RECONCILING HIGHEST AND BEST USE WITH THE
CONCEPTS OF PUBLIC AND PRIVATE GOODS

Charles C. Carter, PhD
College of Business
Department of Commerce
Massey University at Albany
Auckland, New Zealand

December 1999

RECONCILING HIGHEST AND BEST USE WITH THE
CONCEPTS OF PUBLIC AND PRIVATE GOODS

Abstract

The definition of highest and best use (HBU) has been a fertile source for
debate about important concepts for appraisers. Professor James Graaskamp of the
University of Wisconsin-Madison, for instance, spent a good deal of time arguing
about the proper definition of highest and best use in his writings that spanned his
professional career (e.g., Graaskamp, 1970, 1977, 1981). A relatively recent
development in economics has been the separation of different types of goods into
public, private, and "club" goods. These notions have more recently been getting use
in the land economics journals (e.g., Selwyn, 1995; Hanley, Kirkpatrick, Simpson, &
Oglethorpe 1998). It is argued here that appraisal too should take cognizance of these
notions because some confusion with the concept of HBU can be cleared up this
way. Practical application of HBU is not made overly complicated.

RECONCILING HIGHEST AND BEST USE WITH
THE CONCEPTS OF PUBLIC AND PRIVATE GOODS

1) <u>Introduction: Highest and Best Use for the Appraiser</u>

The concept of "highest and best use" (HBU) is one of the most fundamental

concepts in valuation theory. The Appraisal Institute (Chicago) defines highest

and best use as follows:

> " …the reasonably probable and legal use of vacant land or improved
> property, which is physically possible, appropriately supported, financially
> feasible, and that results in the highest value." [1]

Borrowing from Grissom and Liu (1994), several positive statements about the

concept can be made:

1)   It is a concept enforced by law that enables a comparative standard for
        making real estate decisions;

2)   Market value and highest and best use are related in that the market
        value estimate is always conditional upon the property being operated
        at its highest and best use, as pointed out by Vandell (1982);

3)   The concept is concerned with the process of identifying the legal,
        physical, and market constraints on the property by the appraiser; and

4)   The concept is in the last analysis ambiguous because it is determined
        by an appraiser's judgment.

Alternative definitions for HBU pioneered by James Graaskamp of the

University of Wisconsin and others evolved as a reaction to ambiguity with the

concept: Most Fitting Use (MFU) and Most Probable Use (MPU). The latter was the

land use concept used by Kinnard (1966) while the former was the definition by

Graaskamp (1979). Graaskamp's MFU model for feasibility fit within Kinnard's

MPU paradigm (Graaskamp 1973).

The concept of MFU meant the best use found after all alternative courses of

---

[1] Appraisal Institute (1996): 297. See also, Jefferies/NZ Institute of Valuers (1991): 5-17, 18

action and their consequences were weighed and considered. MFU

> "… is that use which is the optimal reconciliation of effective consumer demand, the cost of space production, the cost of providing public infrastructure service, and the fiscal and environmental impact on third parties."[2]

The concept of MPU further refined MFU by taking into consideration worldly constraints such as politics and the capital market.   MPU

> "… is that alternative course of action which is closest to being the most fitting use while recognizing the strong constraints imposed by current political factors, the state of real estate technology, the personalities and talents responsible, the money market, and short-term solvency pressures on space consumers, space producers, and the public infrastructure."[3]

Kinnard's MFU definition broadens the definition by stressing the dynamic, economic choices that go into the process of real estate valuation. Graaskamp's MPU definition furthers this process idea, and in this context divides the players into three groups and makes highest and best use part of feasibility analysis.[4] The players are the space consumers, the space producers (developers), and the public infrastructure (providers of water, electricity, etc.). Figure 1 is the widely reproduced diagram illustrating the interaction of the three participant groups from Graaskamp (1981).[5] Note the several categories of site attributes and how they interact in this diagram.[6]

---

2   Graaskamp, James A., <u>Fundamentals of Real Estate Development</u>, The Development Component Series, Washington D.C.: Urban Land Institute, 1981: 10-11

3   Ibid.

4   Woodward, Lynn N., "Appraisal: A Limited Form of Feasibility Analysis," <u>The Real Estate Appraiser and Analyst</u> (Summer 1982): 5-11

5   Graaskamp (1981): 4; see, e.g., Phyrr, Cooper, Wofford, Kapplin, & Lapides (1989); Wurtzebach and Miles (1991): 68; Smith and Corgel (1992): 84.

6   Graaskamp's notions of the concept of HBU derive more from the University of Wisconsin's tradition of institutional economics (dating back to the turn of the century and Richard T. Ely and John R. Commons) than from the contemporary theory of public and private goods.

In the best tradition of the institutional economists, Graaskamp believed "what best served society" could be determined objectively through a broader evaluation of social costs and benefits. This notion conflicts with that of mainstream welfare economics, where Arrow demonstrated that it was impossible to generate a social preference ordering that possessed a minimum of five agreeable features (Arrow 1951).

Figure 1

2) <u>Problems with the Concept of Highest and Best Goods</u>

Another dimension to the definition of HBU is hinted at by both Kinnard and Graaskamp.   Kinnard says "fiscal and environmental impact on third parties" should be taken into consideration. This involves not only the landowner but others (third parties) who might incidentally be affected. Here the emphasis is on externalities, which transforms the discussion into another realm, i.e., politics. Real estate can be understood to contain characteristics of what are called "public goods" in addition to the characteristics of "private goods," which appraisers more naturally associate with their subject matter (see below). For Graaskamp "constraints imposed by current political factors" should be considered too.

A related point raised by Graaskamp in many of his writings is the problem with what he calls a "laissez-faire" approach to defining HBU. In Graaskamp (1986) the phrase used to denote a merely private outlook is "Marshallian economics" rather than "laissez-faire" economics. Reluctance to emphasize social or political factors was possibly due to appraisers' qualms about involving themselves with things difficult to quantify. Graaskamp's excellent demonstration of HBU analysis in <u>The Appraisal of 25 North Pinkney</u> shows this sort of political analysis can be done easily enough. There Graaskamp took into consideration uncertainties associated with zoning, planning, and political factors explicitly by listing them, ranking them, and deciding which of them had precedence. His method with these matters was straightforward.

3) <u>Highest and Best Use and Public and Private Goods</u>

Private goods are the stuff that economists normally deal with regarding such

matters as market allocation and efficiency. Public goods, because of their

characteristics of non-excludability and non-depletability, are often hard to allocate by

market mechanisms.[7] Bread is a good example of a private good while national

defense is a good example of a public good. According to Samuelson

> "Public goods are ones whose benefits are indivisibly spread among the entire
> community, whether or not individuals desire to purchase the public goods.
> Private goods, by contrast are ones that can be divided up and provided
> separately to different individuals, with no external benefits or costs to others.
> Efficient provision of public goods often requires government action, while
> private goods can be efficiently allocated by markets.[8]

The examples of bread and national defense are extremes. There are in fact a

spectrum of goods best characterized as impure public goods or goods not purely

public or private. Real estate it is argued is one of these. Real estate consists of a

bundle of characteristics or amenities. Certain of these, such as structural amenities

(rooms, windows, etc.) are private goods in the sense of being excludable and

depletable in terms of consumption (i.e., others can be excluded from consuming their

services, and their services per individual decline as additional individuals consume

their benefits). However, other characteristics, such as exterior aesthetics, density,

externalities stemming from type of use, etc., are more properly defined as public

goods (or "bads"),[9] in that they are – for good or ill – also consumed by the general

public, which is not able to be excluded, and are not depletable in the sense that their

impact is as great on twenty individuals as it is on one.

Goods imbued with at least a partially public nature nature involve external

---

3   Recent real estate articles on the topic of public goods/club goods include Selwyn (1995) and
    Hanley, Kirkpatrick, Simpson, and Oglethorpe (1998).

4   Samuelson and Nordhaus (1989): 771. Efficient provision for public goods without government
    intervention has been an important topic of study since Coase (1960).

5   More properly, these would be considered to be what Sandler and Tschirhart (1980) described as
    "club" goods, in that only onr class of the general public (the "club," i.e., the residents of the loca;
    community) is not able to be excluded from their consumption.

benefits or costs to others. In the case of real estate, these are the benefits that accrue to the community from "good" zoning, planning, and land use regulation, while costs are the consequences of "poor" such behaviors. One only has to compare extreme cases to realize the difference. For instance, the severe rainstorms caused by El Nino in southern California a few years created inconvenience for landowners in San Diego but resulted in devastating flashfloods and widespread loss of life and limb in nearby Tijuana, which did not enjoy the same building codes and other regulatory standards.

Thus, to view real estate as a purely private good (i.e., a laissez-faire good) is to ignore the mixed nature of real estate and to ignore important aspects of the goods that are not considered in the context of a purely private good. The more limited view of the purely private good did not accurately characterize the commodity.

4) <u>Concluding Comments</u>

The textbook definition of HBU might be viewed as a linear programming problem where the objective function is maximizing owner's profits subject to the constraints of legality, physical possibility, probable income exceeding probable cost, and etc. (Figure 2 sets out a possible outline for such a linear program.) To delve more deeply into the definition might require an acknowledgment that many of the constraints in this problem are nonlinear and a much more complicated analysis is involved.

One must realize eventually that this format for defining HBU breaks down and an all-encompassing notion in the sense of some objective function subject to constraints must be insufficient. More than two objective functions are involved – one for the private goods part of real estate and one for the public goods part of real estate. And the latter has to do with politics.

However, for practical purposes nothing in this writer's experience mitigates

Figure 2

MAX $Z = X_1 * X_2 * X_3 * (X_4 - X_5 - X_6)$

SUBJECT TO

    1) $X_1, X_2, X_3 = 0$ or 1

    2) $X_4, X_5, X_6 \geq 0$

    3) $X_4 > X_5 + X_6$

X_1 = physically possible

X_2 = legally permissible

X_3 = appropriately supported

X_4 = effective consumer demand

X_5 = cost of space production

X_6 = cost of public infrastructure

against reliance on the type of definition of HBU expounded by Kinnard and Graaskamp. The concepts of public goods and private goods, like much of economics generally, merely assist the appraiser to understand his subject matter better. The Appraisal of 25 North Pinkney can be readily used as an example for appraisal purposes.

References

Appraisal Institute, <u>The Appraisal of Real Estate, 11th ed.</u> (Chicago: Appraisal Institute, 1996)

Arrow, Kenneth J., <u>Social Choice and Individual Values</u>, New York: Wiley, 1951

Coase, Ronald, "The Problem of Social Cost," <u>Journal of Law and Economics</u> 2 (October 1960)

Graaskamp, James A., <u>A Guide to Feasibility Analysis</u> (Chicago: Society of Real Estate Appraisers, 1970)

_____, <u>The Appraisal of 25 North Pinkney: A Demonstration Case for Contemporary Appraisal Methods</u>, Madison, Wisconsin: Landmark Research, Inc., 1977

_____, <u>Fundamentals of Real Estate Development</u>, The Development Component Series, Washington, D.C.: Urban Land Institute, 1982

Grissom, Terry, and Crocker Liu, "The Search for a Discipline: the Philosophy and the Paradigms," in James DeLisle & J. Sa-Aadu, eds., <u>Appraisal, Market Analysis, & Public Policy in Real Estate: Essays in Honor of James A. Graaskamp</u>, Boston: Kluwer Academic Publs./American Real Estate Society, 1994

Hanley, N., H. Kirkpatrick, I. Simpson, & D. Oglethorpe, "Principles for the Provision of Public Goods from Agriculture," <u>Land Economics</u> 74(1)(1998): 102-113

Jeffries, R./N.Z. Institute of Valuers, <u>Urban Valuation in New Zealand, 2nd ed.</u> Wellington: N.Z. Institute of Valuers, 1991, 5 17-18

Phyrr, S., J. Cooper, L. Wofford, S. Kapplin, & P. Lapides, <u>Real Estate Investment: Strategy, Analysis, Decisions, 2nd ed.</u>, New York: John Wiley & Sons (1989)

Samuelson, P. & W. Nordhaus, <u>Economics, 13th ed.</u>, New York: McGraw-Hill (1989)

Sandler, T. & J. Tschirhart, "The Economic Theory of Clubs," <u>Journal of Economic Literature</u>, (1980): 1481-1521

Selwyn, L., "Efficient Public Investment in Telecommunications Infrastructure," <u>Land Economics</u> 71(3)(1995): 331-342

Smith, H. & J. Corgel, <u>Real Estate Perspectives: An Introduction to Real Estate, 2nd ed.</u>, Homewood: IL: Irwin (1992)

Vandell, K., "Toward Analytically Precise Definitions of Market Value & Best Use," <u>The Appraisal Journal</u> 50, 2 (April 1982):253-268

Wurtzebach, C. & M. Miles, <u>Modern Real Estate, 4th ed.</u>, New York: John Wiley & Sons (1991)

$$TC(X_p) = \sum_{k=1}^{K} \sum_{i=1}^{m} w_{ki} \min \{ c_k(x_j, v_i) : x_j \in X_p \}$$