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ABSTRACT

In response to the complexities of technological, social, political, and institutional change, the Property Research Workshop focused on the theoretical, rather than the empirical aspects of property-related research. Specifically, emphasis was on analytical and institutional approaches to research. Ten institutionally-related propositions were presented by resource person for purposes of general and small group discussions. Derived from the institutional propositions, the following property-related research areas were analyzed: (1) the land market; (2) parcelization through easements; (3) farm corporations; (4) population distribution patterns (suburbanization) caused by local parcelization of government; (5) change from production to market domination; (6) the effect of the welfare state on the need for an individual estate; (7) the quality of resources available (fixed vs infinite). The analytical approaches to property research (also presented by a resource person) included: (1) the property rights approach (definition of incentive structure, behavioral assumptions, and conclusions); (2) research models (incentives framework development, model development specifying interactions, variable starting values, behavioral assumptions, model run, and results); (3) hypothesis testing (hypothesis validity). (JC)

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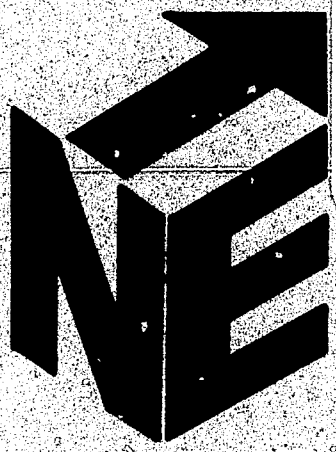

Report on The Property Research Workshop

Orono, Maine
June 25-28, 1975

Prepared by
Dale Colyer
West Virginia University

Sponsored by
Farm Foundation
Northeast Resource Economics Committee—NEC-23
(Land Use Subcommittee)
Interregional Resource Economics Committee

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CONTENTS

PREFACE

Research on property-related problems has increased in importance in recent years. It has become more apparent to social scientists, especially economists, that institutions cannot be taken as given. Institutional changes are constantly occurring, and they affect the social, economic, and political environment in which decisions are made. Furthermore, the institutional structure is considerably more complex than is frequently assumed, and while simplifying abstractions may aid in understanding complex systems, they may result in unrealistic inferences.

An exploration of research approaches to property-related problems can be useful as an aid in understanding current research and, perhaps more importantly, in improving future research efforts. The property research workshop was held in order to enable scholars engaged in property research to exchange ideas and gain new insights and skills. The participants included members of the Land Use Subcommittee, of the Northeast Resource Economics Committee, and of the Interregional Resource Economics Committee, which are sponsored by the Farm Foundation. The workshop was funded by the Farm Foundation from its budgets for the two committees. The Northeast Regional Center for Rural Development helped facilitate the financing.

The workshop was an outgrowth of the Summer Institute on Property held at Vail, Colorado, in 1971 and its subsequent publication, Perspectives on Property. Its purpose was to build on the results of the summer institute by focusing more directly on research. The Land Use Subcommittee of the Northeast Resource Economics Committee initiated the idea of the workshop when Don Epp was its chairman. The suggestions and ideas of many individuals were considered in planning the workshop, but those of Sidney Ishee, Allan Schmid, and Gene Wunderlich were especially valuable.

The workshop was held at the University of Maine at Orono, June 25-28, 1975. Johannes Delphendahl handled the local arrangements. No formal papers were presented, although two resource persons, Phil Raup and Alan Randall did give oral position statements. These are summarized, along with some of the important issues raised in the discussion periods. Except for the main concepts raised by the resource persons, no attempt has been made to attribute the contributions to the individual participants. Furthermore, the summaries include material from the discussion sessions as well as from the general sessions. During a session conducted by Allan Schmid, research related to property that the participants were doing, had done, or planned to do was discussed. A listing of these topics is given in the appendix to this report.

Structure

The workshop was divided into three areas by subject, with general sessions and smaller group discussions. The agenda was:

I. Institutional Approaches
II. Analytical Approaches*
III. Summary and Conclusions

The first halves of Sessions I and II were general, involving the presentation of position statements, and the discussion of the points varied. The second halves involved division into two smaller subgroups for discussion. Half a day was devoted to a general discussion and round-robin enumeration by the participants of their current and intended research projects involving property. The second half was devoted to a discussion and evaluation of the workshop by a smaller group made up of those who were able to remain an extra half-day.

Prior to the meeting in Maine, a reading list of several articles was sent to all participants to provide a common basis for considering property issues, institutions, and research approaches. The bibliography includes these articles, as well as the additional references that were discussed or that refer to important issues that were raised in the workshop.

Institutional Issues

Philip Raup initiated the workshop with a position statement including ten propositions and a discussion of several research areas in which those propositions could be expected to be important factors affecting property, causing property-related problems, or influencing the solutions to such problems. The propositions, which summarize the common trends in the property area, will be outlined briefly and some of their implications will be discussed, and then the research areas will be listed and explained.

Ten Propositions

Ten propositions were developed by Professor Raup. It should be noted that some are corollaries or subpropositions of others. They are factors that he believed to be of major importance in the use of land; in its related property rights; in other forms of property; and in related developments, especially as they affect the structure and operation of agricultural firms and the agricultural sector. The ten propositions, which are not listed in order of importance, can be stated as follows:

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*The use of the term "analytical" was not meant to imply that institutional approaches are not analytical. Meaningful research on property necessarily involves institutions and, of course, any research involves analysis. Analytical, here, was used to refer to formalized approaches, including but not limited to economic models of traditional neoclassical types, as well as such approaches as simulation, gaming, and programming or other operations research techniques.

1. The corporate form dominates in the economic and social system: we live in a corporate world. A major characteristic of this "world" is the separation of ownership from management and the consequent reordering of priorities because of the relative independence of the managerial class. Profit maximization is less of a goal because of the tendency of the managers to maximize their own utilities (satisfactions) even when they conflict with profit. There may also be conflicts within the corporation, since persons at different levels and/or divisions may not work together; that is, they may have different objectives.

Corporations are complex social organizations and have tended to become more so with increased size, although size alone is not an adequate indication of complexity. Complexity leads to more, and more diverse, objectives. Conglomerates and multinationals also affect the goals and objectives of their respective corporate structures.

A more thorough examination of the individual managerial organization by researches is required, as well as some idea of the individual objectives. The idea is to discover patterns and useful generalizations.

2. An increasing share of the decision-making power is being shifted to the public sector. This applies not only to government, but also to such quasi-public organizations as foundations, which add to the proportion of public-sector decision making. Although foundations are not strictly public, they exist because of the tax structure. In effect they spend tax dollars, but they are not subject to public control. Recent legislation has lessened foundation control but has not negated its effects.

3. The share of public expenditures is becoming an increasingly large proportion of the total national economic activity. The proportion of public expenditures in the United States in relation to total national economic activity is still smaller than in many other western nations, but it is growing. About one-third is government, plus the expenditures of the foundations and other quasi-public organizations.

4. There has been a transformation in the way people share in the national capital gains, from ownership (wealth) to income and/or from production to consumption. For most people the major opportunity for capital gains comes from home ownership. Workers once owned their tools and in that way shared, but except for professionals most workers no longer own their tools. Renting of farmland lessens the ownership role in agriculture, while the decline in small proprietary businesses has lessened it in sectors such as retailing. Franchising, however, has created a new form of property, but one that is difficult to evaluate.

5. New forms of property rights are evolving that replace the functions once performed by real property ownership, expecially for care in old age. Health care is provided by insurance and medicare, while employment security is provided by such methods as tenure, seniority, unemployment insurance, and education. Social security, retirement systems, tenure, medical insurance, medicare, and related plans have lessened the need to save for old age or "a rainy day." Formerly a large share of these savings was in the form of real

property, especially in the farm sector, in which the practice of building an estate meant that farmers lived poorly and died relatively rich. The welfare state reduces the incentive to save or develop an estate at the expense of current consumption. The incentive structure has been transformed, and consequently the behavior of the affected individual also is undergoing a transformation.

6. Traditional property rights have taken on new aspects because they are viewed in biological terms such as territoriality and imprinting. This has affected our understanding of the development of property rights by giving them something other than a social basis. These theories or beliefs have grown out of research in the biological area but have influenced the thinking of social scientists, just as social Darwinism did in an earlier period. An inherent desire for property ownership would lead to entirely different conclusions and policies than would an acquired want.

7. Law has almost universally replaced physical force for enforcing property rights. An important aspect of this development is that people protect their rights through government. Thus, it becomes important to be able to influence government. Voting is only one aspect of this, and other factors, such as campaign contributions, corruption, and lobbying, may be even more important. This concept of property rights can be summarized in the question, Who owns government? Those who can influence government decisions are apt to receive a larger share of the national capital gains.

8. There is an increasing awareness that the property rights system is a variable that affects transaction costs. The property rights system determines the costs of transactions*; it should be considered a variable and not just a given. There seems to be a tendency to want to minimize transaction costs, but this may not always be desirable. The Environmental Protection Act decreased the cost to individuals of obtaining information by requiring impact statements, which increases the transaction costs for a program or projects. Some transaction costs, such as information in the land market, court costs for contract enforcement, and policing of compliance, are necessary.

9. All dollars are not equal in decisions about investment and allocation, because of the tendency to view tax dollars "avoided" as more valuable than other dollars. Some dollars have more weight than others, partly because of their greater certainty.** This is related to the growing public sector, increased public spending, and greater tax burden. Tax avoidance has become

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*Crocker (3) has referred to these as informational, contractual, and policing (ICP) costs.

**This may also be an important factor in the tendency of corporation managers to reward themselves, perhaps at the expense of shareholders, with nonpecuniary benefits. Managers (and owners) are not taxed on indirectly derived income, although it may be as much of an expense to the corporation as the managers' salaries. Since the whole cost is not passed on to the shareholder (only about half, because of the corporate income tax) such forms of indirect remuneration cause less concern than they would if they came completely out of dividends.

important in many decisions, especially investment decisions, since the tax dollar avoided is certain whereas other values are less certain. There is also an apparent satisfaction in winning against the government, and many persons undertake tremendous risks to avoid or lower their federal income taxes.

10. There is an increased awareness that committee decisions are very time consuming and that increased public awareness of, say, land use decisions increases transaction costs. (This is corollary to Proposition 8). Committee decisions are expensive in the use of time, especially, but also in other resources. Land use decisions are not necessarily better or more easily arrived at in socialist than in capitalist countries. It is not easy to hold hearings, obtain expert testimony and witnesses, debate, and reach a consensus or majority opinion. The objective is to reach "better" decisions, but better decisions are not automatically assured.

Research Areas

The propositions listed in the previous section have important implications for research into various aspects of property rights. Alternatively, research on property problems should consider those developments and their possible effects. The research-related areas listed by Professor Raup were the land market; parcelization through easements; farm corporations, population distribution patterns (suburbanization) caused by the local parcelization of government; change from production to market domination; the effect of the welfare state on the need for an individual estate; and the quantity of resources available--fixed vs. infinite.

The Land Market. The techniques and knowledge needed for specification buying of land are nearly perfected. One of the long-time tenets of the land market has been that buyers should see the land before buying it; many people bought submerged land in Florida in the 1920's because they failed to heed that warning. Such advances as computers and soil classification systems now make specification feasible, although current information and recording systems will need to be improved. There also should be a better-specified set of legal rights. One implication of specification buying is that a futures market could be developed.

One important aspect of recent land-market activity has been a tendency to extend the fifth-amendment-taking provisions to anticipated capital gains; that is, it has been interpreted that preventing these gains by regulating or precluding use changes is a form of taking.* A futures market could mitigate some of the uncertainty in this type of activity.

Easements. Easements are becoming a more common procedure. They result in a parcelization of rights or a horizontal slicing of property rights. Easements developed out of legal provisions for electric and trolley lines, but

*F. Bosselman, D. Callies, and J. Banta,[1] however, have concluded that regulations preventing such gains are not taking and that the fear of such rulings is exaggerated.

today they are of greater importance for pipelines, high-voltage electric lines, and related activities. With mineral developments in the West and gas and oil from Canada, Minnesota has been particularly affected. Companies are buying easements in anticipation of needs and for a competitive advantage. Another area in which easements are being considered is that of development rights. The purchase of easements is being proposed, and used to some extent, in land use control and as a way of preventing the conversion of prime agricultural land to more intensive uses.

There is a parallel between the easement form of parcelization and the "feudal system." Perpetual easements are a way of encumbering the property rights of future generations in a manner analogous to the use of foundations to avoid taxes on inheritance--and provide jobs for heirs--much as the dedication of land to a mosque has allowed Muslims to avoid problems while they retained their rights to most of the income flow, with less danger of seizure by the state. A major problem with easements is the absence of termination clauses. In some cases the use of "general" easements, giving access to the whole property, instead of specific easements has also created problems.

Farm Corporations. A parcelization of ownership rights occurs through incorporation. In the agricultural sector this is complicated because of the Subchapter S corporation, a family type of corporation with less than 10 shareholders that pays no federal corporate income tax, many of which have been formed for inheritance purposes, including the passing of estates with minimized estate and/or gift taxes. However, there has been a large increase in corporate farming that is not related to estates, particularly in the West and Southwest.

In cattle feeding the corporation has been a form of tax shelter: overall, corporate farming appears to pay a smaller share of the gross farmer income as taxes than do "family farms." Large fixed investments in feedlots have changed cattle feeding to the extent that it is more like a motel business: the occupancy rate matters. The feedlot operator is concerned, not with the number of cattle per acre of space (per acre stocking as in the past), but with the number of animals per fixed unit of time (per year). Many feed cattle for others and are paid per unit fed. This has tended to result in greater price fluctuation and perhaps in less short-run quantity fluctuation but is tending to cause more long-run fluctuation.

An important aspect is taxes, and research in the area should consider after-tax effects. Decisions to take losses by maintaining production may be intended to minimize total losses, but they also may be influenced by the taking of tax losses to offset other income. A recent advertisement for cattle feeding stated that the best thing about cattle feeding is making money but that the second best is losing money. This assumes income from other sources, past, present, and future, to use as an offset.

Another example is the construction of apartments, which has led to the practice of depreciating them as rapidly as possible. When most of the tax advantage of this practice, considering recapture, is realized, the apartments are then converted to condominiums. It is the management of capital that seems to matter.

Until recently, traditional economic analysis had not considered the effects taxes have on decisions, especially investment decisions, in which investment credits, rapid write-offs (accelerated depreciation), and other income tax rules are important determinants of the profitability of an investment. After-tax incomes must be considered, as well as the effects of tax law inducements to investment and the use of losses in one business to offset income gains in another, especially where the losses are eventually made up by capital gains, which are taxed at lower rates than the ordinary income of higher-income individuals. Changes in the tax laws, such as a temporary investment credit, may lead to an overexpansion of some capital inputs: these contributed to the rapid expansion of large commercial cattle feedlots in the 1960's.

Parcelization of Rights in Government. The development of suburbs has resulted in "Balkanization" of the tax base, and several public policies have contributed to this and to the problems of the central cities. Highway construction (plus cheap energy) has been a big pump, moving people out of the central cities. A longer distance traveled has been substituted for congestion; in the suburbs there is less congestion but workers must travel further. The outer fringes have benefited from higher land values and the other advantages of growth.

The process has been abetted by public housing policies, by which single-family dwellings have been subsidized in various ways, such as by VA, and FHA loans. This has effectively resulted in income subsidies for suburbanites and has rewarded sprawl. The exemption of the income from municipal bonds from federal income taxes have also contributed to this, since in general, only the suburbs have tended to bond themselves, especially for new schools and other public facilities.

"Postage stamp" pricing for sewer and water hookups has also promoted the development of suburbs and fringe areas. Average-price hookup charges were made, rather than marginal-price charges. Thus extended systems were used, since the cost was equally divided among all users and those at the sparsely settled areas at the ends of the lines paid the same as those near the beginning.

A factor that has contributed to the spread of sprawl has been the resistance of the rural areas to the imposition of land-use controls, which could have regulated and guided their development into less undesirable patterns. This resistance is partly caused by a strong belief that a landowner should be free to use and dispose of the land without interference. Another cause of the landowners'resistance is that many of them anticipate selling land for development at high prices. Land use controls are viewed as reducing the chances for such gains.

Market Domination. The marketing side has come to dominate business. The economies of scale that matter today are not those related to production but those that result from determining or influencing the market by advertising and other uses of the mass media. This has affected the structure of and incentives for property rights of individuals. The traditional structure has been augmented by a market right, but the ways of achieving gain have also altered. The traditional rights are (1) use rights (now a lesser source

of gain); (2) transfer rights (the right to sell); and (3) the right to capital gains, either from one's own effort or from social effort. Market rights now occupy a place between use rights and transfer rights. Today the way to "get rich" is not so much from one's own efforts as by capturing the gain from the social effort.

In marketing, chain stores and others are now attempting to gain all the benefits from their activities; that is, they are now attempting to internalize as many of the benefits as possible. A shopping center developer no longer conducts a traditional market study in which the objective is to find a market large enough to justify a center; instead the developer seeks to find an area of land that is large enough to allow the developer to obtain all the benefits. The Disney organization was very successful with Disneyland in California, but the surrounding area also benefited, perhaps in total more than Disney. In Florida the organization attempted to get enough land to assure internalization of the major share of all development.* Parking, hotels, food, golf, and all other services are contained within the area. Furthermore, the Disney organization purchased considerable quantities of land outside, to enable it to benefit from future gains.

Welfare State. The welfare state has made it less worthwhile to leave an estate. Social security, health insurance, and unemployment benefits have all made the need for an estate, or assets, less important. The emphasis is switching to income flow. Farmers, for example, want to enjoy the benefits of the affluent society now and not wait until they retire or, more likely, provide it for their heirs.

The "old" system had a postponed reward (capital gains, an estate) as the work incentive. Under this system food was produced cheaply because it led to good husbandry. It is much more expensive to give the reward in the current income flow. This can help explain the low agricultural productivity in socialist countries, which do not provide these incentives. It also leads to the speculation that good husbandry of rural resources can be expected to decline.

Resource Availability. We are not in a zero-sum game. There is a tendency to view the earth's resources as a fixed stock, but technology changes the size of the stock by changing relative efficiency. Human resources, the human factor in the equation, can be viewed as infinite, and thus the other resources also can be viewed that way and not as fixed or finite.** Such an assumption or consideration is in direct conflict with all the world's religions, which are based on scarcity.

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*This helps to explain the low occupancy and low use of most of the activities by other developments in the Orlando area, despite the success of Walt Disney World.

**By application of the process of limits, it might be noted that as exploitation of human capability $\rightarrow \infty$, resource services flow $\rightarrow X$. It need not be assumed that X is infinite, even though it might be much larger than current estimates.

Technological changes and inventions constantly expand the resource base by making previously unusable things into useful resources--for instance, the development of aluminum refining techniques converted bauxite into a useful mineral--or by making more efficient use of an existing resource. Human activities then "invent" new resources, which result in new property rights; but the social system frequently lags in developing institutions for governing the use and exchange of the new rights, which then are grafted onto the existing structure. Thus Montana ranchers (or West Virginia farmers) may be able to sell their land for strip mines for many times its previous market value, but the consequent destruction of the structure of their communities will not be included in the compensation to the landowner. Society may or may not gain on the basis of this supposed new social and economic benefit.

Analytical Approaches

Alan Randall was the resource person for the second general session. His basic approach is derived from the property-rights literature of recent years, which he has described as a marriage of traditional institutional economics and neoclassical economics, that is, with marginal analysis. Traditional institutionalists had used exhaustive taxonomy while the neoclassics assumed institutions fixed and that profit maximization goals motivated firms. The property rights literature has been summarized by E. Furubotn and S. Pejovich and by Randall. (4, 11)

Property Rights Approach. In typical property rights approaches, the institutional structures and alternatives are described in considerable detail and then neoclassical economics principles are applied to determine behavior and to learn whether the results are "efficient." These approaches have largely been Benthamitic: avoid pain and seek pleasure. Profit maximization has not been assumed; instead, the studies focus on indiviudals in organizations and their incentive structures, in which utility maximization is assumed. However, utility functions have not been fleshed out; that is, they still cannot be quantified. This approach attempts to develop equations by means of which the neoclassical method of marginal analysis can be applied.

The basic model of the property rights approach can be summarized as a deductive system of the following form: (1) Define the incentive structure. (2) Make behavioral assumptions. (3) Reach conclusions. This approach is an extension of market logic to areas that are thought to be non-market. This has been shown to result in "efficient" solutions, but only where an efficient solution has been defined as the market solution.* For "efficient"

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* It should be noted that there is an "efficient" solution for each possible initial distribution of rights (incomes and resources and their control). Thus, no overall efficient solution is possible except the one for the given initial distribution. Nothing in the approach says what the initial distribution should be; in other words, the correctness of the existing distribution is assumed.

solutions to obtain, there must be a system of nonattenuated rights in which (1) the system of rights is completely specified; (2) all benefits are exclusive (that is, they accrue to the actor); and (3) the rights are enforceable and enforced. This assumes efficiency in a transaction-cost-free world.

Many of the applications in property rights shift from positive to normative without warning. Typically the works are thought to be positive, to describe what is. For an example, see the exchange between Buchannon and Samuels in the Journal of Economic Issues (2). The efficiency conclusions, however, are normative: they say what should be and what is needed to attain it.

A major contribution of the property-rights approach has been its focus on transactions costs, with its frequent conclusion that these should be minimized. It should be noted, however, that transactions are not in themselves a source of inefficiency. Transactions services are valuable, and indeed, much of industrial activity is in transactions, employing those who work as secretaries or in personnel, payroll, sales, and advertising departments. However, there may be a tendency for the transactions industry to be inefficient. For instance, transactions in the land market can be inefficient, and also the process of enforcement of property rights in a situation where many are harmed, each by a small amount, by one or a few who are economically powerful.

Research Models. Agricultural economics may be underinvested in theorizing; in other words, the ability to do applied work may have gotten ahead of conceptualization. An approach to research is the deductive model: (1) develop a framework of incentives (specified verbally or as quantities); (2) develop a model to specify the interactions (for a simulation example see (9)); (3) put in starting values for the variables; (4) feed in assumptions or axioms about the behavior of the actors (which may be part of the structure); (5) run the model and read out the results on behavior, output, and other values. For positive results researchers try to use rules and behavior as they exist. For normative results, rules about what is desired are used.*

A deductive model can be useful from at least two standpoints: that of the conclusions reached about expected behavior, meaning the values or directions of the variables involved, and that of the derivation of testable hypotheses about results. The results will often point out at least the expected, or desirable, directions of change, while in many cases the actual is so far from the optimal that the directional changes of the wanted adjustments are as much as can be expected.

Much research suffers from a desire for quick answers and/or a surfeit of data obtained without an adequate theoretical or other conceptual framework. The investment of more time in conceptualizing a problem will generally

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*Obtaining criteria for normative analysis is always a problem. A consensus is difficult in areas in which profit maximization or related goals are not generally accepted. One approach is to show the results under alternative criteria, while in some situations legislators or others may prescribe the goals.

result in a much better research output and will tend to conserve limited research resources. Deductive work is an essential first step in the development of testable hypotheses and a framework for empirical analysis.

From a deductive model the research analyst can move to an empirical extension by modeling the physical, price, and institutional framework. Then the institutions can be changed to test the effects of various institutional arrangements.

Other approaches include conventional statistical or regression models, the time series and cross-sectional models, in which institutions or institutional changes can be entered as dummy variables. They are most often compared on a before-and-after basis using time series, but cross sectional-analyses are also used, in which observations can be obtained for situations with different institutional frameworks, such as an aggregate function including both corporate and family farms.

Hypothesis Testing. In research the formation of hypotheses is easy but testing of the hypothesis may be difficult. There is the standard problem of devising a test that will prove some statement by demonstrating its truth, while if it is not true it cannot be proven. In empirical research the problem revolves around the development of testable hypotheses, that is, hypotheses that are stated in such a way that empirical tests can be applied. The approach in the workshop was to use some actual hypotheses to demonstrate some general types of hypotheses and the types of testing needed, with an emphasis on comparing the easier and simpler with the more difficult and more complex, as is shown in the examples that follow:

1. Use-value taxation of real property is a good idea.

This hypothesis is not testable, since the value term "good" is used, which means different things to different people. However, by defining the term "good," that is, reformulating the statement, a testable hypothesis can be derived as shown in Hypothesis 1A.

1A. Use-value taxation of real property will reduce the rate of conversion of land to more intensive uses (or reduce the rate of decrease in land devoted to agricultural uses).

Some problems with the hypothesis still remain, and it will be necessary to define more specifically some of the terms, such as conversion, and intensive use, but basically it is a testable statement. Since use-value assessments are being used in several states, data can be obtained on rates of conversion, before and after, along with other factors that might affect conversion, and the appropriate tests can be made to see if the conversion rate changed. It must, however be noted that the 30 or so states have about that many different approaches to use-value assessment, as well as widely different economic and social factors, such as population, zoning, and ownership. Thus different results might be found in California, compared with Maryland or Ohio.

2. The Federal Surface Mining Bill, if enacted, would not reduce employment.

This is of a different magnitude, since it applies to a hypothetical condition--one that might be in effect but that has not yet been used. While some tests could be made in individual states that have regulated surface mining, it would be difficult to generalize to national employment. However, an economic engineering approach that calculated supply and demand factors on a before-and-after basis could be used to test for the effects. This would be data-demanding but could result in usable estimates. Indirect, multiplier, effects would need to be considered, as would the employment created by reclamation activities. It might be noted that at current prices and profit levels, few if any surface mine operations would be forced out by the imposition of reclamation costs, which have been estimated at $.10 per ton.

3. Superboards are an inefficient form of organization of management for the provision of community services.

This hypothesis is more difficult to test than either of the previous two, in which the traditional tools of economic analysis can be applied in rather straightforward ways. The cost of providing services can be determined relatively easily, but the "output" poses several problems, including measurement and the mix of services. The mix has been determined largely by the political process, but it tends to become fixed or institutionalized, with many local governing bodies or boards involved and with vested interests. A helpful procedure is to find out what people want in terms of services and to estimate the costs under various types of structures, including superboards. The researcher can then make comparisons. But what about decisions that the superboards make? Will they be "better"? Will citizen access be improved? How will the mix be changed? The research worker can study relative situations, structures, and so on and build up a pool of information to help make predictions. Theory of public choice can be helpful, and the economist can find help in other social science disciplines, such as political science, sociology, and social psychology.

The hypotheses presented demonstrated an increasing range of difficulty. For the first hypothesis, meaningful testing could be done because it concerned something that was already in existence, about which data could be obtained and used to make the test. The other two involved changes in the institutional framework that have been proposed but not yet put into effect. The analysis is needed to help decide if they are "desirable" changes. Partial knowledge about the industry and its social contributions is available or can be gathered, but some of it must be synthesized. The second hypothesis can be tested by a typical economic engineering study on the probable effects of the proposed regulations. The third hypothesis is more difficult, although data on wants and costs can be collected. However, economists, as pure economists, have no framework for viewing the complex social aspects of that type of situation. There have been programs in sociology and social psychology to help flesh out the assumptions of utility maximization, that is, to improve on the behavioral assumptions needed to realistically approach the problem, and these studies can be used to increase the knowledge needed for decision making.

Concluding Statement

The Property Research Workshop clearly demonstrated that property, property rights, and some related matters are important problem areas and that a considerable amount of research is being devoted to such problems. It appears, however, that considerably more effort in the area is justified, although many research workers will need to sharpen their tools, analytical frameworks as well as research techniques, before they will be able to make meaningful progress on many of the problems.

Technological, social, political, and institutional changes have all affected property rights in a complex set of interactions. That the institutional structure has lagged in adjustment seems apparent from the problems that have developed and from the flood of recent laws and proposals for dealing with land use, with the environment, and with energy. Institutional changes are made, frequently without a realization of the impact these will have on the other variables or of how individuals will be affected, how these individuals will react, and how they will consequently affect the change. The actual results usually are not adequately foreseen and often differ from the expected.

The changes and trends are being monitored by social scientists, politicians, and others, as was demonstrated in the session of the workshop led by Phillip Raup.* The implications of trends and of lumpy (one-time) changes in institutions or in the other variables are also revealed by the analyses of events and by the projections or forecasts that are based on the observations and analyses. Proposals abound for dealing with the consequential stresses and problems. Many are partial solutions that create more, or different, problems, whether they be dissatisfactions, inequities, unforeseen secondary or tertiary impacts, or simply responses contrary to what has been predicted.

Evaluating by research the past institutional changes that affect property rights is relatively easy for the typical economist with his or her given set of analytical tools. Partial equilibrium analyses, statistical measurements and estimations, case studies, and other approaches can be used to determine what impacts the changes have had and whether these are of the types desired. Data collection and analysis is the primary approach for evaluating past changes, a not always easy task although conceptually very simple.

It is, however, in the realm of proposed changes in the structure of institutions that the economist or other research scientist must make a major contribution. Analysis of past changes is an essential function, especially if the changes are not functioning as intended, but it would seem more desirable to predict as accurately as possible all the effects of alternative proposals for dealing with a problem, to provide the policymaking process (that is, the groups concerned) with as much information as possible. Evaluating proposals requires approaches different from those of examining the results of past

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*This has been a useful and important part of the total effort, since it has helped to locate problem areas as well as to point to the underlying causes and forces affecting the problems that are observed or perceived by the affected persons.

actions; there are no data generated, and hence a historical approach is not possible.

Data, of course, are available. Perhaps something similar has been used elsewhere; if so, the change is not a completely new approach. Applying institutional changes under different circumstances will probably have different effects, which means the analysis has to go beyond mere historical data. It will be necessary to determine how conditions, attitudes, etc., vary in the area in which the procedure is to be adopted and to predict the effects of these on the functioning of the proposed change. An additional method involves "design" alterations to make the structure, successful elsewhere, more conformable to the conditions for which it is to be copied.

In evaluating any proposal, including the adaption described in the previous paragraph, the economist must first turn to his view of the world, his theoretical structure. Often the knowledge of how an economy or economic sector functions is enough for deducing the potential major effects and can enable the competent analyst to make judgments about the efficacy of some proposals, especially those that can be rejected because of major flaws in their logic, the ones that clearly will not work.

The conceptualization phase, or theoretical and deductive examination, is probably the most important, but it is frequently the most under-utilized. The ability to collect and process data by computer has led to a tendency for empirical work to take precedence over theorizing. Consequently, much of the empirical work lacks an adequate structure and therefore is not as useful as it could be.

The process of conceptualization will not only tend to separate out the more apt approaches from the less apt, but will also enable the economist to develop testable hypotheses and construct appropriate models, as pointed out in the second part of the workshop. The hypotheses generated may be relatively easily tested by the use of standard economics research procedures. However, many proposed institutional changes affect the complex interrelationships among people, firms, and governments regarding which traditional economics procedures are not adequate. Theories and concepts from other social science areas and from interdisciplinary research are needed to adequately predict the effects of many of the complex changes proposed or to design a more adequate set of institutions.

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Appendix: Property Research of Workshop Participants

One of the sessions of the workshop, conducted by Professor Allan Schmid, was devoted to a brief discussion by each of the participants on research currently being done or planned for the near future. The following is a listing of the projects by the participants, without attribution to the individuals.

1. Regional planning bodies. What they do, how boundaries are determined, rural-urban relationships, and methods determining board membership.

2. Distribution of educational benefits among children: Variance between measures of achievement, how teachers affect differences (leveling or greater spread), distant size as related to integration.

3. Supply of public services through contracting: When should a government unit contract with another to supply services such as garbage pickup and police and fire protection. How government units bargain with each other.

4. How institutions affect people: Whether different institutions produce different "kinds" of people (or merely different responses). How property rights systems affect people's willingness to undertake collective action. Why some individuals are willing to undertake high transaction costs to do things for the community.

5. Land market studies (several persons): Land values and the factors affecting them. Ownership, patterns, concentrations, changes, and absenteeism. The effects of policies such as limiting urban development on land value and uses.

6. Easements, especially right-of-way types: Types and conditions, terminations, purposes and conflicts, effects on surfaces, owners' use.

7. Controlling urban growth (limiting sprawl): Zoning, utilities availability, housing finance. Effect of rapid depreciation on types of housing. Effect of sewer moratoriums and related services.

8. Use-value assessment: Effect on viability of agriculture and on tax burdens. Changes in rates of land conversion.

9. The operation of public utilities: The rules they operate under. Expenses, investments. Testing the Evert-Johnson model, which hypothesizes overinvestment in utilities.

10. Irrigation systems in developing countries: Effects of trying to transfer U. S. technology into different institutional and social frameworks.

11. Statewide land use planning: Effects of a recent law requiring such planning in Oregon, where each county must establish a plan.

12. Relationship of farm assets to farm income: The proportions of real estate assets held by different income classes. Concentration of broad-based ownership and its effect on land values.

13. Residential location decisions: How people decide where to live, once the location of employment is determined.

14. Zoning and alternatives to traditional zoning: Effects of traditional zoning on land use and land use changes. Alternatives such as compensatory zoning and impact zoning.

15. Rural water-supply systems: Means of supplying. Regional versus local systems. Costs.

16. Effects of a new county government system: Change (in Arkansas) from a single elected county administration (judge) to an elected board. Examination, especially of effects in counties with two county seats.

17. Land records and title: Test of a modernized system side by side with the old method (in Virginia).

18. Local government as affected by others: Effects of higher-level decisions on costs and operation of local governments. Relatedly, the effects of extending costs-increasing regulations, such as the minimum wage, to low-cost rural areas where cost of living is also low. The effects of cost of planning on small units, companies and individuals as well as local governments.

19. Concepts of property: Variation in concepts. Property as information. Creative concepts. Keeping and changing information.

20. Agricultural districts: Adoption, usefulness, effects.

21. Development easements: Purchase by government to keep land in agriculture. Costs, effects, financing alternatives.

22. Rural planning: Plan development, implementation, and evaluation.

23. Water-use planning: Effects of lakeshore land use planning on water quality. Comprehensive water-use planning.

24. Benefit-cost analysis: How to improve, how to include "social" benefits.

25. Transaction costs: Magnitude, ways to affect. Criteria for determining if "good: or "bad." Desirability of full information (sunshine laws).

26. Seasonal homes: Effects on property values, taxes, services.

27. Gas, oil, and coal rights: Easements, sales, relative bargaining power, regulations.

28. Real property taxation: Assessments of land as affected by sales value, use, location, size, and other factors. Equitability and procedures.

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