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CHAPMAN TRIPP

AN ECONOMIC APPROACH TO PROPERTY VALUE

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(AN OPEN LECTURE)

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FOREWORD

By Byron O'Keefe, Author of *The Legal Concept and Principles of Land Value*

It was in March 1966, when I first came to the Auckland University campus, that I met Squire Speedy in the old senior common room in "Pembridge". Thus began a lengthy academic and a professional association which makes me happy to write this Foreword to his latest monograph.

What strikes me about the writings of Squire Speedy is the apparent flow and artlessness of his style. But, over the years, I have come to know the meticulous care and perspicuity with which he treats his difficult subject matter, and to admire the integrity of his scholarship and his gift for elucidating principles hitherto seen "as in a glass darkly". There is a ring of Cartesian methodology about the way Squire Speedy frequently demonstrates the falsity of an accepted position after committing his thoughts to writing, and we are left that much more enlightened, and our perception enlarged by the experience of studying him. One does not read Speedy: one studies him.

Byron O'Keefe
Auckland, 1981

PREFACE

This work formed the basis of an Open Lecture given at the School of Architecture, University of Auckland in the summer of 1980. New Zealand legal concepts of value of land have so often and for so long been directed towards taxing and purely social legislation, that sight has often been lost of their underlying legal and economic concepts. This work shows that the value of land and property is tinged with ethical, philosophical as well as legal and economic overtones. For example the Aristotelian concept of the 'just price' is very valid within the New Zealand context. Much of our land value legislation has centred on the artificial distinction between land and its improvements. Indeed at times it became almost an obsession. This artificial distinction is quite contrary to the legal concept of land and fixtures and the economics of the market place. Its existence is one of those inheritances from early colonial times.

The works of the great economic philosophers who spoke of the fundamental truths about land are often relevant, but need adapting to current legal and economic realities. Some of these ideas have been developed and new ones have been identified to show that land has special characteristics which are economically unique. While economic principles and techniques have been used, it is significant that economists, as such, have abandoned the subjective concept of value for the impersonal concept of cost.

Much wealth as well as business and legal activity centres around dealings and financing of land. It is hoped that this work will make a small contribution to research in this area, and that it will help all those who have a direct and indirect interest in land and property investment to understand the true nature of real property values.

Auckland
March 1981

Squire L. Speedy

I

ECONOMIC CONCEPTS OF VALUE

The quest for a satisfactory objective concept of value has proven to be as elusive as finding the edge of the horizon. It has exercised some of the greatest minds of the Western intellectual world since the days of the ancient philosophers. Its elusiveness stems from the very concept of value whose deceptive apparent simplicity is tinged with economic, philosophical, ethical, and psychological overtones. Political and economic philosophers have long wrestled with subjective criteria—the very essence of social sciences—rather than establishing purely objective standards possible and expected in the physical sciences and the commercial world.

Aristotle (384-322 B.C.), regarded value as a matter of justice in dealings between man and man. Even Adam Smith (1723-1790), the greatest eighteenth-century economist, who devoted considerable attention to the word 'value', admitted that its meaning was still in some degree obscure as the subject in its own nature is extremely abstracted, as did Augustin Cournot, the first systematic mathematical economist. Even when the twenty-three centuries of thought and economists' technique and rationale are stripped of their jargon, it would be difficult to find a more simple, direct, or in practical terms a better ethical approach than his concept of the 'just price'. But as this concept is still merely subjective, it begs the question, for if justice is to be the key-stone of value, we must still seek to find the forces or factors which establish a just value.

The Aristotelian doctrine of the just price arises from the need for money to be used as a medium of exchange to equate equality in exchange by providing one standard for all based on demand. Money exists as a convention of current custom or 'currency' in which its value may be exchanged or destroyed. By reducing the exchange of goods to money equivalent, there is a form of proportion which also has the advantage of equating the losses suffered by each party to the exchange. Justice is seen in this context to mean that when commodities are to be apportioned, not too much nor too little is to be given to any one party to the exchange. A just price in ethical terms is one which is neither too high nor too low. Of course this does not offer an objective scientific solution to the problem of value.

Philosophers of the ancient world besides Aristotle including Plato, Xenophon, Cicero, Senica, and Marcus Aurelius regarded value as an abstract quality inherent in an object. Although this attribute of value was untenable to economists, the idea is still prevalent today.

The Romans had no theory of value and the relation between price and value was vague and undefined. They recognised that value was generally related to desire and they had a general conception of esteem and an equivalence between two things expressed by the price. It was not until after the invention of money that the distinction became possible, but the Romans used the concepts inter-

changeably like economists today. In their legal problem of an award for damages, some guide to a fair price was necessary. The jurist Paulus supported Pedius who excluded affection and utility to individuals as prices had a common validity or function. The Romans were not dominated by ethical conceptions nor that prices would accord with principles of justice, as the law permitted almost absolute freedom of contract.

It was the ethic of the just price which became the safeguard against extortion during the intense economic activity of the middle ages when the Church dominated almost all thinking about economic ideas as it had done in the physical sciences. The just price was an important concept of the theologian St. Thomas Aquinas (1225-1274). Although it had been considerably developed and related to labour and other costs of production, that basis was also unacceptable to economists as a direct approach to the problem of value.

Gradually the Church recognised the practice of commerce that in the absence of fraud a thing is worth what it commonly sells for. The ecclesiastical jurist Scaccia summed up the valuation and ethical principles in his definition:

> "Just price is that price which is commonly sought in respect of any object by one who is not in want, and is equal to what can be obtained from one not in want, who is intelligent and knows the condition of the object and has full age and sound mind."[1]

The Christian theologians and the ecclesiastical jurists were forced to consider economic matters if only to establish rules for the guidance of human conduct, rather than to explain economic phenomena. It was an art resting on theology and not a science. The doctrine of the just price has remained a strong moral and ethical force. Even if it is not an economic force; nevertheless it does influence the practical pricing of many commodities and rents today, and it underlies the current foundation for compensation for land compulsorily acquired.[2]

The modern ethical approach to value can also be seen in the economic philosophy of W.S. Jevons (1835-1882), whose insistence on the importance of utility in the explanation of value was well regarded. He pointed out that 'value' has three meanings:

Value in use or total utility;
Value in esteem, or final degree of utility; and
Value in terms of purchasing power, or the ratio of exchange.[3]

It was the latter meaning which concerns pricing and value in the current sense of its use. Jevons supported Adam Smith and (to the English) the obscure French economists, Le Trosne and Condillac. He denied the then popular labour theory of value that claimed that commodities exchange against each other relative to their labour content. His mathematical work on marginal utility, or what he called the 'final degree' of utility as a basis of the ratio for the exchange of commodities, rejected the total utility theories of the leading classical economists of the nineteenth century, Adam Smith, Ricardo (1772-1823),

1 Tractatus de commerciis et cambiis, Rome, 1618; Translated by Luigi Cossa, *An Introduction to the Study of Political Economy,* London, 1893, p.151.
2 See for example the use of 'fair' market value in *Valuer-General* v *Manning* [1952] NZLR 701; [1952] GLR 478; LVCB 156.
3 W. Stanley Jevons *The Theory of Political Economy,* (Harmondsworth, Penguin Books Ltd. 1970), (1st published 1871), p.130.

Malthus (1766-1834), and J.S. Mill (1806-1873). He also considered that value in exchange was the only scientific term to be strictly and entirely correct, and he adopted Condillac's definition of value: "Qu'elle consiste dan le rapport d'exchange entre telle chose et telle autre."[4] (That which consists in the relationship of exchange between one matter or thing and another.)

When Adam Smith, in 1776 posed the paradox of value in asking why it was that water which was so useful but had a low price, while diamonds are unnecessary yet had a high price, he failed to find an adequate answer. Later economists were more able to explain the concept in terms of marginal utility and not total utility.

What has now become known in elementary economics as the 'law' of diminishing marginal utility was explained by Jevons over a hundred years ago. A person procures such quantities of commodities that the final degrees of utility of any pair of commodities vary inversely as the ratios of exchange of the commodities. Nowadays this is expressed simply by saying that marginal utilities are proportional to prices, or that the marginal utility of a commodity is the addition to total utility (or satisfaction) occasioned by the last unit of the commodity in our possession.

A number of economists in the late eighteenth and early nineteenth centuries discussed the concept of utility, and by 1870 most economists were presenting the marginal utility of value, particularly the Austrian, Carl Menger (1840-1921), the Frenchman who lived in Switzerland, Leon Walras (1834-1910), and in England after Jevons, the great economist, Alfred Marshall (1842-1924), each working independently.

With Marshall's influential treatise published in 1890[5] the search for an invariant measure of value, or what Adam Smith had called the 'notional' price was finally abandoned by economists, J.S. Mill who had considered the search for an invariant measure of value was misguided, nevertheless had unwisely claimed in 1848 that the theory of value was complete.[6] Abandoned too was the neoclassical approach to value typified by Jevons' assertion that utility and demand considerations alone explained prices. In Marshall's powerful work was the intellectual force with which Western economists rejected the classical labour-based theories of value, as well as the Marxian theories which attributed value entirely to labour and denied any contribution by capital or land, which was claimed arose only through exploitation. Marshall's simple allegory of likening the forces of supply and demand to a pair of scissors, neither blade of which can be said to cut the paper, clarified centuries of intellectual and philosophical reasoning. He produced a purely economic explanation which appropriately followed the removal of the study from moral philosophy to that of an independent scientific social science.

Marshall's approach to the theory of value was not completely original, but his impressive work became the mainstream of current tradition of the theory of supply and demand which now eschews the word 'value' as it evolved into the

4 Quoted by Jevons *ibid,* p 130 from *Le Commerce et le Gouvernement,* adapted from Le Trosne, De L'Intérêt social, 1777.

5 Alfred Marshall, *Principles of Economics,* London, Macmillan & Co. Ltd. (1st published 1890).

6 J.S. Mill, *Principles of Political Economy,* W.J. Ashley ed. (London, Longmans, Green & Co., 1926), p.436.

scientifically objective concept of equilibrium 'price'. This can be likened to the cutting point of Marshall's scissors of supply and demand. The twentieth century economists' general theory of value tends to seek relative price relationships. Equilibrium price is a more sophisticated version of Adam Smith's notional price. It is that price towards which the market could naturally tend to gravitate when all tendencies of the market are worked out. The market is said to be in equilibrium when the price-ratio is fixed at that level which equates demand and supply. This will occur if every person is acting in such a way as to reach his most preferred position, subject to the opportunities open to him, with the implication that the actions of different persons trading must be consistent. A stable equilibrium position is one in which any slight movement away from the equilibrium would set up forces tending to restore equilibrium.[7]

It is the study of economic forces which makes up the economists' modern theory of value, but now no longer centring around a philosophical concept, but a mathematically neutral equilibrium point. Joan Robinson of Cambridge considers the metaphor of the equilibrium to be treacherous, as true equilibrium like scales in balance implies regular sales at steady prices, a situation which might well be only temporary. She refers to a state of perfect tranquility when the economy develops in a smooth regular manner, when the prices ruling today are those which were expected to rule today. This corresponds to a balance which has settled down.[8] As difficult as it is to find equilibrium as she describes in the commodity and service markets, it is rarely, if ever obtainable in the land and property market because of land's unique physical and economic characteristics.

Joan Robinson regards 'value' as just a word. As Humpty Dumpty said to Alice: "Words mean what I want them to mean, nothing more nor less". And like Alice, we might well ask the question of economists: "Can you make words mean so many different things?".

Economists are now no longer particularly concerned with the distinction between price and value. For their purpose the terms are now synonymous unless a special difference in meaning is called for. Such is not the position in the land market where valuers and the courts have established a clear distinction between the two terms. Theoretical economists have tended to move away from being concerned with individual prices of micro-economics to the major broad issues of the economy as a whole. They often see their role as independent social scientists, part of whose work is to see how prices are determined, but not to pass judgement on them—they leave that to politicians and moral philosophers.

The collapse of the economic price structure in the 1930's led, through Keynes (1883-1946),[9] to the development of the systematic study of unemployment and the larger forces in the economy, now known as macro-economics. What is needed is another Keynes to deal with the problems of accelerating world price levels in inflation, even with high levels of unemploy-

7 J.R. Hicks, *Value and Capital: An Inquiry into some Fundamental Principles of Economic Theory,* (London, Oxford University Press, 2nd ed. 1946), p.58-62.

8 Joan Robinson, *The Accumulation of Capital,* 3rd ed. 1969, (London, Macmillan & Co. Ltd.) p.59.

9 J.M. Keynes, *General Theory of Employment Interest and Money,* (London, Macmillan & Co. Ltd., 1936).

ment. The notion of a stationary equilibrium appears now to belong to a past era.

A rising price level now seems to be the norm in this dynamic world of accelerated changes, rather than a theoretical stationary equilibrium, which existed throughout several generations with a few but important exceptions. Nevertheless throughout economic history the general trend has been the upward movement of prices (and values).

If the modern economists admit that there is no single fundamental explanation of value what role can economics play. A key to the answer can be seen in the Cambridge approach when the power of the laws of supply and demand was forcefully stated by H.D. Henderson:

> "Guilds, Governments and Soviets may come and go. But under them all and if need be, in spite of them all, the profound adjustments of supply and demand will work themselves out and work themselves out again for so long as the lot of man is darkened by the curse of Adam".[10]

Demand is the main force in determining marginal costs, not because costs determine value, but because output is pushed until the price covers that marginal cost.

In the long run costs do influence production, but so also do prices of other factors of production which make up those costs. In a free society (or indeed in any other society), economics is essentially a matter of allocation of scarce economic resources. Each factor of production has the opportunity of being used in some alternative way as its market value, hence opportunity costs become a prime consideration not only on the supply side but also on its influence on demand. The opportunity cost theory of value has replaced earlier cost approaches to value, mainly because of the influence of demand and the consequential recognition that all economic resources have a demand in alternative uses.

An important breakthrough in theory came in the early nineteen-thirties on both sides of the Atlantic when Joan Robinson,[11] and E.H. Chamberlain[12] of Harvard independently published works dealing with conditions less than perfectly competitive.

If we return to a philosophical approach for a moment, perhaps we can see a solution to the economists' current evasion of the question of value. It is in the sense of a just value in exchange that modern society is seeking solutions. The quest to find the answer as to what a commodity is really worth can be seen as the wrong question. The concept of intrinsic worth or absolute value must be seen to be useless, misleading and based on a myth; as senseless as believing that absolute, objective beauty is a sensible or possible concept.[13]. The (English) economists' term 'theory of value' is merely a traditional misnomer for

10 H.D. Henderson, *Supply and Demand,* (London, Nisbet & Co. Ltd., Rev. ed. 1932) (First ed. 1921), p.17.

11 *The Economics of Imperfect Competition,* (London, Macmillan & Co. Ltd., 1st ed. 1933).

12 *The Theory of Monopolistic Competition,* (Cambridge, Harvard University Press, 1933).

13 E.R. Emmet, *Learning to Philosophize,* (Harmondsworth, Penguin Books Ltd. 1968). (First published by Longmans, 1964), pp.96-97.

the analysis of a single commodity considered separately, so is now generally ignored.

Land and improved property have received comparatively little theoretical attention by economists since the days of the early classical economists. Alfred Marshall considered that the property of land which gives command over a certain part of the earth's surface is the ultimate cause of the distinction which all writers and economists are compelled to make between land and other things. He further considered that it was the foundation of much that is interesting and most difficult in economics.

More recently, economists have tended to recognise by implication that the concepts and analytical techniques of micro-economic analysis have application (with appropriate modification) to land. Most work that has been done on the application of land theories has been for valuation and appraisal purposes; pragmatic with the analysis of empirical evidence required where answers to practical problems are to be found, often with limited research evidence available, and rule-of-thumb techniques have been predominant. Nevertheless, these methods are often backed by lesser known and understood erudite theories derived from economics, finance, accounting and mathematics.

The mastery of valuation like economics requires the accumulation of experience and knowledge and a growth of personal maturity and wisdom throughout the greater part of one's life. Particularly in economics and statistics there is the danger of being over-awed by mathematical intellectual techniques for their own sake. But a work which completely avoids the use of mathematics when it should be used, will lack precision in thought which only mathematics can give. Yet in seeking a practical application of 'value', there is the need to avoid the human weakness of being over-impressed with sophisticated techniques, as against understanding the truths of the real world.

II

CLASSICAL ECONOMISTS' VIEW OF LAND

The classical and neo-classical economists of the nineteenth century, principally Smith, Ricardo and Jevons, viewed land from the point of view of agricultural rent being derived by the surplus economic value primarily attributable to variations in the natural fertility of the soil and its relative scarcity and location. Adam Smith asserted that high or low rents were the effect of high or low wages and profit causing high or low prices. The first discovery of the theory of rent is attributed to James Anderson[1] who showed in 1777 that it is not rent of land which determines the price of produce, but the price of produce which determines the rent of land. As the expense of cultivating the least fertile soil is greater than the most fertile soil, it follows that if the produce is sold at the same price the profit on the most fertile soil must be greater than that of the others. Eventually, the expense of cultivating the inferior soils will equal the value of the whole produce. Jevons developed a mathematical approach with a graphical illustration which forms the basis of the theory of rent found in economic text books even after a hundred years.

Over a hundred years earlier, Sir William Petty considered rent as a surplus averaged over a cycle of good and lean years. He also recognised that great demand for corn led to a higher price and consequently a higher rent and price of land.[2]

Malthus developed the theory now known as the 'law' of diminishing (marginal) returns, almost simultaneously with other classical economists, but principally Ricardo. It was a by-product of his population and rent theories. He defined the rent of land as:

> "that portion of the value of the whole produce [revenue] which remains to the owner of the land, after all the outgoings to its cultivation [development], of whatever kind, have been paid, [but not interest on debt], including the profits of the capital employed, estimated according to the usual and ordinary rate of profits [opportunity cost rate of return] of agricultural stock at the time being".[3]

Malthus disagreed with Adam Smith and other economists of the day over the nature of rent, as he considered rent to be like a commodity monopoly, a matter of the excess price above the costs of production. He said that applying the term monopoly to the rent of the land without noting its 'radical peculiarities',

1 W. Stanley Jevons *The Theory of Political Economy,* (Harmondsworth, Penguin Books Ltd., 1970), (1st published 1871), p.217.

2 *A Treatise of Taxes & Contributions,* (1662) in *A.E. Munro, Early Economic Thought: Selections from Economic Literature prior to Adam Smith* (Cambridge, Harvard University Press, 1930), pp.214 and 217.

3 Thomas Robert Malthus, "On the Rent of Land", from *Principles of Political Economy,* 2nd ed. (1836) (New York, Reprints of Economic Classics, Augustus M. Kelley, 1968), p.137.

did not distinguish it from other commodities.

While Malthus acknowledged the strong similarity of rent to a natural monopoly, he thought that perhaps the term 'partial monopoly' would be fairer. Scarcity alone was not sufficient to produce the effect he had observed. He considered that rent arose from three main causes, namely; the quality or fertility of the earth; demand for its products; and comparative scarcity, but he also recognised the importance of the situation. The strongest element was fertility because regardless of demand it was the 'power' of its natural fertility which produced the surplus yielding a rent. No degree of monopoly, that is no possible increase in demand, can essentially alter the different powers of land to yield a rent proportional to its fertility.

The 'law' of diminishing returns in its simplest form is that the application of increments of a factor of production to any other factor which is held constant, will sooner or later result in diminished increments of output. Jevons attributes the best account of the 'law' to J.S. Mills although he objected to his unscientific language. He considered that economists should use mathematics which had been found convenient in other sciences. In contrast J.K. Galbraith chides those who manipulate symbols as being impractical.[4]

It was natural that there was an agrarian approach to economics in a predominantly rural society. Richard Cantillon said: "Land is the Source or Matter from whence all wealth is Produced".[5] A.R.J. Turgot similarly observed: "Land is always the first and sole source of all riches".[6]

The modern economists still have an economic rent theory which has changed little over the last two centuries. In terms of economic history and philosophy it was stressed by the classical English economists such as Smith, Ricardo and Malthus because landlords formed a distinct and important social and economic class. The general populace did not own the freehold but held land in various forms of lesser tenure. The prospects of freehold land offered at Wakefield's 'sufficient price' was a spur to settlement of several colonies including New Zealand.

It was unfortunate that the economists borrowed the term 'economic rent' from commerce where it means the sum which a hirer (including tenant or lessee) pays for the hire of any property including chattels. It is a contractual obligation under the terms of the hiring contract such as tenancy agreement or deed of lease. Over the years there has grown a degree of confusion or misunderstanding because of the purely restricted technical meaning that economists have given to their concept of economic rent. To the economist, economic rent is the surplus earned by any factor of production (or economic resource), over and above the minimum earnings or price necessary to keep it in its existing use. The idea is derived from the notion that as free gifts of nature, such as land already existing, they do not have a supply price and will continue to exist whatever they earn. In this sense the whole of earnings from land can be

4 J.K. Galbraith, *The New Industrial State,* (Middlesex, Penguin Books Ltd., 2nd ed. 1974), p.392.

5 R. Cantillon, *Essai sur la Nature du Commerce en Général* (c. 1730-1734), (London, Macmillan & Co. Ltd., for the Royal Economic Society 1931) p.31; La terre est la source où la matière d'ou l'on tire la Richesse.

6 Réflexions sur la formation et la distribution des richesses (1776) in Munro, *op cit,* p.353.

considered economic rent or surplus. But where such relatively scarce resource has an alternative use, economic rent is limited to the surplus above the amount it earns in its next best alternative use or opportunity cost. This concept can also apply to capital and labour wherever human talent can be considered to earn economic rent for any surplus above the next best earnings in another occupation.

Economic rent will apply to any economic good whose supply is relatively fixed and therefore scarce. If any economic resource is in perfectly elastic supply it cannot earn economic rent as the price cannot rise above its transfer earnings or price. The transfer price of a scarce resource is that price which will prevent it being transferred to another use. The marginal transfer price is that price which is just sufficient to prevent the economic resource being transferred to the next best alternative use. Commercial rent may be partly transferred earnings and partly economic rent, depending on the price of its alternative use, assuming land has no frictional limitations. As David Low's famous First World War cartoon said: "If you know of a better 'ole go to it!"

The surplus above opportunity cost of the marginal unit of transference can exist for a particular economic resource even when the overall supply is perfectly elastic. Likewise while the total quantity of land is fixed (omitting as insignificant any increase through reclamation, accretion or earthquake), and land within a given locality is limited, land for any use not within a given locality is not limited. The supply of land for such a purpose will have a convex elastic supply curve whose shape will depend on the economic feasibility of adapting of existing uses, and the supply of comparable land.

The economic rent theory is not considered appropriate to improvements to land because they are not free gifts of nature and are not perfect substitutes for land itself, and amongst other economic characteristics suffer from the 'law' of diminishing returns.

When the demand for land in a particular locality exceeds its supply as it cannot increase, it benefits from earning a higher demand which produces an economic surplus or economic rent and value. In this sense, economic rent is akin to the commercial premium known as goodwill.

The 'law' of diminishing returns or more accurately the law of diminishing marginal returns, is an economic phenomenon known since earliest times, and although alluded to by early classical economists, the first lucid formulation of the principle was by the Physiocrat, A.R.J. Turgot (1727-1781) in *Observations sur la memoire de M. de Saint-Peravy* (c. 1768):

> "Beyond this point, if the advances are increased further, the produce will increase also, but less, and always less and less until, the fecundity of the earth being exhausted, and art unable to add anything, additional advances will add nothing to the produce."

This so-called law, together with the initial law of increasing returns is one of the underlying principles behind the limitations of land development, and the foundation of urban land economics and indeed the limitations on the practical concept of market value.

III

PROPERTY DEVELOPMENT CAPITAL

Once investment capital has been irrevocably committed to a site, it becomes part of that site in physical, legal and economic form. It was not without good reason that over the centuries the common law has recognised the physical fact that fixtures to land become part of the land.[1] The technical term 'agercavic'[2] capital is given here to the concept of capital which is fixed or 'sunk' into land to distinguish it from other forms of 'free' capital which are physically and legally mobile.

Prior to being invested in the improvements or the development of land, liquid capital is freely transferable. It can be withdrawn from the bank in cash (or its equivalent) and placed in an infinite variety of new investments which offer the investor a minimum acceptable rate of return consistent with the risk. This may be in the general locality, but could virtually be within any part of the free world. Once free capital is transferred to physical assets in land it is like an irreversible metamorphic process brought about by the catalystic action of human ingenuity. There is a fusing of that capital with the land by an irreversible process. Thus, this agercavic characteristic of land significantly distinguishes land from other forms of investment capital. Once committed, agercavic capital becomes helpless to move or to be directly withdrawn[3] as free capital.

When capital is irrevocably committed in land, it is sunk because the cost of the resources are then unaffected by any alternative choices. The principal choice open to the investor is either to enjoy periodic annual benefits from his legal rights to the property, or to release the net present value of all future rights and potentialities by disposing of them in such a way as to maximise their current value. Any division between capital spent on one part or another has no economic analytical value and is meaningless except in the long-run stationary equilibrium,[4] or in decision-making. Accordingly, the whole of the annual and capital value is derived from the property as a whole.

Agercavic capital, like capital sunk into other investments, refers to the cost of an economic resource already acquired whose past cost is irrelevant to future

1 Quicquid plantatur solo, solo cedit; from the Latin maxim: whatever is affixed to the soil belongs to the soil. This principle applies today with a few minor exceptions. See S.L. Speedy, *Property Investment*: Inflation Ed, (Wellington, Butterworth, 1980), p.75.

2 L ager, land: cavus, sunken.

3 H.B. Dorau and A.G. Hinman, *Urban Land Economics,* (New York, The Macmillan Company, 1928), p.165.

4 William Alonso, *Location and Land Use: Towards a General Theory of Land Rent,* (Cambridge, Harvard University Press, 1964), p.12. Richard U. Ratcliff, *Real Estate Analysis,* (New York, McGraw-Hill Book Company Inc; 1961), p.140. Ralph Turvey, *The Economics of Real Property: An Analysis of Property Values and Patterns of Use,* (London, Allen & Unwin, 1957), p.47-8.

decisions concerning its best use or its disposition once it has been committed. In investment economics, bygones are bygones; what has happened in the past becomes history and no current or future decision can affect what has already happened. Using past costs as a guide is totally different from using them in the future. As decisions now can only affect future happenings, it follows that applying the principle of marginality, the past cost is irrelevant,[5] because it has passed and is over and cannot be undone. It is the current or anticipated future marginal costs which should be used for investment criteria once the property has been developed, any further action becomes an incremental decision and then the past expenditure is a sunk, or what we may now call in respect of land, an agercavic cost.

The placing of a mortgage on a property to release financial capital does not economically release agercavic capital. Mortgage capital merely transfers financial funds still leaving the legal and financial obligation with the current owner of the title. The mortgagor is given various legal rights of recovery of his debt and other rights including the power of sale of that property. The structure of equities involved in financing a property is one which is economically distinct from the property itself. There is often a confusion between the dichotomy of economics of a site and the economics relating to the financial structure of the ownership of that site.

It follows that once free capital is spent on improvements to a site it becomes a sunk cost, whose annual or capital value is derived from the transformation of that capital into geophoric[6] output. In incremental decisions, it is the marginal revenue (or output in value) and marginal costs which are crucial for investment expenditure decisions. Once development improvements have been made to a site, in the short term it has no further incremental capital cost which affects the immediate production of revenue or its value. This is not to say that before making the investment, opportunity (or other) costs should not be considered. The effective time for decision is before the capital is irrevocably committed, not afterwards. Once the investment has been made it cannot be reversed. For this reason great care is needed to ensure (as far as it is possible to do so), that any future costs and revenues will be in line with pre-acquisition estimates. Also, that marginal revenues will exceed pre-acquisition estimates of marginal costs. Considering the matter afterwards will be too late. Nevertheless, up to the point of optimum development, extra capital will 'pay'.

Merely because an investor spends capital on a property investment in a site, there is no guarantee that he will ever get his money back, or that he will get a return comparable with what he could have got elsewhere. As Lord Keynes[7] put it so well:

> ". . . human decisions affecting the future whether personal or political or economic cannot depend on strict mathematical expectations, since the basis for making such calculations does not exist. . ."

However, he added that we must calculate where we can. Forecasting,

5 A.J. Merrett and A. Sykes, *The Finance and Analysis of Capital Projects,* (London, Longmans, Green & Co., Ltd. 1963), p.277.

6 Gk, ge earth; phora rent. Potential value from a site to which agercavic capital can be applied.

7 J.M. Keynes, *The General Theory of Employment, Interest and Money,* (London, Macmillan & Company Ltd., 1936), pp.162-3.

although difficult and subject to error, is necessary for any investment decision. Prediction at the conscious or intuitive level lies at the heart of sound judgement concerning any proposed investment.[8]

Weighed against the negative risk of loss is positive risk of opportunity for a higher return than the minimum acceptable cut-off rate. The terms 'negative' and 'positive' risk are introduced specifically to draw attention to the fact that in property development decisions should not centre solely around the risk of loss, rather than the possibility of gain (positive risk) must also be considered. The success of the venture will depend on the release of geophoric value in the site.

Because most property investment ventures succeed in boom times, it tends to lull investors into a false sense of security or to blind them to the risks and fundamental issues involved. The crash of a well-known land project seems necessary every now and then to teach the harsh lessons of economic reality. The failure of such site investments illustrates the concepts that cost does not necessarily equal value, and that value comes from the release of latent geophoric potential. However, a crash relating to the poor financial structure and excessively high gearing ratios of outside debt to owners' equity should be distinguished from a crash involving the failure of the property itself.

An example of a complete failure of a property arose when the Hauraki Whaling Company failed to catch whales. This led to the abandonment of the site which had been especially developed on a remote location 100 kilometres from Auckland on Great Barrier Island. This illustrates several principles. The lack of revenue led to bankruptcy, which led to the developed site having no value in its existing use. Past cost of development was indeed a sunk cost and completely irrelevant to its value, which could only be released by a forced sale. Because the property failed to recover its cost, other investors are not likely to consider another such site investment which is not likely to produce an opportunity cost rate of return. As the shareholders discovered, wishing does not make things so. They would have been prepared to accept any revenue from the site rather than no revenue and loss. In this illustration the next best alternative, or opportunity cost was also virtually nil.

8 Joel Dean, "Measuring Investment of Capital", in Ezra Soloman, Ed., *The Management of Corporate Capital* (London, The Free Press of Glencoe division of Collier-Macmillan Ltd. 1959), p.21 at 29.

IV
DEVELOPED PROPERTY VALUE

The technical term 'geophoric'[1] is introduced to identify the periodic (annual) actual or potential revenue derivable from a site to which agercavic capital[2] has been, or can be applied. Such geophoric rent is usually the potential contractual rent less direct operating costs or expenses, but specifically excluding two controversial accounting and valuation items: depreciation on wasting assets and interest on borrowed capital. Also excluded is rent revenue from any chattels included in the gross contractual rent.

Operating costs to be deducted could include insurance, normal repairs and maintenance, local authority rates, and labour costs associated with direct operations of the property. Geophoric rent is generally equivalent to the cash flow of accounting net profit plus depreciation of a property which has no outside capital to service, and before provision is made for income tax.

Reference is made to potential contractual rent because frequently contractual rent is not at the current market rate. It will be fixed at specific intervals, so it is usually below potential market rental value except at times of renewal.

Depreciation is not a deduction because of the economic process of discounting future flows of geophoric revenue to reach the net present geophoric value. Depreciation is not ignored, it is merely indirectly taken into consideration in the value capitalisation process involved with discounted cash flows.[3]

Potential rent may differ from contractual rent because of non-economic matters such as custom, legal, technical or social reasons. Where a site is owner-occupied or left vacant, a potential rent may be imputed for the geophoric theory. Such imputed rent may be the opportunity cost of not leasing or letting at the market rent, or it might partly or wholly consist of the discounted net present annual increment in value.

Income tax is not directly deducted. There are several reasons for this. Income tax is a direct personal tax depending on the taxpayer's personal family circumstances and other income. Equity ownership of a property may be in the form of a sole owner, a partnership, syndicate, trust, private property-owning company, public company, insurance company, Maori trustee or even an exempt owner. While income tax does not directly affect the value of a property, it is indirectly taken into consideration in the market rate of return, rate of capitalisation, or what is economically a discount rate of future cash flows.

1 See Fig. 1.
2 *Ibid.* See S.L. Speedy, *Compensation for Land Taken and Severed,* (Auckland, Legal Research Foundation Inc.), 1978, pp.11-13 for previous use of these terms and technique.
3 See S.L. Speedy, *Property Investment:* Inflation Ed (Wellington, Butterworth 1980), particularly Ch. 11, for a detailed account of the evaluation of property investment income by discounted cash flow methods.

The essence of the geophoric value concept is the actual or the expected cash flow earnings (or its equivalent in ownership benefits), independent of the capital structure and the personal legal ownership of the property. There is an important dichotomy between the economics of a property as such and the financial economics of the capital structure of the ownership of the property. True geophoric value is derived from agercavic capital applied to the property without taking into account the added risk and gearing or leverage considerations involved with non-equity capital.

Capitalised Value

The relationship between annual revenue and capital value is as old as the right to sell income-producing assets. Sir William Petty (1662), recognised such relationship:

> "Since a landed property yielding a given revenue is simply the equivalent of a sum of value equal to a certain multiple of its revenue, it follows that any sum of values is the equivalent of a property yielding a revenue equal to a definite fraction of this sum . . ."

He also related the fee simple value to natural generations, and refers to its value being twenty-one times the rent, or what he called the *usus fractus per annum.*

> "Wherefore I pitch the number of years purchase, that any land is naturally worth, to be the ordinary extent of three such persons their lives."

However, he did acknowledge that some land "by reason of some capital honour, pleasures, privilege or jurisdiction annexed unto them," would be worth more, and some would be worth less.[4] Turgot (1766) related the price of [rural] land to the yield from the annual revenue of so many sheep, called the 'penny in the price of land.' Land is sold for the *twentieth penny,* the thirtieth penny, etc., when twenty, thirty, etc., times its revenue is paid for it. It is also evident that this price or *penny* must vary according to the greater or smaller number of people who wish to sell or buy land, just as the price of all other merchandise varies according to the different relation between supply and demand.[5]

Marshall defined the relationship of years' purchase to value in terms of discounting:

> "For the value of the capital already invested in improved land or erecting a building; in making a railway or a machine is the aggregate discounted value of its estimated future net incomes [or quasi-rents]; and if its prospective income-yielding power should diminish, its value would fall accordingly and would be the capitalised value of that smaller income after allowing for depreciation."[6]

However, the modern economist's technique used in discounted cash flow analysis excludes depreciation directly.

The economic process of discounting the expected future cash flows at a dis-

4 *Treatise of Taxes and Contributions,* (1662).

5 Anne Robert Jacques Turgot, *Réflexions sur la formation et la distribution des richesses,* (Munro, p.355).

6 Alfred Marshall, *Principles of Economics,* (London, Macmillan & Co. Ltd), 8th ed., 1920 (1st published 1890), p.593.

count rate to equate the net present value of the asset is used to derive the (net present) geophoric value from geophoric rent.

$$Gv = \sum_{i=1}^{i=n} \frac{Gr}{(1 \times r)^i} \qquad (1)$$

Where: Gv = Geophoric (Capital) Value, which also equals (net present) geophoric value

Gr = Geophoric rent

$\sum$ = Standard mathematical summation symbol, sigma.

i = 1 (Beneath sigma), indicates that Gr is the first of the numbers, and

i = n The expected period of geophoric rent of n years.

r = Minimum acceptable market rate of return expected on the class of investment.

The above formula can be simplified in the same manner as the rule of thumb capitalism formula:

$$Gv = Gr \times \frac{100}{R} \qquad (2)$$

Where: Gv = Geophoric value

Gr = Geophoric rent

R = Market capitalisation rate of return for the property.

Geophoric Value

Assume a given parcel of land which is legally, financially and physically capable of receiving incremental units of agercavic capital to any required amount. Assume also that the geophoric rent produced by each marginal or incremental unit of geophoric capital will follow the typical pattern of increasing returns, then eventually diminishing returns will set in until ultimately nil or even negative marginal returns may eventuate.

In Figure 1, a given quantity of land, referred to as the site, is applied with increments of agercavic capital (Ka) measured on the OX axis such that there are ultimately no unexploitable opportunities. Assume further that each Ka unit is expended in such a way as to maximise (Go) output. Let the OY axis measure the geophoric output (Go), resulting from each marginal Ka unit. Go can represent either the geophoric rent (Gr) or geophoric value (Gv). Let OR represent the minimum acceptable market rate of return and the capitalisation rate, and let Km equal the cost of obtaining mortgage finance.

The marginal revenue curve of geophoric output will vary with each property, but typically it could start in a negative position representing the pre-development carrying costs and the need for a certain minimum capital outlay before fixed outgoings are covered.

It is assumed that initially the curve will show increasing returns which will give way inevitably to diminishing returns, until nil or even negative returns would result.

In accordance with economic principles, geophoric output will be maximised when marginal cost equals marginal revenue. The question must now be considered as to what 'cost' is the correct marginal cost which should be applied to maximise geophoric value. While there has been a polemic[7] as to whether marginal cost should be related to cost of borrowing funds, returns to investors or an admixture, or the cost of diverting funds from other expenditure, the economic answer must be conceptionally related to opportunity cost.[8] In property matters the market rate of return on investments which is also the capitalisation rate, is the 'market' opportunity cost of agercavic capital. The principle is clear: it will not pay a landowner to continue to apply units of agercavic capital to a site if the geophoric return is not less than he can obtain on the market elsewhere.

In Fig. 1, OR represents the market rate of return expected on agercavic capital. The curve is shown for simplicity as a straight line. Optimum geophoric value is reached when OQ quantity of agercavic capital is applied to the site, represented by the area B C D E Q.

Should the site be developed less than to the optimum quantity of agercavic capital at OQ, say to OQ', which is shown as the maximum marginal return, geophoric output will not be optimised as the area B C D F Q' is less than the area B C D E Q. It would pay the investor to continue to invest beyond OQ' to OQ as each incremental unit of agercavic capital will produce a geophoric output greater in value than to cost.

If OKm equals the cost of borrowing capital, which is less than OR, the market rate of return, the question to be considered is whether agercavic capital should not be continued to OQ''? While in applying pure economic theory the answer must be: 'no', there could be circumstances which modify this answer to meet practical property problems relating to short-term and long-term investment policies.

In the short-term of an investor's time horizon, the optimum development must stop at OQ to maximise geophoric value. But, for long-term investors, particularly users rather than rentiers, it could 'pay' to continue to develop the site to OQ'', meeting the geophoric loss shown by the area EGH against the profit the firm would make from using the extra development. This now ceases to be a property investment decision alone, but rather a firm's decision. However, if the property was sold immediately, by definition the geophoric value would be limited to the optimum agercavic output area B C D E Q.

It follows that, where the property owner does not intend to sell (at least in the short run), he could continue to develop the particular site as a matter of non-geophoric policy so long as his personal marginal cost of capital is covered. Experience has shown that any error in this type of decision will be probably

7 Cf Franco Modigliani and Merton H. Miller, 'The Cost of Capital, Corporate Finance and the Theory of Investment' in Ezra Solomon, Ed. *The Management of Corporate Capital* (London, The Free Press of Glencoe division of Collier-Macmillan Ltd. 1959), p. 150.

8 Donald E. Farrar and John R. Meyer, *Managerial Economics,* (Englewood Cliffs, Prentice-Hall, Inc. 1970), p.63.

remedied in the long run by the growth of values through inflation. The effect of inflation will be to push the geophoric output curve at the optimum point E to E' to the right, with optimum agercavic capital input potential rising to Q''.

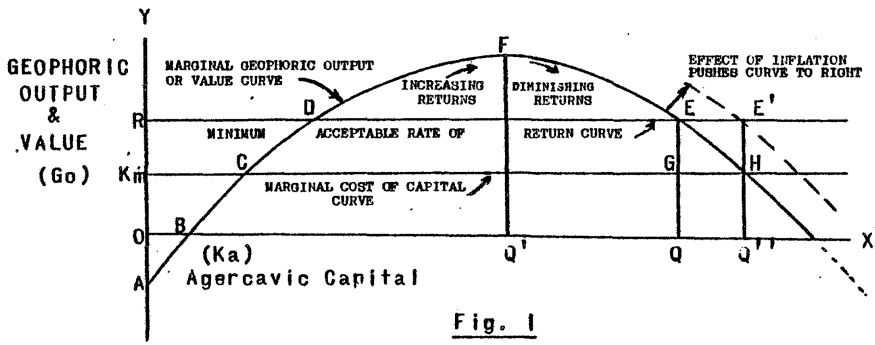

Fig. 1

Geophoric site value is the maximum which an investor can afford to pay for a site and still expect to receive not less than the cut-off rate of return on his expected total investment of agercavic capital over the period of the investment time-horizon. The cut-off rate of return is equivalent to the market capitalisation rate for the class of investment. The geophoric site value is equivalent to the capitalised geophoric value less the opportunity cost of development.

The relationships between the various variables can be expressed as follows:

$$Gv = Ka + Gsv \quad (3)$$

Where

Ka = Agercavic capital applied to the site (excluding any payment for the site itself).

Gsv = Geophoric site value.

It follows that:

$$Ka = Gv - Gav \quad (4)$$

and

$$Gav = Gv - Ka \quad (5)$$

as

$$Gv = \sum_{i=1}^{i=n} \frac{Gr}{(1+r)^i} \quad (1)$$

Substituting:

$$Gsv = \sum_{i=1}^{i=n} \frac{Gr}{(1+r)^i} - Ka \quad (6)$$

Thus, the point emerges which is a complete antithesis of valuation practice. As agercavic capital is cost determined, geophoric site value is a residual of geophoric value less agercavic capital. Geophoric site value is a resultant not independently determined. This approach is a complete opposite to traditional valuation principles and practice where it is held that value of improvements are the added value which capital expenditure gives to the land.

This apparent paradoxical thesis can be reconciled. The market consists of buyers and sellers who each seek to maximise their satisfactions. The price paid, or estimated market value, may not exactly correspond with the geophoric site value. It may be below, equal to or above that value. If the buyers and sellers are fully informed of the economic potentialities of the site the two values would exactly correspond. Geophoric site value can be viewed as the value of the site which market value tends to gravitate; it thus becomes an equilibrium price-value which would meet all the criteria that an ideal sale would also meet. This statement assumes that both the buyer and seller have full knowledge of potentialities of the site and market prices, which of course in practice is rarely, if ever, achieved. The capitalisation rates of return should take into account not only the cost of borrowing and the opportunity cost but also any extra allowance for risk and special management costs. Geophoric value can equal what Ralph Turvey has called the 'ceiling' price,[9] and also what the Federal Housing Administration calls the 'warranted' price. This is the price for a property for long-term use or investment provided the buyer is well informed, acting intelligently, voluntarily and without necessity.[10]

Valuers and valuation law approach the matter of valuation from practical and legal points of view based on comparable evidence rather than from fundamental principles. For this reason alone, it is important that the geophoric principles of derivation of land values should be understood. There is also the practical application of such theory when there is little or no alternative direct evidence available. Treating undeveloped sites as residual value in preference to comparative empirical evidence was the basis behind *Loblaw*'s case in Canada.[11]

9 *The Economics of Real Property,* (London, George Allen & Unwin Ltd. 1956), p.8.
10 *Underwriting Manual* (Washington, National Housing Agency, Federal Housing Administration, 1947), 1005(1).
11 *Municipality of Metropolitan Toronto v. Loblaw Groceterias Co. Ltd.* (1971) 21 DLR (3d).

V

DEVELOPED PROPERTY MARKET CHARACTERISTICS

The prime characteristic of land which uniquely distinguishes it from any other economic good or investment is its fixed geographical location from which its subsidiary characteristics are derived. The technical term 'geostasis'[1] is given to those exogenous and autogenous locational attributes of a site which directly or indirectly contribute to its geophoric product and hence value.

Since the earliest times positive identification of possessed lands was an important political force in the beginnings of settlement and civilisation of societies. The early Egyptians found it necessary to use mathematically based survey techniques to re-identify fields on the flood-plains after the Nile had receded. William I's Domesday Survey required the correct identification of each estate, which is an essential feature of any land tenure system. In New Zealand, Maori tribal lands were clearly identifiable, often by using natural features as boundaries, but where necessary large stones or even carved posts were used. The current land registration system is founded on the Torrens title system. It provides for an accurate, safe and speedy system of title identification derived from an accurate geodesic based formal survey system, mathematically inter-connected with the geographical lines of latitude and longitude. It may also be coupled when necessary with height references to mean high water sea level or other similar datum point.

The accurate locational identification is a prerequisite to any definition of a site, and to distinguish it from any other site. It is one part of what Ricardo called 'the original and indestructible powers of the soil'.[2] A site is defined for this work as an identifiable land surface area whose horizontal dimensions are geographically identifiable, and whose vertical dimensions extend above and below ground level for a usable distance, unless by voluntary or compulsory reasons its bounds have been limited absolutely or conditionally. Locational identification begets unique sites. Indeed, a site is 'location' before it can be anything else. Theoretically, an unlimited site extends from the centre of the earth to the surface and beyond to infinity, but physical and statutory restrictions limit this theoretical concept to one of practical, usable dimensions.

With the advent of separate ownership of strata of land, the need for spacial identification has been given statutory recognition.[3] A site includes any spacial unit which is an identifiable volume of space which can be possessed and when required given a transferable legal title.

Each site does not exist in isolation. It is part of the earth's surface or at least a stratum of that surface, and is attached to adjoining land. Boundaries are imaginary lines which provide the line of division between two contiguous sites.

1 Gk: ge, earth; stasis, position.
2 *Principles of Political Economy and Taxation,* (First published 1817) Harmondsworth, Penguin Books Ltd. 1971, p.91.
3 Unit Titles Act 1972.

Its given and unalterable geographical position determines its distance from and relative global relationship with all other sites. Its permanent position cannot be moved by nature nor to meet the desires of man. Even if the physical soil should move, by an earthquake or landslide, the site still remains in its original geographical location. The practical implications of gradual erosion and accretion of sites abounding natural water, has necessitated the law to be adapted to accommodate the circumstances, thus altering the original site.

Geophoric location,[4] or geostasis, is much more than the mere legal or geographical identification of a site. It will include all autonomous and exogenous influences which contribute to or influence the geophoric output of a site. A site is subject to many and varied influences from both natural and human origins. Some are obvious but others are subtle. Some influences are sudden, others gently cumulative. Some of the spheres of influence will fall under the study classification of geography, geology, and other environmental topics. Or they can be classified under social, aesthetical, economic or some such scientific or technological subjects. For geophoric location, nomenclature is not important; what is important is the fact that while the site is fixed, the geophoric influences are dynamic. They aggregate the sum total of desirable and undesirable attributes of a site which generate effective human demand for the site. Human appreciation of a site, as culminated in its demand, is multi-dimensional; physical, social, aesthetical and time-dimensional.

Exogenous influences are of growing importance. Environmental and ecological changes are often changing at an alarming rate. Positive exogenous influences will benefit a site. The visual sphere of influence might well encompass a grove of trees, or even a single specimen on the near horizon. Or, the sphere of visual influence might reach to the sea, a lake, river or mountain on the far horizon. Man-made structures and man-created social conditions in a neighbourhood materially contribute to locational environment and hence to geophoric output. Demographic changes and variations in community services makes a site an integral part of a living dynamic community of man and nature.

The term situs, or economic location refers to those economic attributes of a site which distinguish one from another. The concept of geostasis embraces situs qualities, but also incorporates those tangible and intangible physical, aesthetical, psychological and even philosophical influences on man's rapport with a given site as a fraction of planet earth. While many of these factors may not be directly taken into account in the alleged impersonal market, nevertheless they may surface at the critical decision-making time in a property market which directly and indirectly affects that market; whether that decision is to buy or not to buy; or to sell or not to sell.

One very significant exogenous influence is that of transport. If it can be said that a site is nothing until identified, its geophoric value can be said to be a function of its location, related to transport and people. Variations in the transportation system expressed in a time-cost dimension will alter the relative geophoric location of a site and hence its geophoric output. The opening of a road, railway, airport or bridge may completely alter the geophoric location of a site.

Over three hundred years ago, Sir William Petty expressed the importance of

4 Locational factors affecting the potential value of a site to which capital can be applied.

location in land values. "Hence it comes to pass, that Lands intrinsically alike near populous places, . . . will not onely [sic] yield more Rent . . ., but also more years purchase than in remote places. . . ."[5]

Unlike other forms of investment, land is immobile and physically immoveable. It receives benefits from its location, and may contribute to its surroundings for good or ill. When exogenous influences change, a site cannot stand still in the geophoric sense, but it may be slow to adjust to those changing conditions. Once developed, sites tend to be passive in this respect, but occasionally by the ingenuity and enterprise of man, sweeping changes may be brought about and even a localised new geophoric location created. Redevelopment of decadent or blighted area are such examples. Even the creation of a new use in an undeveloped locality may have a similar effect. The benefit of the investment of agercavic capital in one site may be 'inherited' by neighbouring sites. A similar effect is well known when public money is spent on the provision of amenities in the district. Private expenditure is probably even more important.

Not all exogenous influences are positive. Negative influences can and do contribute to a reduction in geophoric value. The gradual decline of a district, or a time-cost benefit to one property may detrimentally affect another. The misuse of a property may tarnish the reputation of the neighbourhood and reduce its geophoric output.

Heterogeneity of Sites

Merely by the act of identification, each site is unique if only in respect of its geographical location. This quality of heterogeneity renders invalid the unmodified application of the neo-classical laws of supply and demand as depicted in their most elementary form by Marshall's scissors, or even in their more sophisticated form of Joan Robinson's theory of imperfect competition. Even if the distinguishing site characteristics of heterogeneity and immobility are put on one side, the problem of market analysis of heterogeneous sites still remains.

Geophoric analysis amongst other considerations, will therefore require the prior analysis of the heterogeneous site characteristics relating to both quantity and quality of the site and also of its fused improvements. Any analysis which fails to take these factors into consideration will be deficient. The problem can be likened in over-simplified analogy to trying to compare the relative prices of detergents which are sold in a variety of packages, forms and strengths and in a variety of locations.

Geophoric Supply

Supply in economics has three meanings. It can be the total stock of goods in existence, which when applied to land could mean the total quantity of land. Or it could refer to the total supply of current production or output of the particular commodity, such as the supply of new sites. However, the meaning generally used concerns the supply of that commodity sold at the market price. With sites, this will include the supply of both new sites and such of the existing ones

5 *A Treatise of Taxes & Contributions,* (1662) in A.E. Munro, *Early Economic Thought: Selections from Economic Literature prior to Adam Smith* (Cambridge, Harvard University Press, 1930), p.217.

that are offered and sold. The potential supply which can influence the market price will include the number of sites genuinely placed on the market for sale, even if not sold.

The quantity of land in the world can be said to be fixed and virtually unalterable, as any changes brought about by man-made efforts of reclamation or drainage, or by natural process of accretion, erosion or earthquakes represent a statistically insignificant proportion of the whole. Because land covers one third of the world's surface, there is currently ample for man's overall needs, but because land is immobile, an ample supply in one locality cannot be moved to supply the needs in another. Hence, land becomes a scarce resource in all localities where the quantity required for use exceeds the quantity available. Near substitutes may be available. The geophoric quantity of land required in a defined locality is mainly a function of the density of population with purchasing power, as well as its utility and productivity. As a consequence, lack of land mobility results in great scarcities and useless abundances, which as yet do not provide usable substitutes.

One traditional method of overcoming a scarcity of land, after it was more intensely used or developed, was for people to move to the new places and new lands. The colonisation of the new worlds in the eighteenth and nineteenth centuries bears witness to this propensity. Yet even in the new lands, it was soon discovered that after the best pastures and woodlands were settled, the problem of scarcity in any one location was part of the natural order of settlement. Shortages of usable land in over-populated countries is one of the great causes of poverty and actual or potential political turmoil. In contrast, in the wealthier countries, land shortages create great wealth. The importance of an adequate supply of land has been evidenced throughout military history, where various pretexts have been used for acquiring additional territory. Even New Zealand's short history is regrettably scarred with land acquisition by military force, which culminated in the compulsory taking of fertile Maori 'rebel' land without compensation.[6]

Given that the amount of land is fixed and immobile, a distinction should be made between the quantity of land and the supply of land. The quantity of land is the total area of land in a given defined territorial area, such as a country, province, city, neighbourhood, or contained within the bounds of an identifiable site. Alternatively, it may be considered in respect of land classified for any particular study or use, such as in the divisions of the physical, social or environmental sciences, or for some statutory, statistical or other analysis.

In the study of geophoric output, economic forces predominate, therefore, the supply of land must be related to the economic forces of the market. The geophoric meaning of supply concerns those sites whose owners are willing and able to sell at market price. For this purpose, it is not sufficient to simply assume that all owners are prepared to sell at the going market price, because this is not realistic. People hold land for an infinite number of reasons. In a sense, continuing to own a property is like being an end consumer, while an owner wishing to sell can be likened to a producer. One of the major obstacles to the theory of land markets and values, stems around this point. Owners are legally assumed

6 See New Zealand Settlement Act 1863, ss. 4 & 5.

to be willing sellers for the purpose of determining value, but because only a small proportion are in fact so willing, the supply is restricted for price determination and hence value. There is an important difference between land in this respect and other commodities whose supply is not limited, and can be readily adjusted to market demand in accordance with the inexorable laws of supply and demand. In sharp contrast, the bulk of the supply of sites is already in existence and in use, with the total annual production of new sites forming a relatively small proportion of the total quantity of land, but an important proportion of the total supply of sites. Nevertheless the supply of new sites and existing ones on the market is both a resultant and a regulating force of geophoric value, like a reservoir which maintains both pressure and a continuous reserve supply.

Geophoric Markets

The meaning of market has expanded from the original town market place where people traditionally came to buy and sell their wares, to an imaginary place expanded and adapted to modern communication systems. The geophoric theory cannot accept the neo-classical conditions. Joan Robinson,[7] considered that Marshall's description of a market as a region in which the same price rules for the same commodity after allowance for the cost of transport, was not of the real world. With heterogeneous sites, a geophoric market is far removed from any assumption of a homogeneous commodity and perfect competition.

A geophoric market is essentially any buying and selling system of geophoric sites, either on a time basis, such as a tenancy or lease, or permanently, which is comparable as to conditions of sale, size, quality, location and time, and in which the price for one such site will influence the price of any other site. Comparability of one site with another is a matter of degree. In general, even some sites which are not reasonable substitutes may nevertheless be comparable on the market. It follows that from the uniqueness of sites, a market can be narrowed down to that of a particular property or buyer. And in fact, this can be the position, where the property has unusual features such as its location, development potential or the actual quality of existing improvements. Normally, a particular seller's market will include all those other sites which offer to the prospective buyers, reasonable substitutes or alternative choices. In a similar way a particular buyer's market would include all those properties at comparable prices which offer reasonable substitutes or alternative choices. The degree of monopolistic competition will depend on one hand on the number of comparable alternative substitutes, and on the other hand on the number of potential buyers at comparable prices.

Geopoly

Pure monopoly is difficult to define precisely. Literally, a monopolist is a sole seller, in which case all site owners must be monopolists, as they are able to fix whatever price they think they can get. In the normal sense, a monopolist controls the supply of a commodity or service for which there is no close substitute. There is an important difference between this ordinary meaning and its application to land. Sites are unique, fixed in location and geographically identifiable,

7 *The Economics of Imperfect Competition,* (London, Macmillan & Co. Ltd. 1st Ed. 1933), p.88.

and are unlike normal monopolistically produced commodities which are capable of expansion in production to such an extent that by controlling price or alternatively output, profit may be maximised when the monopolist's marginal costs equate the marginal revenue. The true monopolists can control either price or productive output, but not both together.

Malthus's suggested term partial monopoly recognises the difference in land from 'common monopolised commodities'.[8]

As the individual site owner is only able to control price and not output, the term geopoly[9] is used here to refer to the economic marketing conditions of a single-site seller, resulting from the geophoric characteristics of land; hence a single-site seller is technically a geopolist.

A firm which is a producer of sites, such as a subdivider or developer, tends towards the marketing characteristics of monopolistic competition. Their degree of monopoly and competition will depend on what Joan Robinson has called the 'gap in the chain of substitute'.[10] Once such a seller is in a position of having the choice of controlling price or the rate of sales, he becomes under the definition of monopolist, albeit a competing one.

Geopolistic power may well be enhanced by natural or God-given amenities, or by man-made amenities or conditions. Sites located in much sought-after locations, such as central business districts, or on a desirable waterfront, will tend to grow faster in value as pressure of population increases. While this pressure may be increased by improved communications and transport, the transport friction is never completely eliminated. Statutory restrictions, particularly under town-planning legislation and its associated local authority district schemes and by-laws, deliberately restrict free choice of usage, thereby distorting the market and producing enhanced geopolistic marketing conditions.

The geophoric annual or rental market will form part of the market related to the renting or use of comparable sites in the locality. Any rental accommodation which influences that market, in the broadest sense, is part of that market, and completely differs from the market relating to the sale of sites. Separate markets exist for each class of site, which although indirectly linked with all other geophoric markets, they are most influenced by the special circumstances surrounding the particular marketing characteristics and conditions of each site. For example, the geophoric market which deals with the marketing of investment properties, whose value is derived from the capitalisation of geophoric rent, will extend to comparable properties whose risk factors are similar, even if not in the same immediate locality. Such a market will be materially influenced by both the sales of the existing supply of such sites as well as the annual supply.

In the consideration of any market analysis, demand must be effective and not merely desirous. Buyers and sellers must be bona fide. Buyers must be not only willing but also financially able to buy on the current market terms and conditions. Sellers must be able and willing to sell at the current level of prices or values. Value in this context means the sum which knowledgeable people con-

8 Thomas Robert Malthus, 'On the Rent of Land', from *Principles of Political Economy*, 2nd ed. (1836), (New York, Reprints of Economic Classics, Augustus M. Kelley, 1968), p.137.

9 Gk, ge, earth; poleo, sell.

10 *The Economics of Imperfect Competition, op. cit.*, p.5.

sider the property to be worth. Thus, the geophoric market must exclude those people who are able and prepared to sell, but only at a price in excess of current value. Likewise, it must exclude those buyers who will be prepared to buy only at a price below current market price.

Price will often differ from value. In property matters owing to the relatively low turnover of comparable sites, their unique characteristics which call for technical analysis, the lack of current market evidence, and the uneven bargaining power of individual buyers and sellers, will inevitably result in prices varying from the imprecise and intangible concept of value. Once a bona fide comparable sale is made, in itself it determines current market value.

Current value or worth is notionally a precise figure, but in reality must be considered to represent the central point of a range of prices or values, because of the imprecise nature of site comparisons. Any estimate should be, at best, regarded as the apogee of a normal distribution curve whose standard deviation will depend on both autonomous and exogenous market influences. The better the evidence of comparable properties the more accurate will be the estimate. The more the 'uniqueness', or distinguishing characteristics of the site, summed up in the phrase 'property personality', the less accurate will be the estimate of value.

Properties or sites as such do not make value: people do. It is the prospect of buyers with purchasing power ready and willing to buy which turns agercavic capital into geophoric value, by releasing the latent economic forces within and applicable to the site, coupled with vendors who refuse to accept less than the geophoric value.

The problem of value was illustrated by Richard Cantillon over two centuries ago:

> "If a gentleman cuts Canals and erects Terraces in his garden, their intrinsic value will be proportionable to Land and Labour; but the Price in reality will not always follow the proportion. If he offers to sell the Garden possibly no one will give him half the expense he has incurred. It is also possible that if several persons desire it he may be given double the intrinsic value, that is twice the value of the Land and the expense he has incurred."[11]

Geopolistic Market Analysis

As sites are technically unique, it is difficult to analyse their market as compared with homogeneous commodities. To overcome this analytical problem and to create a comparative criterion for analysis, suitable unit references have been created by valuers and urban land economists. The comparison of price and quantity is as old as the invention of money, but as land varies both in quantity and quality its analysis is complex.

The normal economic analytical techniques are difficult to apply to land problems. For their overall market analysis it is necessary to derive suitable methods. One such method developed for this purpose is to relate sales to official valuations. While it must be stated at the outset that any valuation is subject to error, there are inherent limitations in official valuations which should be borne in mind when interpreting any conclusions on official figures. The first assumption

11 *Essai sur la Nature du Commerce en Général,* (C.1730-1734), (London, Macmillan & Co. Ltd. for the Royal Economic Society 1931), p.29.

which is not necessarily correct, is that at the date of valuation the official figure was accurate or accurate relative to a given percentage of market value. Because any valuation is an opinion, based on limited evidence and analytical techniques, it is not a guarantee of value per se. Assuming it was accurate at the relevant date, as time goes by its value will change but not necessarily at any given rate, or at an average rate. Further, since the valuation was made, further improvements might have been carried out without the official records being amended. There is also the possibility of a change in use, or in zoning or some aspect of land use control which would subsequently affect its value. There could also be some variation in the title or condition of the land and/or its improvements. Notwithstanding these limitations, when taken over a reasonable sample of sites, the official valuation does form a basis for statistical comparison. If a ratio can be calculated between sale prices and official valuations of suitable comparable properties, market trends can be detected.

Agriamplic Market Conditions

The market for a particular site can have an accelerated demand because buyers believe that the site in particular, or the class of sites in general are likely to rise higher, or hold value better than their next best alternative choice. In buoyant marketing conditions, the site qualities and characteristics alone do not adequately reflect the market appeal of some sites and the buyers' response which reflects their anticipated satisfaction or utility, whether or not it is based on fact, fiction or mental speculation. Some properties have intangible charismatic-like appeal which may excite buyers and force 'values' to seemingly absurd heights. A property market in general or in respect of a particular site can be described as agriamplic,[12] when the demand is so increased for non-geophoric reasons. It is a special market condition distinct from producer's monopoly. It arises partly from the individual characteristcs of the site in buoyant conditions of geopoly, spurred on by the emotional and perhaps irrational behaviour of buyers which is self-induced but not forced.

The experience of the impact of the now repealed speculation tax of the early seventies, coupled also with alterations to income tax laws which introduced a form of capital gains tax in the guise of income tax, left the market uncertain and dazed. Sales turnover dropped dramatically as the market took stock. Buyers tended to hang back, but so did sellers. Prices tended to hold with some hesitation, but volume of sales plummeted.

Under 'normal' marketing conditions, (if the market can ever be 'normal' or in equilibrium), or at least under a given market condition, the traditional laws of supply do tend to still hold true, but not necessarily for all circumstances. Other things being equal, the higher the price the fewer buyers and more sellers; the lower the price the fewer sellers and more buyers. In the post-war era of inflation, escalating costs, demand and values have tended to turn the market towards agriamplic conditions of geopoly.

There is a reluctance for vendors to accept less than they paid for sites, less than any official or other valuation, and less than they believe a site is worth—that is, what they believe they can get or hope to get for it. This produces a ratchet effect on prices and values. This effect is further supported by a

12 L. agri, field, estate; amplior, superior, in a high degree, more.

reservoir of not anxious possible sellers who will only sell at a price above the then current market level. It is virtually only forced sellers who break this trend. Like life itself, many people hold on to hope for better things to come. May this always be so.

CHAPMAN TRIPP