Abstract

The conventional justification for public provision is market failure. This paper argues instead that the rationale for public provision of goods is the existence of utility interdependencies across demanders: individuals choose what goods are public at the constitutional level based on degrees of utility interdependence in consumption. The paper first develops an analytical argument for shifting from non-excludability and joint consumption to utility interdependence in the analysis of public goods. It then presents a model of the constitutional calculus concerning modes of goods provision, and applies the model to simple choice scenarios. Broad policy implications of the model are drawn. In particular, a constitutional theory of public goods asserts the need for careful institutional design and definition of public powers more strongly than the market failure view.

Keywords: Public goods; Constitutional economics; Public choice; Utility interdependence

JEL classification: H41; H40

1. Introduction

Today, the wisdom that the market accomplishes economic tasks more efficiently than the government goes largely undisputed. However, governments do traditionally provide goods and services that have other significant dimensions besides purely economic ones. Whether or not their provision is legitimately within the domain of public action cannot be determined on the basis of a narrow criterion of economic efficiency, a point recognized for example by Bator (1958).
The conventional justification for the public provision of goods is market failure. Conversely, market-oriented critics of public goods theory hold that market failure is, more often than not, wrongly diagnosed. In any case, it is a lesser evil as compared to government failure. The ill consequences of the latter are, in fact, compounded by the coercive nature of public action. All these arguments focus on the allocative properties of public and market outcomes. In this paper, I shall instead argue that the rationale for public involvement in the provision of goods is the existence of significant utility interdependencies across the consumers of these goods. These utility interdependencies reflect the non-economic – cultural, historical, ethical – dimensions of truly public tasks.

Economics is ambivalent on the issue of why such utility interdependencies exist, and how they change. Two antithetical approaches can be found in Arrow (1951) and Sen (1970). For the former, individual preferences are given; for the latter, the genesis and content of preferences are important aspects of the study of economic behavior, in general, and collective choice, in particular. I do recognize the importance of developing an understanding of how individual’s utility orderings, and utility interdependencies, come about in the context of a theory of collective choices. However, in this paper I will not attempt to formulate a general theory of collective choice. Instead, I will deal exclusively with a specific subset of collective choices, that is, the choices determining the publicness of goods.

I will try to throw some light on how utility interdependencies affect the choice between public and private provision, and argue that the appropriate theoretical constructs for doing so belong to constitutional economics. My argument applies, therefore, to the choice of public or private control over the productive process. The enforcement of an ‘efficient’ outcome, for activities that have been assigned to the state at the constitutional level, is a matter of post-constitutional choice, and is not considered in this paper.

It is in differentiating between these two choice levels – i.e., the constitutional choice among public and private modes of provision, and the post-constitutional choice of options within each – that this paper differs substantially from other contributions such as Demsetz (1964) and Williamson (1997). In these contributions, the issue of choosing the appropriate mode for provision of public goods and services is phrased in terms of the comparative efficiency of markets and the state. My argument is that the preference for public provision is manifested as a constitutional choice and, as such, not subject to efficiency considerations. Efficiency criteria apply only to the choice of the lowest-cost supply arrangements, once the mode of provision – market or state – has already been selected.1

The implications of the fact that individuals do value certain forms of provision per se for the theory of public goods have not been drawn. This paper tries to fill the gap. Modeling the choice of public provision as a constitutional choice explains why individuals may be willing to accept public provision and financing decisions which deviate from their actual, post-constitutional preferences. It also provides a much stronger

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1 It is in the context of post-constitutional choices that the cost-minimization issues identified by Demsetz and Williamson become relevant. Demsetz considers a world of high exchange and police costs and identifies institutional arrangements, such as the firm or sale-in-combinations, which will lower these costs. Along similar lines, Williamson focuses on the role transaction costs play in determining the organization of provision, i.e., through public bureaus, markets or the firm.
rationale, than the market failure hypothesis, for the careful definition and delimitation of the prerogatives of the productive state: in constitutional economics, institutional design becomes the central issue for public goods theory.

The paper, first, develops an argument for shifting the analytical emphasis of public goods theory from the technology-dependent factors of non-excludability and joint consumption, and their impact on efficient resource allocation, to the subjective element of utility interdependence (Section 2). On that basis, it formulates a constitutional choice model for goods characterized by various degrees of utility interdependence (Section 3), and illustrates the model under simple choice scenarios (Section 4). Finally, it examines some of the broad policy implications of the model (Section 5).

2. Public goods theory: an empty box

Public goods are conventionally, and correctly, understood as a special case of externalities. However, the theoretical treatment of public goods and externalities is inconsistent. For public goods theory, technology is the focal factor. Conversely, it is utility interdependencies that are emphasized in the treatment of externalities.2 This inconsistency can be traced back to the seminal contribution of Samuelson (1954, 1955) with its conceptual identification of a class of public goods based on the objective characteristics of zero marginal cost of provision to an additional consumer (joint consumption) and non-excludability. But, paradoxically, even critiques of public goods theory and of market failure – for example, Demsetz (1970) and Goldin (1977) – have maintained a focus on allocative efficiency, and on the technological aspects of public good provision having a bearing on efficient provision.

I do not need to discuss in any detail the Samuelsonian theory of public goods and its critiques, surveyed for example in Mueller (1979), Sandler (1992), and Cornes and Sandler (1996). I wish, though, to emphasize an important point, namely that traditional public goods theory is unable to distinguish effectively between public and private goods, and so to explain the fact of public provision. Public goods theory is an empty box. This point is important because it provides a strong analytical basis for shifting the focus of public goods theory from allocative efficiency to distributive equity issues by using a constitutional economics approach.

The lack of a convincing distinction between public and private goods is most evident in the well-known analogy between joint consumption and joint supply goods. This analogy has been employed to show that the private market solution to the problem of joint consumption goods is allocatively efficient.3 Conversely, I argue that, not only in the case of traditional public – joint consumption – goods but also of private – joint supply – goods, there are allocative inefficiencies in the form of underprovision of these goods that the market may be unable to address. This underprovision is a consequence of the fact that consumers of both joint consumption and joint supply goods may free-ride. It can be shown that such free-riding does not preempt profit maximization by the firm, as each

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2 See, for example, Buchanan and Stubblebine (1962).
3 See Demsetz (1970).
supplier can still price at marginal cost. Free-riding does, however, create a wedge between marginal benefit and price for the goods on the demand side. Inequality of price and marginal benefit entails redistribution through subsidization of some consumer group by another. For both joint consumption and joint supply goods, the main problem with free-riding is not that suppliers cannot exact an appropriate price for provision. The critical problem with free-riding is that it may result in underprovision of these goods with distributive implications even when suppliers are able to price at marginal cost.

The analogy between joint consumption and joint supply goods shows that the fulfillment of the formal condition of equality of marginal benefit and price for each consumer may be impossible or, at best, difficult to achieve also in the case of joint supply goods. The issues encountered in the provision of conventionally public goods are not essentially different from those encountered in the provision of some typically private goods. Following the logic of conventional public goods theory, the analyst is left with an empty box, while still being faced with the need to explain the fact of public provision.

The fact that conventional market allocative and distributive criteria may be violated both in the case of conventionally ‘public’ and ‘private’ goods, makes it clear that these criteria cannot guide the choice between public and private provision. A theory of public goods should provide an explanation of why the distributive implications of a divergence between price and marginal benefit which may be observed both for traditionally public and private goods are significant in some cases, while they are not, and can be left to the play of market forces, in others. While the broad issue of what is an equitable or desirable distribution of wealth, from a social standpoint, exceeds the scope of this paper, the study of constitutional choices concerning public provision of, and modes of access to, goods offers an interesting angle from which problems of distributive equity can be examined. I will now try to provide a framework for such an analysis.

3. Choice and publicness

Section 2 has argued that problems of distributive equity characterize both goods that are privately provided and conventional public goods. On what basis is, then, the decision made to accept market solutions which may deviate from marginal utility pricing as ‘fair’ in some cases, while, in other cases, they are deemed inadequate? What motivates the choice of public provision? In order to answer these questions, we need to bring back consistency into the treatment of externalities and public goods. This implies to move away from supply side issues of allocative efficiency in the treatment of joint consumption goods.

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4 The reader is referred to Appendix A for a demonstration of these arguments.

5 Of course, demand-side solutions to the free-rider problem exist, and have been discussed in the literature. For example, Buchanan (1965) shows that specific consumption-ownership-membership arrangements or ‘clubs’ can be such a solution for goods whose range of publicness is finite. Again, admittedly, the theory of clubs applies only to those organizations of membership for which exclusion is ‘possible.’ or – I should rather say – desirable. The central point of this paper is that such desirability depends on the extent of utility interdependence across consumers of the good, and is what determines, at the constitutional decision-making level, the fundamental choice between public and private provision. The theory of clubs is concerned, instead, with ways of arranging optimally for the private provision of goods at the post-constitutional stage.
I would like at this point to direct attention towards those subjective costs, or utility losses, that non- or insufficient provision causes to those who demand the good. It must be emphasized that, in the case of ‘true’ public goods, each individual does not simply wish to assure that other individuals pay for their consumption, but rather that they do in fact consume a certain quantity of the good. The essential difference between private and public goods is not in the fact that the cost of policing exclusion tends to be much higher for the latter, but rather in the nature of what individuals wish to police: undisturbed own-consumption, in the case of private goods; socially desirable levels of consumption, in the case of public goods.

While still adhering to the basic behavioral postulate of self-interest, a rationale for the fact that individuals have preferences for the patterns and levels of consumption of their fellow-men can be found in the notion of utility interdependence. The main differentiating element between joint supply and joint consumption goods is that significant utility interdependencies across demanders exist for the latter type of goods. The latter are goods for which there are significant, and positive, externalities from consumption. We can reasonably expect individual i not to care about whether or not meat or wool – typical joint supply goods – are available to individual j; conversely, we would expect i to be concerned about his neighbor having access to basic education, health services, etc. It is the fact that individuals value other individuals’ consumption of certain goods that makes these goods suited for public provision. The choice of having goods publicly provided is essentially linked to the existence of utility interdependencies in consumption. The nature of this choice needs, at this point, to be clarified.

While Samuelson’s public goods theory is an attempt to cut a role for governments within the theory of the market, the argument of this paper is that both the scope of market transactions and the extent of government prerogatives are defined by ‘constitutional’ choices. The choice as to the ‘publicness’ of a goods is, in fact, one of the broader set of choices that define the role of the government in a democratic society, namely the choice that specifies the domain of the productive state.6 This choice logically precedes market interaction, and, therefore, is not motivated by market failures.

The factors affecting the constitutional choice between public and private provision are the costs of equal and selective access. Both these costs are subjective or opportunity costs and depend on the existence of utility interdependencies across demanders of a good.7

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6 Buchanan (1975) describes the constitutional mix as inclusive of limits on behavior, property rights, terms and conditions of enforcement of these (protective state), and the rules for provision and financing of public goods (productive state). While Buchanan certainly recognizes the role of constitutional choice in defining the boundary between the public and private arena, he still adheres to a conventional notion of public goods. That is to say, in his approach, goods that might be selected for public provision, would still need to be characterized by (some extent of) jointness of consumption and non-excludability. They would have to be ‘public goods’ in the Samuelsonian sense. In other words, Buchanan does not take the leap to a subjective choice theory of public goods that would appear to be the natural consequence of his approach, and analyzes the ‘public goods’ problem in the context of a post-constitutional choice model.

7 Buchanan (1969) clarifies the distinction between ‘choice-influencing’ (subjective/opportunity) and ‘choice-influenced’ (objective) costs. Objective costs, which are emphasized in conventional analyses of allocative efficiency in the provision of public goods, cannot be a determinant of the constitutional choice to have some goods publicly provided: objective costs are the consequence, not the determinant of choices. Choices are influenced by subjective opportunity costs.
For the sake of simplicity, let us suppose that the choice of having the market provide a good is equivalent to the selective access option. This assumption is justifiable on the basis that private firms, not disposing of the coercive power to solve authoritatively the free-rider problem, will provide the good only to those willing to pay a positive price. We also assume, as in Brubaker (1975), that pre-production commitments are too costly. Correspondingly, let us assume that government provision is identified with equal access, with the physical cost of good production being covered by coercive imposition of a tax on each member of the collectivity. This will not necessarily be equal to the marginal benefit of each individual, which is unknown and unascertainable.

The cost of selective access is equal to the loss of utility an individual attaches to the probability that he and/or others may not be provided a sufficient quantity of a good under certain modes of provision. This defines the opportunity cost of the selective access choice. I shall call the cost of choosing the selective access option cost of non-provision, C_{NP}. Of course, an individual’s loss from non-provision of a good is greater the higher his expected total benefit. Total benefit, if utility interdependencies are significant, also depends on other individuals’ enjoyment of a good.

In the following model, I assume that, at the constitutional decision-making stage, each individual chooses behind a veil of uncertainty, and does not know whether he will be able to pay for a good in post-constitutional settings. i and j, in my model, indicate respectively individuals who are able to pay and individuals who are not. i and j also indicate alternative post-constitutional scenarios, in terms ability to pay, as they are considered by each individual at the constitutional decision-making stage.

The cost of non-provision is formally expressed as follows:

\[ C_{NP} = C_{NP}(U^e(G_i, G_j), P[G_{ij} - G'_{ij} < 0]), \]  

\(8\) At a choice level that is logically prior to the market, which we are arguing to be the case for the choice of the mode of production of certain goods, marginal calculus does not make sense because individuals are not choosing in degrees but in global terms. A marginal choice is possible only when actual alternatives are compared on the basis of the specific outcomes attached to them. The extent of satisfaction those outcomes may provide to the chooser is, at least loosely, measurable, and, being the choice not in ‘all or none’ terms, alternatives may be combined to achieve the maximum utility. This is typically the situation individuals face in the market.

On the contrary, in assessing at the constitutional stage the opportunity cost of alternative distributive arrangements, individuals consider the total expected benefits from enjoying a particular good. The reason for this is intuitively simple. When facing the choice of having a class of goods publicly provided under an equal access regime, each member of the collectivity is unaware of what the market price of the goods, or alternatively his tax share, will be in the post-decision setting. He only knows that, in the case of private provision, the market will not provide him with any of the good if he is not willing to pay the market price for the good, and that, under public provision, the government will let him enjoy the good even if he does not pay the tax. Some other sanction – other than the deprivation of the good enjoyment – will be imposed on him in the latter case. The individual also knows that the same alternative applies to all other members of the collectivity he belongs to. Conversely, the individual is aware of the fact that the State can ‘force’ him to subsidize others’ consumption under equal access provision, while the market cannot.

The notion of a veil of uncertainty, as also employed in Buchanan and Tullock (1962) and Buchanan (1975), is closely related to the veil of ignorance construct used by Rawls (1971) in deriving principles of justice from a contractual process.

10 Essentially, I am assuming that i and j have the same preferences, so that I can use them as the same individual. This assumption is only for the purpose of simplifying the presentation of the model. It is not necessary for the validity of any of its conclusions.
where $U^e$ is the expected total utility from good G to individual $i, j$; $G^*_{i,j}$ is the quantity of good G available to individuals $i, j$; $G^{*}_{i,j}$ is the quantity of G available to individual $i, j$ that is thought to be adequate by individual $j, i$; and $P[G_{i,j} - G^{*}_{i,j} < 0]$ is the probability that the quantity of G actually available to $i, j$ will be less than that considered adequate by $j, i$. $P$ varies from 1 (selective access) to 0 (equal access).

The total cost of non-provision, $C_{NP}$, depends on the expected foregone utility of G for any individual $i, j$. $C_{NP}$ is an increasing function in $P[G_{i,j} - G^{*}_{i,j} < 0]$. If the full spectrum of good distribution methods is considered, $C_{NP}$ is represented by a downward sloping curve as we move along the spectrum of a good’s distribution methods from selective to equal access, as in Fig. 1. The expected loss from non-provision is minimized under equal access.

The cost of choosing equal access is, instead, equal to the loss of utility that each individual attaches to the probability of having to pay more than the total utility he may attain from a good, including the utility he may derive from other people’s enjoyment of the good. It must be noted that, in the context of constitutional choices, the burden of cross-subsidy is the disutility that an individual attaches ex-ante to the possibility of having to pay more than what he values a good for, and not the cross-subsidy that he actually ends up paying in post-constitutional settings (which he does not know).

![Fig. 1.](image-url)
The cost of cross-subsidy – which is defined only for the possibility of being \(i\) in the post-constitutional stage, as \(j\) does not have the ability to pay – is expressed by the following function:

\[
C_{Su} = C_{Su}(U_i^e(G_i, G_j), P[p_{G}G_i (or t) - U_i^e > 0]),
\]

where \(U_i^e\) is the expected total utility of good \(G\) for individual \(i\); \(G_{i,j}\) is the quantity of \(G\) consumed by \(i, j\); \(p_{G}\) is the price of good \(G\); \(t\) is the tax imposed to finance provision of \(G\); and \(P[p_{G}G_i (or t) - U_i^e > 0]\) is the probability that the cost of \(G\) to \(i\) will be greater than his expected utility from \(G\). \(P\) varies from 0 (selective access) to 1 (equal access).

The total cost of cross-subsidy is an increasing function in \(P[p_{G}G_i (or t) - U_i^e > 0]\), and is represented in Fig. 1 as \(C_{Su}\). It must be noted that, if utility interdependencies are small, the cost of cross-subsidy is high, and increases rapidly, even for a minor deviation from selective access. The \(C_{Su}\) curve will have a steeper upward slope than in Fig. 1. A steeper shape of the curve is easily explained. Low utility interdependencies are reflected in individual’s expectations that he must forego increasing amounts of net utility as he moves away from selective access. On the one hand, as he shifts away from selective and towards equal access, the individual’s loss of utility from tax payment rises. On the other hand, because utility interdependencies are low, the value the individual attributes to other’s consumption decreases rapidly as larger shares of good are provided for free, under equal access arrangements. The net effect is a rapidly increasing expected cost of cross-subsidy.

4. Some choice scenarios

It might be helpful to illustrate the constitutional choice concerning modes of good provision under a few alternative cost scenarios. In the following, I shall refer to selective and equal access ranges as, respectively, those portions of the goods distribution spectrum where goods are mostly provided privately or publicly.

4.1. The individual’s expected total benefit from a good is low, and so are expected utility interdependencies

This is normally the case for those goods classified as private in traditional economic literature. The total expected benefit from bread, for example, including the expected benefit from other individuals’ enjoyment, are low, given that, under normal circumstances, the individual has a realistic perception of the ready availability of substitutes that will equally satisfy his and other individuals’ need for food.\(^{11}\) This implies that the opportunity cost of having bread selectively distributed is also low.

In the extreme case, in which \(i\) expects not to value at all \(j\)'s consumption of \(G\) in post-constitutional settings, \(dU_i^e/dG_j = 0\) throughout the spectrum of the good’s distribution

\(^{11}\) Of course, in a situation of emergency (war, famine, etc), even typically private goods such as bread may become public, in the sense that their provision becomes (in absence of suitable substitutes) necessary to the very survival of a people. In anticipation of these cases, constitutions or legislative acts authorize government provision under equal access of the rationed goods.
methods. This case is illustrated in Fig. 2 by $C_{NP}$. This is a downward sloping line, with intercept, on the selective access axis, at the level of utility associated with own-consumption. $C_{Su}$ overlaps with the selective access axis, as the expected cost of cross-subsidy tends to infinity for any deviation from selective access. The optimal solution is unequivocally selective access.

If utility interdependencies exist but are small, the cost of non-provision drops very sharply, as in $C'_{NP}$, Fig. 2. In this case, $C_{Su}$ has a steep upward slope ($C'_{Su}$) within the selective access range. The shape of $C'_{Su}$ does not need to be further explained.\(^\text{12}\) The sharp drop in $C'_{NP}$ reflects the fact that $dU_i^e/dG_j$, and, therefore, the utility that is expected to be foregone by $i$ if $G$ is underprovided to $j$, decreases rapidly for any small deviation from selective access. The rational constitutional choice is mostly selective provision.

**4.2. Expected personal total benefits are high but utility interdependencies are low**

This case is, in fact, the same as the case discussed in 4.1 with $C_{NP}$ defined for a higher level of expected total utility. A typical good in this category is feeder roads leading from

\(^{12}\) See Section 3.
an individual’s private property into the main street. In this case, the individual will want to assure that he will be provided with the good under any circumstances, including his inability to pay, but he will not be willing to subsidize other individuals’ consumption if they are unwilling or incapable of paying.

This is represented diagrammatically (Fig. 2) by the same $C_{Su}'$ curve, that rises sharply in the selective access range; $C_{NP}'$ has the same shape as, but lies above, $C_{NP}'$. In this case, the choice between equal and selective access is not unambiguous: probably, the selected provision mix will be situated somewhere in the middle of the distributive spectrum (for feeder roads it might be closer to selective access).

4.3. The individual’s expected benefit from the good is high, and so are expected utility interdependencies

This is the case with goods such as education or defense, the total expected benefits from which are not only extremely high but also essentially dependent on their availability to others: the unhappiness of the wise man in a world of fools is only increased by his knowledge, and so is presumably the unhappiness of the man who manages to save his own land from destruction in a war but is surrounded by enemies.

For the above goods, $C_{NP}$ tends to infinity for any small deviation from equal access. By contrast, the $C_{Su}$ curve tends to be fairly flat over a broad range of the good’s distribution spectrum, the reason being that high utility interdependencies generate the expectation that $pG_{i}(or t) - U_{e} \approx 0$ – i.e., that cross-subsidy cost will be low – throughout the spectrum of goods’ distribution methods. As illustrated in Fig. 3, the rational choice is that the good be provided mostly under equal access.

It must be noted that in none of the constitutional cases considered, the zero marginal (objective) cost condition, which is the distinguishing characteristics of public goods in the Samuelsonian approach and its critiques, has an effect on individuals’ choices as to the public or private provision of the good. It is only after the decision of producing the good privately has been made, that the zero marginal cost condition becomes relevant to the supplier, in that it opens for him the possibility of pure gain in competitive disequilibrium and non-competitive markets.\footnote{Let us momentarily release the simplifying assumption that public provision implies equal access. In the post-choice context, the zero marginal (objective) cost might be relevant for a public supplier of the good as well. It will be one of the factors to be considered in choosing the mode of good provision (e.g., equal access or selective access with imposition of user’s charges).} In the choice context that is the object of our analysis, however, the relevant costs are of a different nature: they are subjective opportunity costs rather than physical outlays.

5. Implications and conclusions

Conventional public goods theory is affected by a logical pitfall: it attempts to derive a rationale for the public provision of goods and services from an objective identification of a class of goods which the market would ‘fail’ to provide. In contrast with the traditional approach, this paper argues that a role for the productive State cannot be derived as a

\footnote{Let us momentarily release the simplifying assumption that public provision implies equal access. In the post-choice context, the zero marginal (objective) cost might be relevant for a public supplier of the good as well. It will be one of the factors to be considered in choosing the mode of good provision (e.g., equal access or selective access with imposition of user’s charges).}
residual of market choices: that role is, in fact, identified through a constitutional choice which specifies the boundaries between the public and the market arenas. A few specific inferences are drawn from the preceding analysis:

1. zero marginal (objective) cost, or jointness of consumption, is neither a sufficient nor a necessary condition for the choice of having the public sector provide some goods. Zero marginal cost is relevant to the supplier’s pricing decisions, only after the modes of production and distribution of the good have been decided upon;
2. the choice of whether to have a good publicly or privately provided depends on the opportunity costs of equal and selective access. These opportunity costs are independent of the physical or technological circumstances of producing a good. They are rather linked to the subjective benefits expected from a good, including the benefits to people other than the choosing individual in the measure in which they enter the his or her utility function. In other words, the costs of equal and selective access depend on utility interdependencies in consumption;
3. utility interdependencies play a primary role in the constitutional choice of having a good publicly provided. This constitutional choice aims at minimizing interdependence costs.

Fig. 3.
The definition of public goods adopted here is conceptually broader than Samuelson’s in that it is not limited to the objectively identifiable category of goods characterized by non-excludability and jointness of consumption. It encompasses physically congestable goods as well as non-congestable goods if they are chosen to be publicly provided. Our definition of public goods may, therefore, overlap with the Samuelsonian one: even though non-excludability and jointness of consumption are not necessary and sufficient conditions for publicness, some non-rivalrous consumption and non-excludable goods may be selected for public provision. Nevertheless, the presence of those technological features does not impose that goods must be publicly provided.

In the way of a conclusion, let me now highlight a few issues and implications of the approach to public goods set forth in this paper. First, there is the issue of how the theory accommodates the fact of changing preferences, and changing degrees of utility interdependence. Once the constitutional choice of public provision has been made, individuals are locked into it. However, their perception of utility interdependence in the consumption of goods may, for whatever reason, change over time.14

One of the reasons for choosing public provision of certain goods at the constitutional level is that individuals may wish themselves and others to be bound by an overriding contract as a safeguard against changing preferences. The constitutional choice that a good be publicly provided not only reveals that utility interdependencies are high, but also a belief that they must be high. In other words, in voting for the public provision of a good, each individual expresses a normative judgment on what post-constitutional preferences for that good ought to be like.15 Of course, there can be instances when, at the post-constitutional stage, there is a radical shift in preferences, and perceived utility interdependencies. If this shift is non-transient, and is spread across a large number of individuals, a constitutional revision of the role of the state may be called for.

The above issue of a changing ‘need’ for government provision is different from that of the appropriate arrangements for provision within either the public or market arena. If cost savings can be achieved, at the post-constitutional stage, by a system where actual production of the good is contracted out to the private sector, while suitable public access is maintained through public regulation/subsidy, this should be preferred. The term ‘public provision’ is used here in a broad sense to indicate modes of provision that can assure access under the monitoring of a public sector mechanism, not necessarily direct production. And, suitable public access does not necessarily mean equal access. While, in the paper, for the sake of simplicity I have identified public provision with equal access,

14 Social/cultural paradigm shifts, changes in disposable income, or interest group pressures are among the possible causes of these changes.
15 To the extent that a constitution is well designed and provides sufficient checks against a government’s abuse of its prerogatives as a provider, the fact that public provision and its limits are ruled by the constitution should provide an obstacle against inflation of public budgets due to interest group pressures. Only goods that are ‘truly’ public would be publicly provided.

Take Wagner’s Law of expanding state activity. Wagner’s Law tries to capture the influence on public budgets of technical factors, such as an increase in population density and urbanization, as well as a growing acceptance of social-policy objectives in fiscal affairs. To the extent that these phenomena are the symptom or effect of a radical, and sufficiently general, change in the preference for governments and what they should do, I would expect Wagner’s Law to hold in the context of a constitutional system as the one discussed in this paper. However, I would assume such a generalized change in individual preferences for social-policy not to be the result of mere interest group pressure, but of more complex society-wide influences.
in reality, public provision will entail some degree of selectivity of access compatible with a socially desirable distribution of costs. Only for some essential or basic good, fully equal access might be enforced on the basis of a constitutional provision.

What will be the implication of the constitutional theory of public provision formulated in this paper for the size of government? As utility interdependencies may be significant across a wide range of goods, is the theory advocating, in principle, a larger role for the government? The answer is in the negative. The theory here proposed attempts essentially to provide a reasonable explanation for why, historically, certain goods have been selected for public provision. While it is true that there is a wide range of goods for which utility interdependencies in consumption exist, it is only for those goods characterized by very high expected benefits and utility interdependencies that public provision and equal access are expected to be chosen at the constitutional level. These goods may not differ significantly from those that have, traditionally, been publicly provided. For other goods characterized by utility interdependencies, a whole range of arrangements, from public/private to wholly private provision, might emerge. One general implication of the theory is that the state should not be involved at all in the provision of goods for which market distributive outcomes are likely to be acceptable, even though not they do not equalize costs and benefits at the margin.\(^{16}\) This is the case, for example, of joint consumption goods characterized by low utility interdependencies.

In all cases when government involvement can be expected, Buchanan’s (1975) warnings against the threat of the Leviathan still hold. A constitutional theory of public goods can assert the need for careful constitutional design, and delimitation of public powers, much more strongly than a theory based on market failure. The reason for this is that, in constitutional economics, the power of provision rests on fully consensual ground, and, therefore, can be impeached by consensus. The market failure approach, on the contrary, sees public provision as legitimated by an inescapable failure of the pricing mechanism. It provides a basis for government powers that is outside the voluntary process of constitutional agreement, and beyond its reach.

In the logic of constitutional economics, the crucial issue is no longer efficiency, but appropriate institutional design. For goods that are not truly public, privatization and deregulation of provision are appropriate. However, for goods characterized by significant utility interdependencies, policy-choices at the post-constitutional level should rather focus on identifying cost-reducing methods through which an acceptable level of access can be maintained. The solution will generally entail some role for the state. While, depending on the desired level of selectivity of access, some market devolution may be called for, this should not be complete.

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\(^{16}\) This means that, as Bator (1958) also puts it, the inefficiency of markets is hardly a ground for their rejection.
anonymous Referee for insightful comments that helped me clarify the arguments presented here. Finally, I am grateful to Nimai M. Mehta for his patient reading of, and comments on several drafts of this paper. This work was written in my personal capacity, and does not in any way reflect the official position of the Asian Development Bank. The responsibility for the views expressed in it, and any errors, is solely my own.

Appendix A

The analogy between joint consumption and joint supply goods has been employed to show that the use of price discrimination by market suppliers allows to reach allocatively efficient outcomes for both types of goods. Arguments of efficient price discrimination rely on the contrived assumption that private producers of joint consumption or joint supply goods are always able to assess correctly the demand of individuals consuming these goods. Therefore, these suppliers do not need to exclude the marginal consumer from enjoying the good at a zero-price (such an exclusion is the well-known cause of market-failure).

I will show here that price discrimination does not address the issue of underprovision, i.e. allocative inefficiencies may characterize both public and private goods equilibria with price discrimination. I will also show that underprovision, in a competitive market setting, is significant only for demanders not suppliers of these goods. There are two parts to my argument. First, sellers of both joint consumption and joint supply goods do not, in a competitive market setting, have an incentive to correctly monitor demand for these goods. Second, the threat of free-riding exists for both joint consumption and joint supply goods.

Fig. 4 illustrates the price-discriminating equilibrium by reference to a classical example of joint supply goods. The demand curves for the joint supply goods are $D_1$ (bones), $D_2$ (wool), and $D_3$ (meat). The demand for the joint product (sheep) is equal to $D_T$, which is the vertical summation of the demands for bones, wool, and meat. $D_1$, $D_2$, and $D_3$, in Fig. 4, can be also interpreted as the demand levels of three individuals, or homogeneous groups of individuals, for a non-rivalrous good, and $D_T$ as the collective demand for the same. The industry supplying the joint consumption/supply good is assumed to be perfectly competitive.

I suppose that some demanders of the joint consumption good, or demanders of one of the joint supply goods, may conceal their ‘true’ preferences. In Fig. 4, the dotted lines are the ‘pseudo’ demand of these free-riders ($D'_1$) and the ‘pseudo’ demand for the joint consumption/supply good ($D'_T$). The equilibria, both for the case of correct and ‘pseudo’ revelation of consumers’ preferences, can be easily worked out. Frame (a) in Fig. 4 refers to the individual supplier/firm and frame (b) to the industry.

Consumers, both in the joint consumption and joint supply case, benefit by revealing a lower demand than the real. In the ‘pseudo’ demand-supply equilibrium, purchasers of meat and wool pay higher prices ($p_3' > p_3; p_2' > p_2$) for a smaller quantity ($q' < q_T$). The demanders of bones get a smaller quantity ($q'$) at a zero price rather than a bigger quantity ($q_T$) at a positive price ($p_1$). However, bone demanders are net gainers, since their loss in consumer’s surplus (measured by the triangle H) for a lower consumption of
bone is more than compensated by the gain for no longer having to pay a price for the good. Bone demanders can do no better by revealing their preferences. And meat and wool purchasers, given that they do not know about the free-riders, perceive themselves to be at an equilibrium point. Their marginal benefit equals, in fact, the price they are respectively charged. The same reasoning applies, *mutatis mutandis*, to the joint consumption case.

Would a price discriminating supplier want to strictly police submarkets and identify free-riders at provision level \( q^\ast \)? The answer is in the negative. In so far as the equality

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p = p_1 + p_2 + p_3 = p_1^* + p_2^* + p_3^* = MC
\]

is satisfied, suppliers do not have any incentive to monitor the relative composition of demand. The private supplier of a joint consumption/supply good does not have any incentive to separate markets correctly and to monitor the composition of the demand for this good because, under conditions of perfect competition and free market entry, he cannot appropriate any above normal profits in the long run. Each individual supplier can do no better than selling quantity \( q_F \) of the joint product at total price \( p \). Free-riding does not affect the individual supplier (frame (a), in Fig. 4), but rather determines the overall size of the industry.

For both joint consumption and joint supply goods, since suppliers are exclusively interested in enforcing marginal cost pricing and not a ‘fair’ distribution of the cost of production across consumers, free-riding cannot be assumed away. Furthermore, if policing of submarkets is costly, the competitive supplier of such goods may in fact prefer uniform pricing across consumers to price discrimination. It is only the demanders of the good that have in principle an interest in preference revelation. In our example, it is group 2 and 3 consumers who, were they able to ‘see’ the preferences of group 1, would have an incentive to exclude this group in order to obtain the higher level of good provision, \( q_T \).
and a ‘fair’ distribution of the burden of provision. However, as preferences for public goods are not revealed, consumers will stay at $q^*$. The price discrimination model shows clearly that it is not worthwhile for producers to correctly assess demand beyond the point at which the price for the joint consumption or joint supply good equals marginal cost, at whatever level of total good provision that might be. So, competitive suppliers can charge a zero-price to, and do not need to exclude, the marginal consumer in order to cover their marginal cost of production. In the absence of an incentive for suppliers to police submarkets, however, the fact that a joint consumption or a joint supply good may be provided for free to some consumers will leave room for free-riding. In other words, the realization of the marginal cost equal to price condition does not exclude, both in the case of joint consumption and joint supply goods, underproduction of the good (the conventional allocative inefficiency argument) and a distribution of its costs not conforming to the standard dictates of market ‘fairness,’ i.e. marginal benefit equal to price for each consumer.

References