, there has been a major shift in the uses made of assessed values. They are still necessary as a basis for tax levies, but they have also become a base for the determination of how money should be disbursed in the form of state aids to local governments. Classification and assessment today serve the dual functions of distributing tax burdens and distributing central government revenues that are shared with local government.

This shift is a reflection of fundamental changes in income flows, in the structure of business firms, and in the division of responsibilities for education, welfare and social services between the family and the state, and among levels of government. As a result, property tax assessment must reckon with both fiscal and welfare consequences. This is one reason why concern about the property tax has taken on a new

dimension in our generation.

Another reason grows out of the almost world-wide phenomenon of inflation. It is particularly difficult to administer a property tax fairly in times of inflation since persistent inflation undermines it, in two ways:

a) By insuring that the assessment process can never keep up with market values

b) By creating an artificial demand for land as an inflation hedge, thus demoralizing conventional tests of value based on productivity, and location.

Because the property tax is levied on the basis of the most durable of assets, it is axiomatic that its effectiveness is greatest in political systems that can provide political and fiscal stability. Property values represent capitalized expectations. Where expectations are subject to great uncertainty, a tax based on land values or land income is placed under great stress. If inflation is expected, property taxation often becomes perverse. For inflation demoralizes all of the traditional calculations that relate property values to expected income, thus destroying the economic rationale for the tax.

We have known periods of inflated property values in our history as a nation, but we have never experienced acute or sustained inflation. Our property tax system has never had to cope with land values driven to dizzy heights by frightened investors. We still do not have to reckon with the kind of inflation that wrecks currencies and destroys credit systems, but we have had enough inflation in recent years to raise doubts about our conventional use of market values as a basis for property tax assessment.

One effect of inflation can be illustrated by a comparison of the differences that result from use of alternative measures of value, in assessment. We have already noted that the annual rental value is the base used for property tax assessment in the United Kingdom. In contrast, a capital value base is used in the United States (and in Canada, South Africa, Germany, Austria and Denmark).

A major difference between these two bases is the treatment of idle land and vacant improvements. In the British system, the tax is based on the rental value in actual present use. A vacant property is not taxed.

In the US version, the tax is based on market value. This presumably reflects capitalized net income expected from the most profitable use of the property but not necessarily from its present use. A vacant property in the US system pays taxes as if it were occupied.

A capital value base makes different demands on valuation and assessment processes than does an annual rental value base. For example, a threat of inflation can enter into the property tax base much more readily if the capital value base is used than if rental value is the base.

On the other hand, a rental value base tends to follow the business cycle with less time lag and with narrower deviations than is the case with a capital value base. The problem of tax delinquency is thus more acute in countries using a capital value base. There may be no close relationship between current income and the obligation to pay taxes when a capital value base is used, and especially in the downswings of the business cycle. Our experience between 1920 and 1940 is still vivid proof of the damage that can result.

In contrast, the capital value base works to advantage in a newly

settled area, or in a region in which speculative buying and selling of land precedes any actual development. The British system, using a net annual rental income as a base, would have yielded very little revenue for many years during the period of frontier settlement in the US or Canada. This was a period of heavy capital requirements for the creation of a rural infrastructure. A tax base reflecting future expected income was better suited to the forced saving requirement that was a precondition for local community development on the frontier.

We have a property tax system, in short, that was well adapted to the needs of a frontier nation. Questions are now properly raised about its suitability in an urbanized economy, in which demands for land reflect widely different uses, tastes, and concepts of value. We have learned that it is impossible to practice forestry in a system of private property in which taxes are based on capital values. We may now be in the process of learning that it is similarly impossible to practice agriculture if land values are based on non-agricultural considerations and if the property tax is based on capital values.

These doubts are reenforced by recent trends in the differentiation of expected capital gains. Throughout the 19th century and well into the 20th century the pattern of US development increased the number of communities in which capital gains in land were being experienced. These were diffused throughout the country, and contributed to a wide geographic dispersal of the value-creating influences of public investments in community services and a transport network, first rail and then road.

Beginning with the Depression of the 1930's and accelerating after World War II, this pattern has been reversed. The wealth-creating influences of urbanization and population concentration are being experienced by a decreasing number of large urban centers. The enjoyment of capital gains is being concentrated, in a geographic sense, in fewer and fewer places.

This is paralleled by a concentration of property rights which has accelerated the aggregation of capital gains in land in fewer and fewer hands. The increase in the number of stockholders in the nation's businesses has been well publicized by banking and brokerage firms and trade associations. It is rarely pointed out that one must evaluate this statistic in terms of the associated decline in the number of proprietary business firms and the small role they play today in the ownership of non-farm commercial and industrial real property. Non-farm and non-residential real estate is highly concentrated in the hands of a relatively few owners. The pace of this concentration has been enormously increased by the trend toward corporate mergers.

The concentration of ownership of real property can be measured in two dimensions. We can look on it in a cross-sectional fashion, measuring its concentration or dispersion among owners at a point in time, weighted by acres or value.

Alternatively, we can weight the concentration index by estimates of prospective degrees of value appreciation or capital gain over time. It is in this second sense that the degree of concentration has progressed dramatically. The ownership of the real estate of the United States that

has the greatest prospect for future increases in value is more highly concentrated than is total real estate.

The reason is not hard to find. By adopting a progressive income tax and a flat-rate capital gains tax we have made the rewards from capital gains exceedingly rich for the high income investor. By this differential reward system we have insured that the wealthiest investors can bid the highest prices for the opportunity to share in prospective capital gains. This policy has made it inevitable that ownership of real estate with the ripest prospects for capital gains will concentrate in the hands of a small number of wealthy owners.

The feed back loop in this tax policy is also worth noting. It guarantees that the higher the income tax bracket the greater the incentive to devise investment undertakings that will insure a capital gain. The witness to the success of this inverse policy dimension in provided by large scale property developers who can command a critical mass of capital large enough to guarantee a capital gain. The large-scale suburban shopping center need not succeed in a retailing sense if it succeeds in polarizing capital investment in its neighborhood sufficiently to guarantee success as a real estate venture. The key officials in the largest department store complexes today are land use planning and real estate officers.

The pattern is similar in housing. A builder who constructs a few dozen houses a year is at the mercy of market forces. A developer who can command the capital needed to construct a development of thousands of houses can to a significant extent create his own market. The fruits of community-created value are being received by fewer and fewer owners. This too raises questions about the suitability of a property tax in a system that deals so inequitably with capital gains.

We have noted that in conception, and especially in implementation the American version of the property tax has been a rural institution. A remarkable testimony to its durability, flexibility, and adaptability is the ease with which the property tax made the transition to an urban-industrial age.

One explanation is the automobile. The automobile translated the demand for housing and transport into a demand for suburban, single-family homes. In these suburbs, the degree of reliance on the property tax for governmental revenues has reached levels that approach those of the most rural counties in the 19th century. This revenue went overwhelmingly into roads and schools, that is, into the classic infrastructural investment forms that are urged upon developing countries or regions.

The contribution of the property tax to suburban capital formation in the United States reached levels of significance historically attributed to the land tax in Japan after the Meiji restoration. It has been the major tool for the diversion of disposable personal income into productive capital investments in suburban America. This was how suburbia saved for its infrastructure.

In this sense, the history of heavy reliance on a property tax during early stages of development was repeated in mid-Twentieth century American suburbs. Their principal attraction has been good schools and good roads. The property tax has been one of the principal tools used to force the savings that gave them life.

It is in this sense that the suburbs of the 20th century have replaced

the frontier of the 19th century in keeping alive the economic rationale for the property tax. To the extent that this suburban way of life is being questioned we can also expect to find questions raised about the property tax and its impact on land use and the structure of cities.

One immediate impact of the property tax on the size and shape of our cities is seen in its influence on the "build quick and unload" practice of real estate developers. If property tax rates can be kept low, or reduced by preferential assessment as in the Minnesota "Green Acres" law of 1967, this lengthens the planning horizon within which speculative buyers can hold land in anticipation of capital gains. Property taxes can be a major fraction of the holding costs of real estate purchased for speculative purposes. The lower his opportunity cost of capital, the greater the importance of the rate at which property is taxed, in the eyes of an investor in a high income tax bracket.

This interaction between the opportunity cost of capital, expected rates of appreciation in real estate value, and property tax rates can be illustrated by the following examples.

Assuming an opportunity cost of capital of 6%, the interest income of a married investor with over $88,000 of taxable income would have been taxed at 60% in 1972, leaving him a net income after tax of 2.4% on his investment.

If his alternative is an investment in real estate yielding a capital gain that will not be taxed at more than 35%, then the indifference point in his decision to invest in land will be an expected rate of capital gain that will yield him a net after-tax income of

2.4% or more. This would be an annual rate of land value increase of 3.69% (65% of 3.69=2.4).

If the tax rate is 1% of market value of the land per year, this raises the needed rate of capital value appreciation to 4.69% per year for the land purchase to be an attractive investment. A tax rate of 2% raises it to 5.69, and 3% to 6.69.

To use an agricultural example, the taxes levied on farm real estate in the Delta states of Mississippi, Arkansas and Louisiana in 1971 averaged $0.34 per $100 of value, or 0.34%. Adding this to the indifference rate of return of 3.69 yields a carrying cost of slightly over 4% (opportunity cost of capital adjusted for preferential capital gains tax treatment, plus property taxes).

At this rate the land is an attractive investment if it is expected to double in value in 18 years.

If the tax rate is $1.89 per $100 of value (the 1971 rate on agricultural land in the Lake states of Michigan, Wisconsin and Minnesota), the carrying cost rises to 5.58% per year. For land to be an attractive investment at this rate it must double in value in 12 years.

A tax rate of 4% of market value would result in a carrying cost of 7.69%. The current rate of tax on some urban and suburban properties in the Metropolitan area of Minneapolis and St. Paul approaches 4%. For land to be an attractive investment at this rate it must double in value in 9 years.

If the nominal opportunity cost of capital is not 6% but 8%, the indifference point between interest income and a capital gain for a wealthy investor (60% marginal tax rate or 35% capital

gains tax rate) becomes 4.92% or just under 5%. A property tax rate of 3% of market value per year would thus virtually wipe out any advantage gained by favored capital gains tax treatment. The lesson is clear. If the property tax rate is kept low, a wealthy investor can derive an advantage from the preferential tax treatment of capital gains.

This builds in a powerful incentive for commercial real estate developers to use political power to secure favorably low tax rates. To the extent that they succeed this throws an added burden on taxpayers who cannot qualify for the lower rates. The preferential taxation of farm land in urbanizing areas has usually been promoted as a device to preserve agriculture and open space. Its principal result is to make the preferentially taxed land more attractive to speculators (including some farmer owners), thus attracting capital that is interested in a quick turnover and not in a long run productive investment. This further discredits the property tax.

The growing discrepancy in rates at which property is taxed in different states and regions is another reason why the property tax is being questioned severely today. The property tax is least important in the Southeastern United States. It is most important in the New England and Great Lake States and in the Northern Great Plains. The relative importance of the property tax has been heavily influenced by the structure of government adopted when the states were first formed. Where the Massachusetts-Connecticut-New York constitutional pattern was followed, as in the Lake States and Northern Plains, the property tax is prominent. Where the Virginia pattern was followed, the local units of government were relatively weak, and so was reliance on the property tax.

These differences were accentuated by the greatly expanded demand for schooling in the last third of the 19th century, and especially after 1920. Where the benefits of the property tax were local, visible, and received by those who paid the taxes, taxpayers were willing to tax themselves quite heavily. This was especially the case with suburban schools, and in rural areas where family sized owner-operated farms predominated. The level of these taxes is surprisingly high.

Annual taxes per acre on farm land in the New England states and the Great Lake States average about 2 per cent of current market price. In many prosperous suburbs the rate on residential properties exceeds 3 per cent.

In 1971, farm land in the Great Lakes states averaged approximately $260 per acre, and property taxes $4.92 per acre. An investor achieving a net rate of return of 5 per cent on his capital would need to invest $98 to earn enough to pay the tax on one acre. If there was no tax, he could afford to pay $98 more per acre for the land, or 38 per cent more than the current market price in 1971.[1/]

In North Eastern and North Central city suburbs, current annual property taxes cluster in the $1,000 to $2,000 range for single family homes in the $30,000 to $60,000 class. If we ignore the differential effect of deductibility of property taxes on personal income tax returns, the current rate of taxation is roughly equivalent to an annual sum that would support an additional $20,000 to $30,000 in capital value.

1/ These calculations and those that follow are based on Farm Real Estate Market Developments, USDA, CD-77, July 1972 and Farm Real Estate Taxes, USDA, RET-12, February 1973.

As with the farm land, this ranges from one-third to one-half of current market prices for these homes, depending on the capitalization rate used.

In the Lake States, to be more specific, an abolition of all property taxes would justify a 35 to 50 per cent increase in the per acre price of farm land and in the market price of suburban single family homes.

The contrast with states of the South, including Oklahoma and Texas, is dramatic. In none of the states of the Appalachian region, the Southeast, the Mississippi Delta, or the Southern Plains did property taxes on farm land reach one per cent of market value in 1971. In seven of the fourteen states taxes were under one-half of one per cent of market value. For the region as a whole, the average is under 0.6 of one per cent, or approximately one-third of the level prevailing in the Northeastern and Lake States.

An extreme contrast is provided by the Delta States of Mississippi, Arkansas and Louisiana. Property taxes on farm land in these three states have been falling steadily for 40 years. In 1930 they were roughly equal to the tax per $100 of land value in the Lake States ($1.57 and $1.62, respectively). In 1971 the tax level in the Delta States had fallen to $0.34 per $100 of value, or less than one-fifth of the level prevailing in the Lake States ($1.89 per $100 of market value).

The income required to pay the property tax on farm land in the Delta States would have supported an additional land value of $20 per acre in 1971 if capitalized at 5%. The average market value in 1971 was $275 per acre. Abolition of all property taxes on farm land would have added only about 7 percent to the value of Delta land. Contrast

this with the 38 per cent increase in farm land values that could have been expected to result from abolition of all property taxes in the Lake States in 1971.

The significance of these calculations bears heavily on any attempt to use property tax incentives to achieve non-revenue goals. Preferential tax policies to protect critical areas, promote the maintenance of open space, compel the productive use of idle land or preserve agriculture have little prospect of success if tax burdens are low, and falling. It is not surprising to find, for example, that Florida and Texas are almost the only states in the South that have used any system of preferential taxation of farm land in order to protect agricultural land from urban encroachment. Tax rates in general in the South have been so low, and falling so steadily, that they have been an open invitation to speculators, and have minimized the effectiveness of tax policy in guiding land use.

One consequence of high tax rates in the Lake States has been the reappearance of tax delinquent lands on a surprising scale. In Minnesota in 1971 there were 4 counties (Aitken, Cass, Hubbard, St. Louis) in which tax forfeit lands were more than 20 percent of <u>all land</u> in the county. In four other counties the percentage was over 15. And in another 4, the percentage was 8-14.

In 1971, there were 5 counties in which tax forfeited land was over 40% of total <u>private</u> land in the county. In another 5 counties

the percentage was 21-40.[2/]

One argument against the property tax in rural areas has been that land is a declining input in agriculture, and therefore an eroding base for rural taxation. The foundation for this argument was advanced persuasively in the early 1950's by T.W. Schultz at the University of Chicago, who argued that land was no longer a limiting factor in agricultural production.[3/] One inference for tax policy was that land as a base for raising revenue should be abandoned if the community wished to have a tax-base that was capable of keeping pace with technological change.

But land as an input in agriculture has not declined in importance. As a percentage of inputs into agricultural production, land in 1970 was 18 per cent of the total. This was the identical percentage that was estimated for 1870, 1890, 1920 and 1930. It went up to 20% in 1910-15, and in 1955-60, but has remained remarkably constant as a fraction of total inputs over the past 100 years.[4/]

Land as a base for taxation has not deteriorated. In fact, some of the recent incentives to invest in land have attracted a class of investor buyers or non-farm users that look upon their land purchases

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2/ Iron Range Resources and Rehabilitation Commission, and John J. Shea, "Tax Forfeiture and Land Ownership Problems in Minnesota", Ag. Econ. 8-360, Seminar in Land Tenure, University of Minnesota, March 15, 1972.

3/ T.W. Schultz, The Economic Organization of Agriculture, New York, McGraw-Hill, 1953, and especially chapter 8.

4/ "Productivity: Index of Total Farm Input and Productivity, for Each Farm Production Region, 1939-71", Supplement for 1972 to Statistical Bulletin No. 233, ERS, USDA, Oct. 1972, and supplemental historical data supplied by FPED, ERS, USDA. See Appendix Table 1 for details.

as consumption goods, or tax shelters. These types of buyers are increasing the attractiveness of land taxation because of the relatively inelastic nature of this type of demand for lands. Recreational and tax-shelter types of land use are habit-forming and should be taxed accordingly.

Although the property tax has been widely condemned, it is instructive to note that some of the grounds on which it has been criticized are probably its greatest strengths.

Consider its lack of relation to ability to pay. In a system undergoing rapid change, subject to inflationary threats, and committed to the maintenance of private property, the property tax is one of the stabilizing elements in the value structure. The remedy lies in improving it, not in abandoning it.

It is ironic that support for the property tax is declining at a period in history in which we are at the threshold of a massive improvement in our ability to prepare land tax and assessment records efficiently and economically. Computerized land data systems and remote sensing potentials promise to make the administration of the property tax much more equitable and efficient than it has been in the past.

If we rank the components of our tax structure in terms of the impact of computerized data systems on the ease and cost of administration, it is clear that the property tax is the greatest beneficiary of this form of new technology.

There is still another and more compelling reason why the property tax merits our careful attention.

Historically, land taxes have been the device by which forced saving was achieved to use in constructing a local infrastructure.

Where this has been the predominant use of property tax revenues, a remarkably high rate of taxation has been endured.

Where revenues from a land (or property) tax have gone primarily to central governments, the political cost of the property tax has been measured in poor collections, high administrative costs and widespread evasion. From the local or regional point of view, if the revenue was taken out of the community it was "patriotic" to evade taxes. A property tax used to finance needed local services was an entirely different tax. Cheating or evasion were clearly at the cost of your neighbors. Fiscal morality was promoted by this type of tax.

One of the heritages we have enjoyed in the United States is a relatively high level of tax morality. Tax evasion and tax cheating occur, in the United States, but they are relatively rare. By comparison with some of the countries of continental Europe, tax cheating in the United States is a minor phenomenon.

It is difficult to explain this by any simple causal factor, but it seems probable that one reason is the heavy use made of the property tax, with revenues used for local roads and schools. This generated a population of honest taxpayers, by making the cost of cheating an expensive social stigma.

We are desperately in need of institutions in our public life today that relate tax burdens to tax benefits and that encourage honesty in tax paying. The property tax has filled this role. It has had an influence on our national life that is not measured by revenue raised. This argument weighs heavily in the balance when assessing the merits of the property tax in a modern fiscal system.

Appendix Table 1

Farm Inputs: Percentage Distribution of Subgroups [a/]

Year	Labor	Real estate	Power and machinery	Fertilizer and lime	Feed, seed and livestock purchases	Taxes and interest	Miscel-laneous	Total
1870	65	18	3	0	3	11		100
1880	62	19	4	0	3	12		100
1890	60	18	5	1	3	13		100
1900	57	19	7	1	3	13		100
1910	53	20	9	2	3	13		100
1915	52	20	10	1	2	15		100
1920	50	18	12	2	4	14		100
1925	49	18	12	2	4	15		100
1930	46	18	14	3	4	15		100
1935	47	19	13	2	4	15		100
1940	53	17	11	2	7	7	3	100
1945	48	16	15	3	8	7	3	100
1950	38	17	20	4	9	8	4	100
1955	32	20	22	4	9	8	4	100
1960	27	19	25	5	11	8	5	100
1965	22	19	26	7	11	9	6	100
1970	17	18	27	9	13	10	6	100

a/ Productivity: Index of Total Farm Input and Productivity, For Each Farm Production Region, 1939-71, Supplement V to Changes in Farm Production and Efficiency, Washington, USDA, ERS, October 1972, plus supplemental data supplied by ERS.