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NATIONAL HOUSING POLICY STUDY PAPERS

A RATIONALE FOR GOVERNMENT INTERVENTION
IN HOUSING: HOUSING AS A "MERIT GOOD"

By
Joseph S. DeSalvo
Associate Professor of Economics
University of Wisconsin--Milwaukee

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CONTENTS

A Rationale for Government Intervention in Housing: Housing as a "Merit Good"

Joseph S. DeSalvo

I. The Rationale for Government Intervention in Private Markets: General[1]

One of the greatest achievements of economic theory has been the elucidation of the conditions under which competitive markets produce efficient resource use. Although the idea dates back at least to the time of Adam Smith, it was not until fairly recently that the conditions under which the theorem holds were satisfactorily worked out.[2]

Two propositions about competitive markets are of special importance for our purposes: (1) a competitive equilibrium is efficient and (2) any efficient allocation of resources can be achieved by competitive markets, given a suitable reallocation of initial resources. These characteristics of competitive markets provide a rationale for decentralized decisionmaking by individuals and firms without government intervention. This is basically Adam Smith's "invisible hand." Private self-interest on the part of consumers and producers in a competitive environment results in the best use of scarce resources. Also, if we can decide on some socially desired distribution of incomes and a mechanism for attaining it, then the competitive market can be used to obtain an efficient allocation of resources consistent with the desired distribution of income. This means decisions

regarding equity can be separated from the efficient operation of an
economy; the latter can be left to private competitive markets.

These propositions provide the intellectual rationale for
private enterprise operating through competitive markets. Never-
theless, these powerful propositions are based on certain assumptions
that may not hold for particular economies. When they do not hold,
the basic propositions justifying decentralized decisionmaking no
longer hold, and there is a need for some kind of collective
decisionmaking designed to produce efficiency.

Competitive markets may fail to be economically efficient for a
number of reasons, and, of course, there is no presumption that non-
competitive markets will be efficient. Hence, there are two broad
issues with which to deal. The first concerns those factors that
prevent otherwise competitive markets from achieving efficiency. The
second concerns non-competitive market structures.

Since competitive markets are so important to the efficient
operation of a decentralized economy, the first question one might
raise is whether or not such markets can in fact work. It turns
out that a competitive equilibrium depends on the absence of in-
creasing returns to scale large relative to the market.[3] The
existence of scale economies large relative to the market may not
permit the operations of competitive markets, for the firm would
be induced to expand its production until it were one of a few
firms or the only firm occupying the market. However, if only one
or a few firms operated in a single market, each would have some

control over price. Such "high concentration" would violate the requirement for competition that specifies no control over price.

Thus, the absence of increasing returns large relative to the market means that a competitive equilibrium is possible. There are, however, other conditions that may not permit such a competitive equilibrium to be efficient. Perhaps the most important of these is externalities.[4]

Externalities are interdependencies between economic units for which no market exists. These interdependencies are a barrier to achieving economic efficiency because there is no market mechanism to value them. The smoke emitted by the steel manufacturer may increase the cleaning bills of neighboring households, but the producer does not perceive this cost. Hence, the social cost of steel production is greater than the private cost. If it were possible to make the producer bear the full social cost of his output, the production of steel (and consequently smoke) would be less. In fact, the amounts of these products would be optimal in the sense of efficient resource use. Where there exists no way of "internalizing" externalities, the private competitive market will result in inefficient resource use.

Aside from increasing returns, where competition may not exist, and externalities, where if competition exists it cannot be efficient, there is a special kind of commodity that the market may not produce in appropriate amounts. This kind of commodity is called a public good (also called a collective or social good). It is a good that

can be consumed by more than one person at the same time at no
extra expense, and it actually costs something to exclude potential
consumers.[5]

When an ordinary commodity is consumed, the units consumed are
thereby denied to others. For public goods, however, it may be
impossible or very costly to exclude people from consumption. In
those instances where the cost of exclusion exceeds the gain, private
enterprise will not produce the good, even though it may be desired
by consumers, because consumers cannot be made to pay their fair
share for its provision. Thus, in an economy with demand for public
goods, these demands may not be satisfied by private enterprise
even when competitive markets prevail. There is therefore a possible
role for collective action in the provision of such goods.

Implicit in the definition of a competitive market are certainty
and complete information on the part of buyers and sellers. Uncer-
tainty, a lack of knowledge of which state of nature will prevail in
the future, is not in and of itself inconsistent with competition.
People can make contracts contingent on the occurrence of certain
possible outcomes. Insurance is an example of these kinds of con-
tracts; common stocks may also be an example. It is not, therefore,
uncertainty itself that is inimical to competitive markets or effi-
ciency.[6] This is true, however, only when the events insured are
not controllable by individual behavior. There are, of course,
situations in which the fact of insurance affects the insured's
behavior (called "moral hazard" in the insurance literature). An

example is hospitalization insurance, where the insured will tend to
spend more on hospital services than he would if uninsured. In such
cases competitive markets result in overconsumption, since the price
paid by the consumer is artificially low. Inefficiencies may there-
fore occur in otherwise competitive markets because of uncertainty.[7]

Apart from uncertainty about states of the world, lack of informa-
tion itself leads to inefficiency. Participants in the economic
system are assumed to have full knowledge of prices and availability
of commodities and factor inputs. Clearly, this assumption does not
hold in the real world. It is approximated in many situations (for
example, commodities that are repeatedly purchased) but not in others
(for example, the one-time purchase of a durable consumption item).
Where there is incomplete information, there is no reason to believe
the market outcome will be efficient.

The previous discussion has dealt with the assumptions under-
lying competitive equilibrium and with the other conditions that,
although not inconsistent with competition, result in inefficiency.
Now, there is no presumption that non-competitive market structures
will be efficient.

Seller concentration is the primary characteristic of imperfect
markets, the extreme being monopoly but with gradations from monopo-
listic competition to oligopoly. The inefficiency resulting from
these market forms manifests itself in higher prices and smaller
outputs than would result under competitive organization.[8] What-
ever the particular cause of concentration (economies of scale;
product differentiation; or barriers to entry, such as patent controls

monopolistic resource ownership, pricing to discourage or prevent

entry of new firms, and strong stable buyer preferences[9]) and

whatever the degree of concentration, the allocation of resources

through these markets will be inefficient. To the extent that

market forces do not themselves tend to mitigate these non-

competitive conditions, there is a role for government in this area.

In summary, we can safely say there are a number of reasons

why a market economy may not achieve efficient utilization of

resources. In otherwise competitive markets, externalities, public

goods, uncertainty, and incomplete information render the market

solution inefficient. With these factors absent, increasing returns

and non-competitive markets in general render the competitive

market solution inoperative, the resulting market solution being

inefficient. Hence, the powerful forces of the invisible hand

are stymied when certain conditions prevail. The case for decen-

tralized decisionmaking is weakened, and the case for governmental

intervention is strengthened. Whether and to what extent these

inefficiency-producing conditions are present in particular markets

is an empirical question. What to do about them if present is

partly a theoretical question and partly an empirical question.

The preceding has been concerned with efficient resource use

and the conditions for which there exists a rationale for govern-

ment intervention into private markets for the sake of efficiency.

There is, however, another major reason for government, and that

is to affect the distribution of income in socially desired ways.

In other words, efficiency in the use of resources does not necessar-
ily imply equity in their distribution. It was noted earlier that,
when competitive markets exist, any desired distribution of resources
can be attained by such markets, given a suitable reallocation of
initial resources. Consequently, even if all the requisite condi-
tions for the operation of competition were fulfilled, there might
be a rationale for government intervention to attain the socially
desired distribution of income. Whether there is a socially desired
distribution of income different from that produced by a competitive
economy and, if there is, how to achieve it are difficult questions
that are partly theoretical and partly empirical.

We shall return to the issues of efficiency and equity later in
the context of housing. We now turn, however, to a rationale for
government intervention that has not yet been discussed here, the
concept of "merit goods." This particular rationale gets separate
treatment for two reasons. First, on the face of things, it appears
particularly relevant to a study of transfer programs such as those
for housing and has frequently been used as a justification for such
programs. Second, there is some question whether it is in fact dif-
ferent from some of those rationales discussed earlier.

II. The Rationale for Government Intervention in Private Markets:
     The Case of "Merit Goods"

In his well-known textbook, The Theory of Public Finance, Richard
Musgrave introduces an additional rationale for government intervention
into private markets. This rationale is based on the need to satisfy

"merit wants." There are wants that are satisfied in part by the private market but not in socially appropriate amounts. According to Musgrave, these include such wants as housing and education. They are merit wants "if considered so meritorious that their satisfaction is provided through the public budget, over and above what is provided for through the market and paid for by private buyers."[10]

Merit wants should be publicly subsidized (or penalized) because some people will spend either "too much" or "too little" on them. People will not live in adequate housing or provide enough education for their children because they prefer to spend their incomes on other items. Consequently, it is in the public interest and is a government function to induce people to consume appropriate amounts of merit goods through subsidy and taxation.

This is an appealing idea and one that has been used to justify governmental intervention for many years. However, Musgrave has difficulty with the concept on two grounds. First, he cannot reconcile the analysis of merit goods with that of public goods.

> The satisfaction of merit wants cannot be explained in the same terms as the satisfaction of social wants. While both are public wants in that they are provided for through the public budget, different principles apply. Social wants constitute a special problem because the same amount must be consumed by all, with all the difficulties to which this gives rise. Otherwise, the satisfaction of social wants falls within the realm of consumer sovereignty, as does the satisfaction of private wants. The satisfaction of merit wants, by its very nature, involves interference with consumer preferences.[11]

Second, he is concerned about the appropriateness of including merit wants "in a normative theory of public economy, based on the

premise of individual preference in a democratic society."[12]   In his

analysis, the individual is the basic decision unit of society (he

rejects an organic theory of the state); hence, he is decidedly

uncomfortable with the concept of merit want which seems to require

interference with individual preferences.

As a consequence of these twin concerns, Musgrave, for all

practical purposes, abandons the concept of merit wants. He main-

tains "that the merit-want situation is not so frequent as is some-

times assumed; the case at closer inspection frequently proves to be

one of social want." He also claims "that a full theory of the

public household requires multiple explanation. The allocation-

branch problem [i.e., those aspects of the public budget dealing

with allocation of resources] posed by social (or mixed social-

private) wants is more amenable to economic analysis than that posed

by merit wants . . . ."[13]

A decade later (1969), Musgrave was still concerned with these

issues, except that now he was ready to propose a reconciliation.

In fact, he proposed two possible ways to reconcile his concept of

merit want with social wants (i.e., the demands giving rise to public

goods) and with an individualistic normative theory of public economy.

> A possible reconciliation may be obtained by granting
> that rational individual choice requires acquaintance with
> alternatives and that experimentation (even though it may
> involve imposed choice on a temporary basis) may be needed
> to obtain the necessary information. Temporary use of im-
> posed choice may also be justified as an aid to the learning
> process. Thus, what appears to be imposed choice may be

compatible, in the longer run, with the objective of
intelligent free choice. This, however, is a somewhat
uneasy position to one who may deplore the poor taste
of the "public," but would rather persuade than force
them to choose otherwise. Yet, it is not without some
validity in the realities of the social framework.

An alternative possibility of reconciliation emerges
along these lines: Many of the phenomena which appear to
be of the merit good type can actually be explained by
interdependence of utilities. . . . In other words, A derives
a utility from his own consumption of Y, but he also de-
rives a utility (though of a different kind) from B's
consumption of Y. This, in fact, is a quite widespread
attitude regarding the consumption of basic commodities,
e.g., minimum requirements of food, shelter, health, and
so forth. The social philosophy of Western society appears
to be such that the freedom to tolerate inequality in the
distribution of luxury consumption and saving is purchased
at the cost of earmarked (specific) subsidies which assure
equality in the consumption of necessities. Looked at in
terms of this double standard, subsidies in kind, especi-
ally to low income groups, make sense; and what appeared to be
the wholly different phenomena of merit wants may be in-
corporated into a subjective preference theory.[14]

In the first paragraph quoted, Musgrave is saying that some
people do not spend their money wisely. At first he seems to
think this is a technical defect that can be corrected through
acquaintance with alternatives, experimentation, and temporarily
imposed choices. Yet toward the end of the quoted paragraph, Mus-
grave realizes that this view is really a value judgment: it
involves one person's opinion of how another should act. But, if
this is so, the first reconciliation is no different in principle
from the second; they both involve utility interdependence.

There may, however, be some validity to the "technical in-
efficiency of expenditures" argument. In standard consumer choice
theory, there is no concept of inefficiency in a person's expenditure

of his income. He is assumed to obtain maximum satisfaction from
consumption subject to the constraint of his income level and given
prices of the goods he buys. Efficiency in expenditure is therefore
implicitly assumed. Recently, however, Kelvin Lancaster has provided
a theory of consumer choice that does not implicitly require effi-
ciency in consumer expenditure.[15] It might, therefore, be possible
to interpret Musgrave's idea of inefficiency in expenditures and its
relation to merit goods in terms of Lancaster's theory. This has not,
however, been done. Lancaster's theory is still fairly new and,
although applications are beginning to appear, it has not yet dis-
placed the standard theory.

Thus, in terms of the standard theory of consumer choice, it
would appear that the only meaningful way to make sense out of the
merit good concept is as a consumption externality. In the next
section, we present an exposition of this approach.

III.   The Theory of Transfers

The traditional treatment of transfers in theoretical welfare
economics has been through the device of a social welfare function.[16]
This function, though it can be more general, is usually of the in-
dividualist variety. That is, a social welfare function indicates
that society's well being depends on the well being of its constituent
members. It is further assumed that if one person is made better off,
in terms of his own preferences, and no one is made worse off, then
society is made better off.

Given an initial distribution of resources among society's members, competitive markets will produce an efficient use of these resources. Such an efficient distribution of resources need not be a socially most desired distribution of resources. It can be shown that an economy can produce an infinite number of efficient resource allocations, only one of which is the competitive market allocation. Hence if it were possible to judge society's welfare in terms of these efficient allocations, society could pick the one most pre-ferred. This is exactly the role of a social welfare function in theoretical welfare economics.

One of the fundamental theorems of welfare economics is that given an initial reallocation of resources, competitive markets can attain the socially preferred allocation efficiently. In other words, if society can decide on a most preferred distribution of income and a mechanism of attaining it, the rest can be left to competitive markets. Given that the present distribution of resources is not socially optimal, then transfers of resources from some people to other people must take place in order to achieve that social optimum.

Theoretical welfare economists generally do not spend much time on the form or mechanisms of the requisite transfers, except to say that suitable lump-sum and, where there are externalities present, ad valorem taxes could lead society to the social optimum.[17]

Perhaps the main reason for this lack of attention to transfers by theoretical welfare economists is the neatness of the dichotomy

between efficiency and equity. It is extremely useful to be able
to distinguish between these two concepts, for very little of a
scientific nature can be said about equity, at least in the tradi-
tional welfare economics framework. To choose one efficient alloca-
tion over another will necessarily involve making at least one person
better off and one worse off. Consequently, in order to evaluate
such a choice involves making comparisons of the worthwhileness of
individuals, comparisons that welfare economists are loathe to make.
If there is a social welfare function, however, then the equity prob-
lem is resolved, and the economist can worry only about efficiency.

The unfortunate thing about this situation, however, is the
unsatisfactory nature of the concept of a social welfare function.
How is such a function obtained? In a dictatorship we might simply
say the welfare function reflects the individual preferences of the
dictator. In a democracy, however, this is not a satisfactory
answer. Without going too far afield, for this issue inevitably ends
up on the border between economics and political science, we can say
that principles underlying formation of social welfare functions are
not at present satisfactorily worked out. Some even contend that it
is impossible to obtain a satisfactory social welfare function.[18]
Given this state of affairs, it is not hard to see why a normative
theory of transfers was not developed in the context of traditional
welfare economics theory.

In recent years, however, a normative theory of transfers has
been developed. The time seemed to be ripe for such a development,

and a number of people came forth at about the same time with remarkably similar ideas.[19] The general feature of these theories is the use of consumption externalities to justify transfers, instead of a social welfare function. Perhaps the main contribution of these theories is the proof that transfers are required for efficient resource use; in other words, transfers are treated along with resource allocation on the efficiency side of the welfare economics ledger. An important issue brought out by these theories is the appropriate form of the transfer, that is, whether it should be in cash or in kind.

Since the purpose of this paper is to evaluate the rationale of housing as a merit good, and since the merit good concept is, we think, most fruitfully interpreted in terms of consumption externalities, it is clear that these recently developed theories are extremely important to the issue at hand. Consequently, we shall present a version of the theory here. The version we present is due to Edgar Olsen and is in the form of a simple numerical example, although generalizable.[20]

Assume there are two individuals in society, the grantor and the recipient. Suppose that they consume two goods, non-housing and housing. The grantor directly consumes only non-housing, but he also cares about the recipient's consumption of housing. The recipient directly consumes both non-housing and housing.

The following utility functions are assumed (a utility function shows the relationship between the goods a person consumes and the

satisfaction he receives from the consumption of those goods):

$$U_g(X_g, H_r) = X_g^{.9} H_r^{.1}$$

$$U_r(X_r, H_r) = X_r^{.8} H_r^{.2}$$

where X_g = the quantity of non-housing consumed by the grantor

X_r = the quantity of non-housing consumed by the recipient

H_r = the quantity of housing directly consumed by the recipient.

Assume further that non-housing and housing are produced at constant costs of $2 and $1 per unit respectively and that the grantor has an income of $400 and the recipient an income of $100 per time period.

In a competitive economy without transfers each person would attempt to obtain the most satisfaction from his expenditures by buying the appropriate quantities of the commodities he wants; the resulting allocation of resources would be $H_r = 20$, $X_r = 40$, and $X_g = 200$. These amounts are shown on the indifference-curve diagram in Figure 1 and are labelled n. (An indifference curve shows all the consumption combinations of two goods that will yield the same . level of satisfaction for the consumer. Higher indifference curves mean greater satisfaction.) Notice that the 20 units of housing bought by the recipient affect the preference level of the donor (these levels are indicated by b and a respectively) but that the "donor" has done nothing yet to affect the level of housing consumption of the recipient.
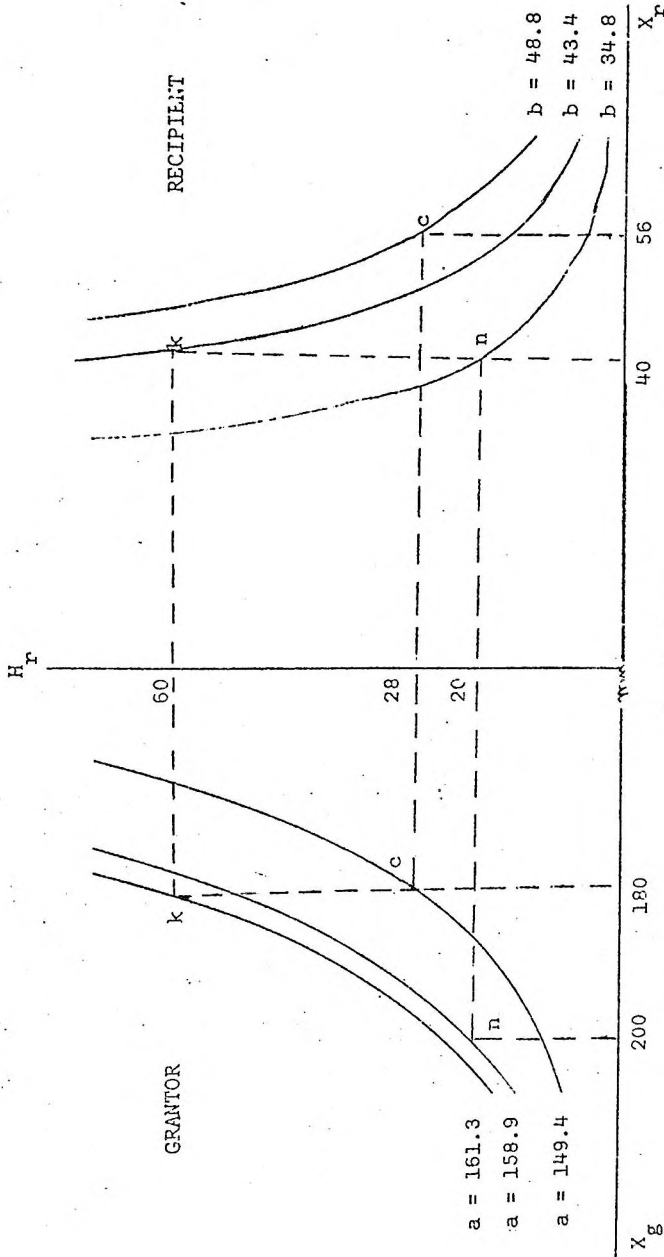
Figure 1

It turns out that this competitive market allocation of resources is inefficient because at least one of these people can be made better off without making the other worse off. The reason for this is that the donor has a demand for housing consumed by the recipient, and the donor would be willing to pay something to see this demand satisfied. This something he would pay is, at the margin, the dollar value of the amount he would give up of his own consumption of non-housing to see the recipient get another unit of housing.

If this amount could be charged to the donor in partial payment for the recipient's housing, and if the rest of the cost of the recipient's housing could be charged to the recipient, the resulting allocation of resources would be $X_g = 180$, $X_r = 40$, and $H_r = 60$. The proportion of the recipient's housing paid for by the donor would be two-thirds, the recipient paying the remaining one-third. This allocation and its associated preference levels are illustrated in Figure 1 by the points labelled k. Notice that both the donor and the recipient are better off than they were under the non-transfer competitive market allocation; i.e., they occupy higher indifference curves.

We have not indicated the nature of the transfer mechanism in the above example, but the transfer itself is of an in-kind nature. It is necessary for a social optimum that the recipient consume 60 units of housing, and the transfer is rigged so this outcome will result.

Suppose a cash transfer of $60 were given to the recipient. He could consume 60 units of housing but would not choose to do so. In fact, he would consume only 28 units of housing and 56 units of non-housing, in effect trading off housing for non-housing consumption. The donor would still consume 180 units of non-housing. This allocation is denoted by the points labelled $\underline{c}$ in Figure 1.

Notice that in comparison with either the non-transfer competitive market allocation or the in-kind transfer allocation, the donor is worse off and the recipient is better off. Moreover, this allocation is not efficient because both the recipient and the donor could be made better off, for example, at the feasible allocation $X_g = 170$, $X_r = 48.9$, and $H_r = 68.9$ (not shown on Figure 1). Therefore, to allow recipients of subsidies in kind to convert these to subsidies in cash may result in inefficient resource allocation, and a fortiori to give cash grants may result in inefficient resource use, where individuals are concerned about the quantity of goods that other people consume. Whether preferences are of this type would seem to be an empirical question of great importance.

The preceding provides a rationale for transfers between individuals for the purpose of economic efficiency. Does it, however, provide a rationale for government intervention to bring about optimal resource use where preferences for transfers exist? In the two-person example used above, it does not seem unlikely that the individuals involved would recognize their interdependence and arrive voluntarily at the optimum allocation of resources. However,

as the number of people involved increases, the transfer activity takes on the characteristics of a public good. It then becomes advantageous for any person with a demand for consumption by someone else to hide his preferences, for if the good is provided, he will get to enjoy it without contributing to its provision. This is the standard problem of public good provision pointed out by Samuelson nearly twenty years ago. If it were possible to get information on preferences for such transfer activities as housing, we could conceptually solve the problem of optimal provision. Although preferences are revealed for private goods by the actual purchase of those goods at market prices, such preferences for consumption externalities are not revealed because there are no markets in these externalities. Moreover, as already stated, there is every reason not to reveal one's preference for consumption externalities. In any event, the arrangement of transfers under these conditions appears clearly to be a governmental concern, for even with preferences known, the taxing power of the state would be required to collect sufficient revenue to support a transfer program.

Given the theoretical rationale for publicly subsidized housing as a merit good, an empirical question of some importance arises. Is there in fact a demand for the provision of publicly subsidized housing? The difficulty of answering this question has been referred to already. Despite this rather severe drawback, there has been some theoretical and empirical work relevant to the question. We turn now to an analysis of this work.

IV. Estimating the Demand for Transfer Activities

In order to establish the validity of the rationale for govern-
ment intervention in private markets for the provision of goods
conferring consumption externalities, we should ideally have the
demand for the transfer activity. In the case of housing, for
example, we should have the demands by prospective donors for the
housing of prospective recipients. · (As will be indicated later,
we can perhaps accomplish the objective with less information than
required by the ideal.)

If we had these demands, we could couple them with those of the
recipients' own demands for housing to obtain the social demand for
housing. This together with the cost of housing could be used to
determine the socially optimal supply of housing as a consumption
externality and the appropriate financing method, as was seen in
the two-person world of the example in the preceding section. How,
in practice, to obtain these demands?

For the private demand component, the answer is clear. A com-
modity such as housing is traded on the private market. Hence prices
and quantities are observable, and, although there are difficulties
as there are with all empirical work, it is possible to obtain esti-
mates of demand.[21]

For the consumption-externality demand   component, the situation
is considerably less clear for reasons already given. In fact, until
the last three or four years, most economists would probably have
said that it was impossible to estimate such demands. However, due

to the recent work of Henry Aaron and Martin McGuire, there appears
to be a glimmering of hope that the problem can be resolved.[22]

The contribution of Aaron and McGuire is two-fold. They have
cleared up some theoretical issues relating to the provision of
public goods, and they have developed a method for imputing the value
of public goods to households. Both are important, but the latter is
directly relevant to the issue at hand. An exposition of their
method for imputing the benefits of public goods follows.[23]

Suppose Figure 2 represents the indifference curves of an
individual who "consumes" a public good and private goods (lumped
together and valued in dollar terms). The public good in this case
can be thought of as a consumption externality, such as the quantity
of housing consumed directly by others (like H_r that entered the
donor's utility function in the example of the previous section).

This individual earns (before-tax) income of OD, pays taxes
(less transfers) equal to AD, and retains disposable income of OA.
All these sums are directly observable.

OA and OG are co-ordinates of a point C on indifference curve
U. A line tangent to U at C intersects the ordinate at B. Then
AB is the value to this person of OG units of the public good measured
in terms of income or private goods.

This result is obtained by noting that the slope of BC measures
the individual's marginal rate of substitution of public goods for
income, defined at point C; i.e., it is the subjective value or price
to the individual of a unit of the public good in terms of income.
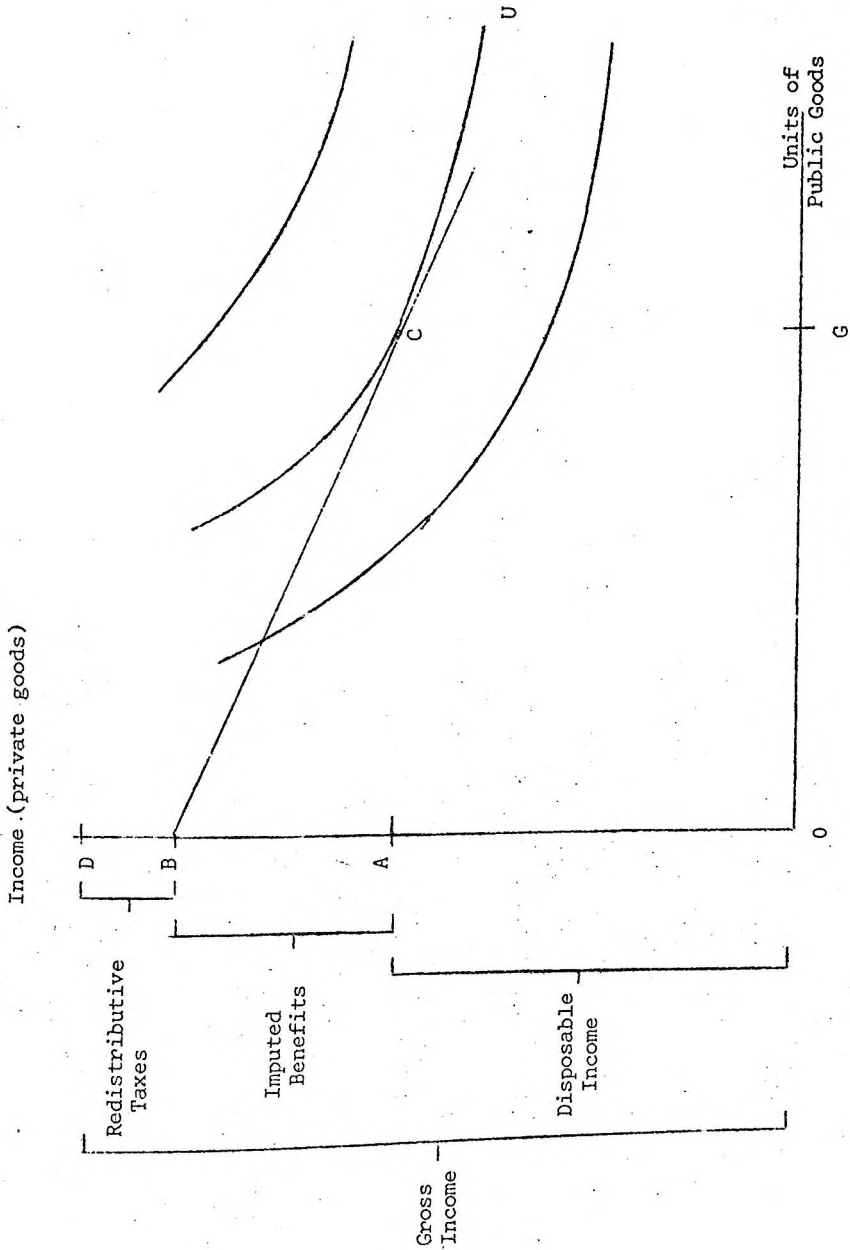
Figure 2

Multiplying the quantity of public goods by its "price" gives the income equivalent of OG to the individual.

AB may also be interpreted as the sum of taxes the individual would be willing to pay in return for OG units of the public good, provided he could be cajoled into revealing his preferences truthfully. If OG units of the public good were financed by taxes according to the benefit principle, this individual's share would be exactly AB.

On balance, then, the individual has paid AD in taxes, for which he has received benefits of AB. The amount BD, therefore, represents that portion of his taxes going for purely redistributional purposes. This might well be considered a waste unless our individual had preferences for purely redistributive transfers. Of course, B might fall well above D, in which case the individual would receive redistributive transfers instead of paying taxes.

Assuming a utility function additively separable in public and private goods, Aaron and McGuire show that the ratio of imputed benefits for any one individual to any other individual is equal to the inverse of the ratio of these individuals' respective marginal utilities of income. Given n-1 such equations and an nth equation, say ΣAB_i = OG as suggested by Maital, then one can solve for the n unknown AB's.

Aaron and McGuire have used this approach to estimate the distributive impact of taxes and government expenditures. Their results cast doubt on the findings of previous studies that suggest the

combined incidence of taxes and expenditures on income distribution
is highly progressive.

In order to obtain this result, they computed the AB's indicated
above, but only for two broad classifications of government expenditures:
(1) public goods, i.e., those goods that everyone consumes in
equal amounts, and (2) "specific" goods, i.e., "goods or services
produced by governments, but which otherwise are similar to private
goods privately produced, i.e., not commonly shared, but consumed
exclusively by their 'owner.'"[24] Following the Tax Foundation's lead,
Aaron and McGuire included housing in the public goods category.
Although their analysis can accomodate merit goods like housing that
may not enter everyone's utility functions, they do not present a
separate category for this type of good in their empirical work.
Maital also presents aggregate estimates of imputed benefits from
public and "specific" goods but not merit goods.

It appears, therefore, that a method exists for estimating the
consumption-externality benefits of goods like housing. Such benefits
have not, however, been measured. Since, as indicated at length
previously, the justification for government intervention in private
markets for goods like housing depends importantly on the existence
of transfer benefits, the empirical estimation of such benefits ought
to be a high priority research item.

It is conceptually possible, although Aaron and McGuire do not
stress it, to use the preceding analysis in obtaining the individual
consumption-externality demands for merit goods. Knowing these would

permit the a priori determination of the optimal level of the good
and of the optimal tax charges. However, such an enterprise would be
a major undertaking, involving massive data collection and strong
assumptions to render the analysis empirically tractable. Nor would
such an undertaking seem necessary if that described in the previous
paragraph could be done, at least for merit goods provided in on-
going government programs such as federally subsidized housing.

Although there do not exist estimates of the benefits of con-
sumption externalities for specific goods, including housing, there
have been two studies that shed some light on the magnitude of such
externality benefits for housing.[25] Instead of measuring the quantity
earlier called "imputed benefits," a quantity is estimated represent-
ing the minimum amount of such benefits necessary to ensure a housing
program is an efficient use of resources.

To see how such a concept is obtained, refer to Figure 3, which
represents the preference map of a prospective (or actual) recipient
of subsidized housing.[26] The preference map shows this person's
choices between housing on the horizontal axis and all other expendi-
tures on the vertical axis, As a nonparticipant, the household is
at point $\underline{a}$ where indifference curve U_o is tangent to his budget con-
straint. As a participant, the household is at point $\underline{b}$ on indifference
curve U_1. (We assume he is better off as a participant or he would not
participate in the program, but the location of $\underline{b}$ on U_1 is arbitrary.)
Since the household's money income is the same whether or not he
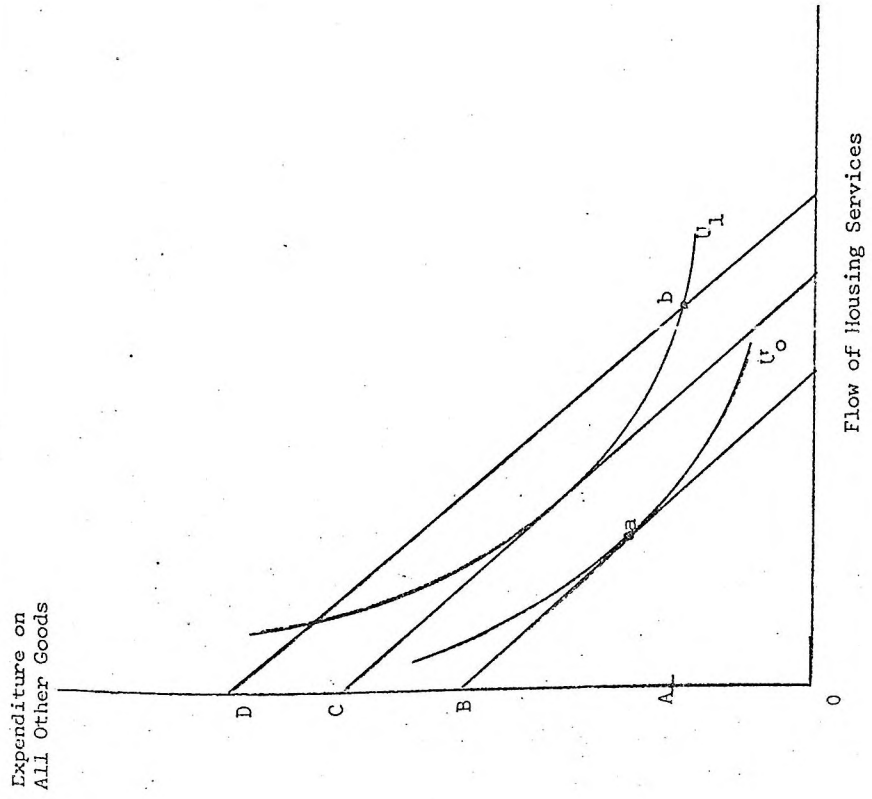participates in the program, OB represents this magnitude which is

Figure 3

Expenditure on
All Other Goods

Flow of Housing Services

divided between housing expenditures (subsidized) of AB and expenditures on everything else, OA. The direct net benefits to the participant are BC, that is, how much money he would have to be given to be as well off without subsidized housing as he is with it. The market value of the subsidized unit is given by AD which is under certain circumstances the same as the total resource cost of providing the subsidized housing unit. This quantity can be divided into two parts: the tenant's contribution, AB, and his subsidy, BD. Notice that the subsidy exceeds the direct benefit by the amount CD.

If housing created no consumption externalities, the amount CD would be a deadweight loss to society, for the cost of providing the subsidized housing would exceed the benefits of doing so. It is a well-known theorem of economics that, for indifference curves shaped as in Figure 3, the direct benefits will always fall short of the resources necessary for the subsidy. On the other hand, if housing does confer consumption externalities (i.e., if housing is a merit good as we use the term), then those consumption-externality benefits must be at least as large as CD for the housing subsidy to be justified as an efficient use of resources. If the consumption-externality benefits fall short of CD, then it may be better to give the subsidy in cash than in kind.

It is possible to estimate these minimum required benefits since the subsidy is observable and, with a specific utility function, direct benefits can be estimated. The magnitude resulting from their difference can give some guidance as to the likely efficiency of the

program. For example, if minimum required benefits are small, either absolutely or relative to the size of the public subsidy, then the program would require little in the way of consumption externalities to justify its existence.

The author used this approach to evaluate a New York City housing program for middle-income families.[27] As of June 1968, the 123 housing projects containing 57,000 units were producing $123.6 million a year in direct benefits to their occupants. This amounted to $2171 per unit. Of this total the tenants themselves provided $84 million through payment of their subsidized rentals. The remainder was $39.6 million or $695 per unit. On average, then, each tenant would have had to be given $695 per year in cash to be made as well off without the program as he was with it. This was a real income increase amounting to about 7.8 percent of the average tenant's actual money income. It required $130.9 million annually to operate these projects, of which $47 million or $824 per unit was the public subsidy. Consequently the minimum required consumption-externality benefits were $7.3 million or about $129 per unit per year. This comes to about 6 percent of the total annual cost of the projects. Whether or not the projects created this much in consumption externalities is unknown, but at least this much must have been created if the subsidized housing was a worthwhile public investment. Given this kind of information, one would hope citizens and public officials could better evaluate whether such a program was worth its price.

Aaron and von Furstenberg use exactly the same conceptual framework to calculate the inefficiency of housing subsidies. Their inefficiency percentage is our minimum required consumption-externality benefits expressed as a percentage of the public subsidy. In terms of Figure 3, it is $100 \left(\frac{BD-BC}{BD}\right)$ percent or $100 \left(\frac{CD}{BD}\right)$ percent. For the program discussed above, the inefficiency percentage as defined by Aaron and von Furstenberg would be $100 \left(\frac{\$129}{\$824}\right)$ percent = 16 percent. In other words, a cash subsidy equal to an amount 16 percent smaller than the in-kind subsidy would have produced the same level of benefits to subsidized households. Aaron and von Furstenberg also calculate the income effect of housing subsidies, defined in terms of Figure 3 as $100 \left(\frac{BC}{OC}\right)$ percent. This is the percentage increase in real income accruing to the occupant of subsidized housing, given above as 7.8 percent for the New York City program.

Aaron and von Furstenberg do not present a detailed analysis of any subsidized housing program. Rather, they calculate values of the two percentage figures discussed above for various values of variables representing (1) the degree of substitutability between housing and other goods in consumption (called the elasticity of substitution) and (2) the percentage size of the subsidy, i.e., the percentage reduction in the price of housing for a subsidized household. See Table 1. They find that the greater the degree of substitutability, the greater is the inefficiency of subsidized housing, no matter what is the percentage size of the subsidy. This just says

Table 1

Inefficiency and Income Effects of Subsidized Housing

Elasticity of Substitution	Percentage Size of Housing Subsidy							
	10	20	30	40	50	60	70	80

The Inefficiency Percentage of Housing Subsidies

2.0	7.5	15.0	22.5	30.0	37.5	45.0	52.5	60.0
1.5	5.7	11.8	18.1	24.8	32.0	39.8	48.4	58.2
1.0	3.9	8.2	13.0	18.3	24.3	31.4	39.8	50.5
0.75	2.9	6.3	10.1	14.4	19.5	25.6	33.2	43.3
0.5	2.0	4.3	7.0	10.1	13.9	18.6	24.3	33.2

The Income Effect of Housing Subsidies

2.0	2.8	6.2	10.7	16.7	25.0	37.5	58.3	100.0
1.5	2.7	6.0	10.0	15.1	21.8	31.2	45.5	71.4
1.0	2.7	5.7	9.3	13.6	18.9	25.7	35.1	49.5
0.75	2.6	5.6	9.0	12.9	17.6	23.4	30.8	41.3
0.5	2.6	5.5	8.7	12.3	16.4	21.3	27.1	34.6

Source: H. J. Aaron and G. M. von Furstenberg, "The Inefficiency of Transfers in Kind: The Case of Housing Assistance," Western Economic Journal, Vol. 9, No. 2, June 1971, p. 188.

that the more housing a person would be willing to give up for a
unit of other goods, the less cash he would have to be given to be
made as well off as with any given value of subsidized housing.
Aaron and von Furstenberg also find that the inefficiency of housing
subsidies increases as the percentage size of the subsidy increases.
That is, the more of a person's housing budget subsidized, the better
off he would be with a cash transfer of equal dollar amount. Finally,
the income effect of subsidized housing is found to increase with the
elasticity of substitution, given the size of the subsidy, and to
increase with the size of the subsidy, given the elasticity of substi-
tution.

   With rough calculations, Aaron and von Furstenberg figure that
the inefficiency of public housing ranges from 3.4 to about 10 percent.
For Sections 235 and 236 housing, they estimate the inefficiency at
about 18 percent. For Section 243 of the Emergency Home Financing
Act of 1970, Aaron and von Furstenberg estimate inefficiency of at
most 5 percent. Unfortunately, dollar magnitudes are not presented.
They conclude as follows:

> In sum, if all housing programs operated with maximum
> consumption efficiency, the same increase in the welfare of
> recipients could be purchased for about 10 to 15 percent less,
> depending on program mix. In fact, because of quantity con-
> straints, the inefficiencies may be lower even if no external
> benefits are attached specifically to the increased consumption
> of better housing.[28] If there are large inefficiencies in
> federally assisted housing, they will have to be found empiri-
> cally, on the cost side, to the extent the administration of
> particular programs involves detailed federal regulations of
> the conditions of supply.[29]

This is an optimistic conclusion. If Aaron and von Furstenberg are correct, then the empirical relevance of consumption-externality benefits is slight, for federally subsidized housing programs achieve virtually the same results as cash grants, at least as regards the benefits created. Nevertheless, cash grants may well be a less costly way of achieving the desired results. It is this writer's view that the optimistic position of Aaron and von Furstenberg is not well founded. Even if they are correct that the inefficiency of subsidized housing programs is only 10-15 percent, this is surely a large amount of money. For the New York City program discussed above, it was over $7 million for 1968 alone. Unfortunately, there are no other empirical studies of subsidized housing that provide a dollar estimate of the minimum required consumption externality benefit.

In summary, we have shown that to justify in-kind transfers requires the existence of consumption-externality benefits. Such benefits are difficult but not necessarily impossible to estimate. However, no such estimates exist, at least for housing. Nevertheless, existing studies have shown the relative and absolute size that such benefits must attain for certain housing programs to be justified in terms of efficient resource use. It turns out that these minimum required benefits are on the order of 10-15 percent of the public subsidy. In the absence of definite estimates of consumption-externality benefits, the main issue would appear to be the relative costs of subsidized housing versus cash grants. In the following section we discuss this issue further.

V. Housing Subsidies or Cash Transfers?

Suppose empirical evidence supported the view that housing confers consumption externalities that are of sufficient magnitude to justify transfers whose purpose would be to increase the housing consumption of certain people. An unanswered question would be how best to effect such transfers.

Needless to say, there are a number of ways in which housing subsidies can be conferred. We do not intend to discuss these. Instead we present briefly a method that is superior in several respects to the standard methods. Specifically, we recommend a rent certificate scheme designed to increase the quantity of housing consumed by low-income families.[30]

A rent certificate plan is a method that permits a set of families to purchase rent certificates for an amount less than the face value of the certificate. Sellers of housing service may redeem these certificates at their face value from the subsidizing government. The difference between the face value of the certificate and the amount paid for it by the eligible family is the public subsidy. It must be illegal to use the rent certificate for other than the purchase of housing service. Consequently, a penalty must be imposed on the illegal use of rent certificates, since, as implied by the discussion in the last section, recipients of the rent certificate would prefer an equal dollar cash amount. (In fact they would be willing to take less, up to a point.)

In order to implement such a scheme, several issues must be settled in advance by the subsidizing government. It must be decided who is eligible to receive rent certificates, what is to be the face value of the certificate received by each person, and what is to be the amount that each person must pay to receive his certificate.

Given answers to these questions and an adequate administrative set-up, it can be shown that such a rent certificate plan will have desirable features not shared by other methods of conferring housing subsidies. Specifically, the housing service consumed by participating families will be provided at least cost. This is so because the program uses the private competitive housing market to provide housing instead of some other mechanism, e.g., public housing projects. Competition forces housing producers to operate efficiently, whereas there is no comparable force at work in many subsidized housing programs. Also, the rent certificate plan is consideraly more flexible than others. Namely, any distribution of consumption of housing service can be achieved by varying the face value of the certificate and/or the amount required to purchase it.

Suppose, however, that empirical evidence did not support the view that housing confers consumption externalities. Then, to the extent income or preference levels of others created consumption externalities, there would be justification for transfers in cash rather than in kind. Efficient methods for transferring cash have been discussed for some time and will not be analyzed here. Suffice

it to say that something like the Family Assistance Plan originally proposed by the Nixon Administration would seem to fill the bill.

In the absence of empirical information on the existence and magnitude of motives for transfers, whether in cash or kind, one must fall back on plausible reasons for supporting specific transfer schemes. In a recent unpublished paper Edgar Browning provides a list of advantages of cash transfers, where the comparison is with consumption subsidies of equal cost:

1. Recipients will be better off if the assistance is given in the form of cash. (This familiar reason is still as good as ever, and deserves to be listed first.)

2. Recipients will learn to make wiser consumption decisions as a result of having the responsibility of making their own choices. (The strength of this argument probably depends, however, on the form of the consumption subsidies. Some forms of consumption subsidies, such as public housing, are more clearly than others an instance of the government making choices for recipients and thereby depriving them of the knowledge and experience to be gained by making their own choices.)

3. Consumption subsidies would have to be changed frequently with the introduction of new goods and technology, and with changes in preferences, incomes, other government policies, etc. (This must be true if the programs are presented as being "optimal" since what is optimal in a consumption subsidy depends on all these, and other, factors.) Frequent, and unpredictable, shifts in government policy will compound the difficulty of recipients wisely planning their own affairs. With cash transfers, this type of uncertainty can be reduced.

4. The administrative cost of a cash transfer program will be smaller.

5. Problems created by special interests in the government bureaucracy and in producer groups are less severe.

6. Making one decision--how to distribute money among the poor--will put less strain on the legislative process than having to make a multitude of decisions concerning each commodity subsidized.

7. The consequences of cash transfers are easier to understand so voters will be better informed.

8. Cash transfers will increase understanding of, and respect for, the ability of markets to cater to the needs of the poor.[31]

Browning realizes that these points will not all attract wide agreement. He claims, however, that they are positive propositions capable of refutation and that disagreement about them indicates that there are plenty of issues that need settling in addition to the basic issue of existence and magnitude of consumption externalities.

FOOTNOTES

1. This section draws heavily on the author's paper, "The Economic Rationale for Transportation Planning," in J. S. DeSalvo (ed.) Perspectives on Regional Transportation Planning (Lexington: D. C. Heath, 1973) pp. 21-89.

2. The most complete presentation is found in G. Debreu, Theory of Value: An Axiomatic Analysis of Economic Equilibrium (New York: Wiley, 1959).

3. See M. J. Farrell, "The Convexity Assumption in the Theory of Competitive Markets," Journal of Political Economy, Vol. 67, No. 4, Aug. 1959, pp. 377-391; J. Rothenberg, "Non-Convexity, Aggregation, and Pareto Optimality," Journal of Political Economy, Vol. 68, No. 5, Oct. 1960, pp. 435-468; R. M. Starr, "Quasi-Equilibria in Markets with Non-Convex Preferences," Econometrica, Vol. 37, No. 1, Jan. 1969, pp. 25-38.

4. The classical discussion of externalities may be found in A. C. Pigou, The Economics of Welfare, 4th ed. (London: Macmillan, 1932), Part 2, Ch. 9.

5. The implications of the existence of such goods for attainment of efficiency by private markets were presented by Samuelson in three articles: P. A. Samuelson, "Aspects of Public Expenditure Theories," Review of Economics and Statistics, Vol. 40, No. 4, Nov. 1958, pp. 332-338; P. A. Samuelson, "Diagrammatic Exposition of a Theory of Public Expenditure," Review of Economics and Statistics, Vol. 37, No. 4, Nov. 1955, pp. 350-356; P. A. Samuelson, "The Pure Theory of Public Expenditure," Review of Economics and Statistics, Vol. 36, No. 4, Nov. 1954, pp. 387-389. The definition used here is adopted from R. N. McKean, Public Spending (New York: McGraw-Hill, 1968).

6. For proofs that this type of uncertainty is consistent with efficiency and decentralized competitive markets, see K. J. Arrow, "The Role of Securities in the Optimal Allocation of Risk Bearing," Review of Economic Studies, Vol. 31(2), No. 86, April 1964, pp. 91-96; and R. Radner, "Competitive Equilibrium under Uncertainty," Econometrica, Vol. 36, No. 1, Jan. 1968, pp. 31-58.

7. See K. J. Arrow, "The Economics of Moral Hazard: Further Comment," American Economic Review, Vol. 38, No. 3, Part 1, June 1968, pp. 537-539.

8. See any intermediate microtheory text, e.g., E. Mansfield, Micro-Economics: Theory and Applications (New York: Norton, 1970), pp. 268-270, 299-300, 329-330.

9. For a discussion of factors facilitating concentration, see J. S. Bain, Industrial Organization (New York: Wiley, 1959).

10. R. A. Musgrave, The Theory of Public Finance (New York: McGraw-Hill, 1959), p. 13.

11. Ibid.

12. Ibid.

13. Ibid., p. 89.

14. R. A. Musgrave, "Provision for Social Goods," in J. Margolis and H. Guitton (eds.), Public Economics (London: Macmillan, 1969), pp. 143-144.

15. See K. J. Lancaster, "A New Approach to Consumer Theory," Journal of Political Economy, Vol. 74, No. 2, April 1966, pp. 132-157.

16. For a discussion of social welfare functions in the context of traditional welfare economics, see J. de V. Graaff, Theoretical Welfare Economics (Cambridge: Cambridge University Press, 1967).

17. See, for example, ibid.

18. K. J. Arrow, Social Choice and Individual Values, 2nd ed. (New York: Wiley, 1963).

19. See H. M. Hochman and J. D. Rogers, "Pareto Optimal Redistribution," American Economic Review, Vol. 59, No. 4, Part 1, Sept. 1969, pp. 542-557; E. O. Olsen, "A Normative Theory of Transfers," Public Choice, Vol. 6, No. 2, Spring 1969, pp. 39-58; and M. V. Pauly, "Mixed Public and Private Financing of Education," American Economic Review, Vol. 57, No. 1, March 1967, pp. 120-130.

20. E. O. Olsen, "Subsidized Housing in a Competitive Market: Reply," American Economic Review, Vol. 61, No. 1, March 1971, pp. 220-224. For the generalization, see P. A. Samuelson, "Pure Theory of Public Expenditure and Taxation," in J. Margolis and H. Guitton (eds.), Public Economics (London: Macmillan, 1969), pp. 98-123. Samuelson, however, is unsympathetic to this approach claiming it has no relevance to motivated market behavior because of the possibility for game playing by the individuals involved (ibid., pp. 106-107 and appendix). We do not think his remarks apply to the interpretation given here to the consumption externality model.

21. For example, see the housing demand studies reviewed in F. DeLeeuw, "The Demand for Housing: A Review of Cross-Section Evidence," _The Review of Economics and Statistics_, Vol. 53, No. 1, Feb. 1971, pp. 1-10.

22. See H. Aaron and M. C. McGuire, "Public Goods and Income Distribution," _Econometrica_, Vol. 38, No. 6, Nov. 1970, pp. 907-920 and M. C. McGuire and H. Aaron, "Efficiency and Equity in the Optimal Supply of a Public Good," _Review of Economics and Statistics_, Vol. 51, No. 1, Feb. 1969, pp. 31-39.

23. The exposition in the text follows closely that of S. Maital, "Public Goods and Income Distribution: Some Further Results," _Econometrica_ (forthcoming).

24. H. Aaron and M. C. McGuire, "Public Goods and Income Distribution," _Econometrica_, Vol. 38, No. 6, Nov. 1970, p. 908, n. 3.

25. Namely H. J. Aaron and G. M. von Furstenberg, "The Inefficiency of Transfers in Kind: The Case of Housing Assistance," _Western Economic Journal_, Vol. 9, No. 2, June 1971, pp. 184-191; and J. S. DeSalvo, _An Economic Analysis of New York City's Mitchell-Lama Housing Program_ (New York: The New York City Rand Institute, R-610-NYC, June 1971).

26. The analysis on which the exposition in the text is based is presented in J. S. DeSalvo, "A Methodology for Evaluating Housing Programs," _Journal of Regional Science_, Vol. 11, No. 2, Aug. 1971, pp. 173-185.

27. See J. S. DeSalvo, _An Economic Analysis of New York City's Mitchell-Lama Housing Program_ (New York: The New York City Rand Institute, R-610-NYC, June 1971).

28. In their analysis, Aaron and von Furstenberg assume households receive a price subsidy and can choose whatever quantity of housing they wish. Of course, many programs are not like this but instead require a participant to take a particular unit at the subsidized price. The analysis can be generalized to include this type of program; however, we believe Aaron and von Furstenberg are incorrect in saying inefficiencies will be lower under such programs. See J. S. DeSalvo, "A Methodology for Evaluating Housing Programs," _Journal of Regional Science_, Vol. 11, No. 2, Aug. 1971, pp. 173-185.

29. H. J. Aaron, and G. M. von Furstenberg, "The Inefficiency of Transfers in Kind: The Case of Housing Assistance," Western Economic Journal, Vol. 9, No. 2, June 1971, p. 190.

30. The analysis draws primarily on E. O. Olsen, An Efficient Method of Improving the Housing of Low Income Families (Santa Monica: The Rand Corp., P-4258, Dec. 1969). See also I. S. Lowry, J. S. DeSalvo, and B. M. Woodfill, Rental Housing in New York City, Vol. II: "The Demand for Shelter" (New York: The New York City Rand Institute, R-649-NYC, June 1971).

31. E. K. Browning, "Consumption Subsidies and Cash Transfers: The Controversy Revisited," unpublished paper [n.d.], pp. 30-31.

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SUMMARY

There are a number of plausible rationales for government intervention into private markets. Among these is the rationale that certain goods are so meritorious that they should be publicly provided or subsidized. Such goods are called merit goods, and housing is frequently thought to be an example.

It is seen that the idea of merit good is most fruitfully treated as a positive consumption externality, i.e., a good that confers benefits on other than those directly consuming it. The existence of such goods gives rise to the need for transfers in kind for the purpose of achieving the most efficient use of resources.

Whether or not consumption externalities exist and in what magnitude are difficult empirical questions. Although there now apparently exists a theoretically sound method for answering these questions, the method has not yet been applied to housing (or for that matter to any other specific good or service). Nevertheless, some empirical work relevant to the issue has been performed for housing. This work indicates that consumption-externality benefits must be at least as large as 10-15 percent of the public subsidy to ensure that certain existing housing programs are efficient uses of resources. Whether or not present housing programs produce this much in consumption externalities is unknown.

If in fact consumption-externality benefits are created by housing, then the case for subsidized housing programs is strengthened and the case for cash transfers is weakened.

Nevertheless, there is still the problem of the appropriate form of the in-kind transfer. It is argued in the text that housing transfers should

take the form of rent certificates rather than some other form such as public housing projects, interest rate subsidies, rent control, and so forth.

If in fact consumption-externality benefits are not created by housing, then the case for subsidized housing, in whatever form, is weakened and the case for cash transfers is strengthened. There are other factors favoring cash transfers as well.

Consequently, we conclude that if housing is a merit good, it should be subsidized via rent certificates. If it is not, then housing should not be specifically subsidized; rather whatever transfers are justified should be in cash. Which of these cases is appropriate in the U. S. today is an empirical question not yet answered.

CURRICULUM VITAE

Joseph S. DeSalvo has been for the last two years Associate Professor and for the last year Chairman of the Economics Department at the University of Wisconsin--Milwaukee. For four years prior to this he was an economist with The Rand Corporation. Dr. DeSalvo received undergraduate and some graduate education at the University of Florida where he received a B.A. in 1960 and an M.A. in 1961, both in economics. He taught for two years at the Virginia Military Institute before pursuing and obtaining his doctorate in economics at Northwestern University in 1968.

Dr. DeSalvo has published a number of articles in professional journals, of which the most significant are probably: "Congestion, Tolls, and the Economic Capacity of a Waterway," Journal of Political Economy, May/June 1968 (with L. B. Lave); "A Process Function for Rail Linehaul Operations," Journal of Transport Economics and Policy, Jan. 1969; "Effects of the Property Tax on Operating and Investment Decisions of Rental Property Owners," National Tax Journal, March 1971; "A Methdology for Evaluating Housing Programs," Journal of Regional Science, July 1971; "Reforming Rent Control in New York City: Analysis of Housing Expenditures and Market Rentals," Regional Science Association Papers, Vol. 27, 1971.

He has published several Rand Corporation Research Reports of which the following are probably most significant: An Economic Analysis of New York City's Mitchell-Lama Housing Program, R-610-NYC,

June 1971; <u>Rental Housing in New York City</u>, Vol. II: "The Demand for
Shelter," R-649-NYC, June 1971 (with I. S. Lowry and B. M. Woodfill).

Dr. DeSalvo has edited the following book which also contains
an article by him entitled "The Economic Rationale for Transportation
Planning": <u>Perspectives on Regional Transportation Planning</u> (Lex-
ington: Heath, 1973).

He has delivered papers on two occasions at the Annual Meetings
of the Econometric Society and once at the Annual Meetings of the
Regional Science Association. Dr. DeSalvo has participated as a
discussant at meetings and conferences such as Conference on Research
Problems and Development in Urban Land Economics and Land Taxation
at the Lincoln School of Public Finance, Claremont Men's College,
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of Education at the University of Wisconsin, Madison, Oct. 20-22, 1972;
Session on the Dynamics of the Urban Property Market at the Allied
Social Science Associations Meetings, Dec. 30, 1972. He served as
Chairman of the Conference on Regional Transportation Planning at
the Rand Corporation, Jan. 24-27, 1971.

Dr. DeSalvo is 34, married, the father of two children, and
currently resides at 7812 N. Berwyn Avenue, Glendale, Wisconsin,
53209.

ABSTRACT

Introductory discussion of the <u>rationale for government intervention in private markets</u>, including efficiency theorems about competitive markets and deviations from efficiency caused by <u>economies of scale</u>, <u>externalities</u>, <u>public goods</u>, <u>uncertainty</u>, <u>incomplete information</u>, and <u>imperfect competition</u>. Elaboration and critique of the "<u>merit good</u>" rationale for government intervention into private markets. Reconciliation of "merit good" concept with externality and public goods. Statement of recently developed <u>theory of transfers</u> incorporating "merit good" idea. Survey of theoretical and empirical work bearing on "merit good" rationale for <u>publicly subsidized housing</u>. Discussion of efficacy of housing subsidies versus <u>cash transfers</u>. Brief presentation of <u>rent-certificate</u> proposal for providing subsidized housing. Bibliography contains all major references bearing on the issue.

Note: Key words underlined.