

An Interest Group Theory of Public Goods

Provision:

Reassessing the Relative Efficiency of the Market and the State

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Abstract

Extending Brennan and Buchanan's model of leviathan, in which rulers represent the residual claimants of constitutionally unconstrained tax revenue, this paper presents a model in which the government provides the level of public goods that maximizes its revenue surplus as a function of the cost of emigration. To the extent that emigration is impeded, government converges toward pure monopoly provision, generating monopoly rents that facilitate the rent-seeking society. In contrast with Niskanen's model, in which governments tend to overproduce public goods, this model suggests that governments tend toward underproduction. This result undermines the notion that government must provide public goods to overcome the underproduction of private provision; in reality, government provision may be less efficient than private provision.

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I. Introduction

Since Samuelson (1954), it has been well-understood that the efficient quantity of public goods is that which equalizes the marginal cost of production with the sum of consumers' marginal rates of substitution. To overcome the free riding that may occur under private provision due to transaction costs relating to group size (Olson 1965), government provision is deemed necessary to achieve efficiency. However, this paper argues that like the private sector, government tends toward underproduction of public goods. As the residual claimants of constitutionally unconstrained tax revenue,

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rulers deliberately reduce public goods output and impose taxation that exceeds the cost of production, generating a revenue surplus to be consumed directly or transferred to interest groups in exchange for political support. In fact, the interest group theory of government depends on government deviating from the Samuelson condition, since it is by this mechanism that the revenue to be transferred to rent-seekers is generated; the surplus that remains after public goods and other constrained expenses are funded is lower under efficient provision than under monopoly provision, and may even be zero or negative depending on whether marginal cost is rising or constant and whether production entails sufficiently large fixed costs. Behaving as monopolists, rulers are able to reduce public goods expenditures to fund rent-seeking activity while still taxing the population at a rate that forestalls rebellion.

The ability of rulers to extract rent from taxpayers in this manner depends on the cost of emigration. Given heterogeneous consumer preferences and differential costs of public goods provision across jurisdictions, taxpayers are able to increase their consumer surpluses by migrating to jurisdictions that offer their preferred bundle of public goods and taxes (Oates 1999). This ability to migrate puts governments in a state of monopolistic competition with each other. Where emigration is costless, government provision converges toward the efficient level in the drive to compete for citizens (see Tiebout 1956; Oates 1969; Mieszkowski and Zodrow 1989). As the cost of emigration rises, governments converge toward the pure monopoly provision of public goods to generate monopoly rents. These rents are an essential element of the rent-seeking society, without which little or no surplus revenue would remain for rent-seeking activity after the funding of public goods under a balanced budget constraint.

The model of government underproduction presented here conflicts with the well-established model of budget-maximizing government advanced by Niskanen (1971), in which no discretionary surplus is generated and all revenue is spent on public goods, resulting in overproduction. Yet, bureaucrats who rely on funding from their sponsors must be distinguished from rulers who, motivated by self-interest and serving as residual claimants of tax revenue, desire to maximize their discretionary spending rather than their total budgets just as firms seek to maximize profits, not output. To the extent that a society is a rent-seeking one, this paper describes a government incentive to impose emigration controls,

complementing Shughart and Tollison (1986), who provide an interest-group-driven account of immigration law enforcement.

Despite the theory of government overproduction of public goods that currently dominates, the implicit position of statist seems to be that this is superior to the underproduction of private provision, perhaps determining that too much infrastructure, law, and national defense is better than too little. Yet, given the model of deliberate government underproduction advanced below, it is not obvious that consumers are better off under government provision than under private provision. When compared to the suboptimal quantity and higher pricing of government provision, private provision may be more efficient. The remainder of this paper develops the model of government underproduction of public goods as a means of facilitating rent seeking and then assesses under what conditions private provision outperforms government provision of public goods, showing that consumer welfare may be higher under private provision.

II. The Leviathan Model of Government

The interest group theory of government finds its roots in the economic theory of regulation pioneered by Stigler (1971), Peltzman (1976), and Becker (1983). It describes government rulers as economic agents who facilitate wealth transfers in the economy in exchange for remuneration from industries, firms, and other factions, with interest groups that are able to organize at a lower cost enjoying a comparative advantage in this process (Ekelund and Tollison 2001; McCormick and Tollison 1981). In this approach, government is assumed to choose the level of expenditures and the tax rate “that best serve the interests of those who control the government” (Niskanen 1997). Even government’s provision of public goods is viewed as motivated by self-interest (Olson 1993). Holcombe (1997; 2004) argues that state-provided public goods are a means to the end of pursuing the narrow interests of the ruling class, even if such activities are marketed to society by appealing to socially desirable or noble outcomes (Yandle 1983; Yandle 1999). Even if rulers control their total domestic outputs, some public goods will still be provided since even they derive utility from them (Brennan and Buchanan 1980).

The disposition of government, or “the mix between that share of revenues collected that is devoted directly to the production or provision of goods and services values by taxpayers-consumers and

that share directed to the provision of perquisites (pecuniary and nonpecuniary) to the politicians-bureaucrats” (Brennan and Buchanan 1980, p. 160), includes a great deal of the latter. Rulers may consume constitutionally unconstrained revenue directly or transfer it to interest groups in exchange for political support. This is possible because the power to tax in and of itself carries no obligations concerning spending and constitutional constraints governing the allocation of expenditures may be imperfectly written or imperfectly enforceable (Brennan and Buchanan 1980, p. 11); governments in general lack certain features possessed by clubs, which undermine their constitutional effectiveness in the provision of club goods (Leeson 2011). Rent-seeking requires expropriating taxes from citizens—for which they receive nothing in exchange—and so requires deviation from efficient provision, where citizens prefer to be. To the extent that the citizens do not benefit from certain expenditures, government is enabled to pursue them anyway due to its monopolistic position of violence in society, allowing it to ignore, weaken, or overturn constitutional constraints on expenditures. As noted by Leeson (2011), constitutional restraints are ultimately no match for incentives in shaping the behavior of rulers. They will pursue their own interests by increasing taxes and reducing public goods in order to generate discretionary income that facilitates rent-seeking activity. The results are a massive misallocation of resources in the economy (Harberger 1954), deadweight loss (Tullock 1967), depressed local property values (Oates 1969), and additional social costs that decrease society’s wealth (Posner 1975; Dougan and Snyder 1993).

Brennan and Buchanan (1980, p. 20) warn that “natural government is monopoly government, with all the implications that the word ‘monopoly’ suggests,” including reduced output, higher prices, diminished consumer surplus, and deadweight loss. Thus, they assert, “a more acceptable model for rational constitutional choice would seem to be one in which the political-bureaucratic process, as it is predicted to operate postconstitutionally, involves the maximization of revenues within tax constraints that are imposed through the fiscal constitution.” They continue, “If there are no constraints on the uses to which revenue may be put, revenue becomes equivalent to private income to the governmental decision makers” (Brennan and Buchanan 1980, p. 33). It seems clear that the decision makers of today enjoy wide discretion over the allocation of most, albeit not all, revenues, even in constitutional republics such as

the United States. They add, “If such constraints are operative but are independent of the tax rules which form the object of our study, we might also model government as attempting to maximize revenue, because revenue becomes a proxy for ‘surplus.’ . . . If government is assigned the authority to tax A , it will, under Leviathan assumptions, maximize the revenue it can obtain from taxes on this base. The power to tax commodity or good A is identical analytically to the assignment of a monopoly franchise for the sale of commodity A ” (Brennan and Buchanan 1980, p. 73). In short, we can expect governments to maximize their revenue whether or not constitutional constraints exist.

Meltzer and Richard (1983) cite several studies as evidence of monopoly power of government in the supply side of public goods, asserting that “Congress, bureaucrats, or ‘interest groups’ are able to raise government spending above the level that utility maximizing households or voters would choose in the absence of this monopoly power.” They note that this may be driven by a positive cost of information and organization, resulting in the rational ignorance of voters (Downs 1957). Oates (1999) also notes that empirical evidence suggests that consumer demand for public goods is highly price inelastic, a fact that rulers are perfectly willing to exploit. This model is one of both government size and government composition, which are jointly determined by rulers in producing the surplus-maximizing quantity of public. Where government has no monopoly power, the composition consists entirely of public goods; as this power grows, the composition becomes increasingly weighted toward private transfers. As cost of emigration increases, not only does the proportion of the budget allocated to private transfers increase, but the absolute level of public goods spending falls, holding all else constant. Eventually, total rent-seeking spending may even overtake total public goods spending.

This theory of government underproduction of public goods is at odds with the model of bureaucratic supply in Niskanen (1971, 1975), which holds that government tends toward overproduction. Yet, a chief difference between the two models is whether the decision makers are residual claimants of unconstrained revenue. Bureaucracy managers are constrained to spend all revenue within the narrow mission of the bureaucracy, as defined by sponsors. Lacking a profit motive, bureaucracies “must be centrally managed by the pervasive regulation and monitoring of the activities of the subordinates” (Mises 1944). Under such conditions, they cannot spend the budget

surplus on their own desires. In contrast, residual claimants are beholden to the population and have greater control over their revenue through adjustments to the tax rate. Niskanen's model, as described by Brennan and Buchanan (1980, p. 162), "achieves its surrogate equivalent of "surplus" by producing excessive quantities of G [government] . . . The model has been subjected to criticism precisely because it fails to allow for any diversion of revenues away from the financing of genuine public goods." In a more unconstrained environment, bureaucrats, like rulers, would reduce public goods spending to boost spending on rent-seeking activities. Niskanen (1975) later argued that bureaucrats were likely maximizing their discretionary budgets, more consistent with the model presented here, although he determines that this still results in too large of a budget and generally, too much output. In any case, Brennan and Buchanan (1980, p. 34) argue that "revenue maximization remains a suitable simplification of government behavior; for the state, led by residual claimant rulers, this suggests monopoly output and profits.

While much of the literature on rent-seeking describes the process by which interest groups lobby for regulations that increase their profits (see McChesney 2001), more can be said about how government is able to expropriate large sums of income from the citizens for the purposes of rent-seeking. In the following section, I present a model of public goods provision in which the government chooses the quantity of public goods that maximizes the tax revenue surplus within the constraints of the various political and economic factors it faces.

III. A Model of Government Behavior

In Peltzman's (1980) theory of the equilibrium size of government, he notes that a theory of the size of government should explain both democracies and autocracies since "as long as suppressing dissent is costly to a dictator, he ought to be sensitive to the popular support for his policies." The following model is agnostic with respect to the specific form of government, whether autocracy, oligarchy, or democracy; in all cases, its goal is to provide the level of public goods that maximizes the revenue surplus. Surplus is defined as:

$$S = R - G$$

Here, the surplus S equals total government revenue R minus constrained government spending G . S is not constitutionally constrained to be spent on G and so is available for discretionary use

by rulers. Alternatively, $G = \theta R$ where θ is the proportion of revenue that is constrained to be spent on public goods Q at cost C ; $0 < \theta < 1$. Then, from Brennan and Buchanan (1980):

$$S = (1 - \theta)R$$

Define $R = P^*Q$, where P is the price per unit of Q charged to taxpayers in the aggregate. Government prefers to maximize S by maximizing R and minimizing θ ; the taxpayers prefer that $\theta = 1$, and assuming no complementarity between public goods and the tax base, government prefers $\theta = 0$. If $\theta = 0$, rulers simply maximize R ; otherwise, they must consider the interaction between θ and R . Define θ as the following:

$$\theta = \frac{MC}{P}$$

Where MC is marginal cost of the public good ($MC = \frac{\partial C}{\partial Q}$) and P is the market's reservation price for that unit of Q , $MC = f(Q)$ and $P = f(Q)$. Then, I may define surplus as:

$$S = [P(Q) - MC(Q)]Q$$

The optimization condition is:

$$\frac{\partial S}{\partial Q} = 0$$

This is where:

$$\frac{\partial R(Q)}{\partial Q} = \frac{\partial C(Q)}{\partial Q} \quad (1)$$

Like firms, governments maximize their surplus by equating marginal revenue and marginal cost in the provision of public goods. As long as some revenue is constitutionally unconstrained, decision makers must be viewed as residual claimants bent on maximizing this surplus. However, governments are not all in an equal position to generate surplus. If migration of citizens is possible, they will migrate toward countries where the governments come closer to providing public goods at the efficient level (Tiebout 1956) for at least some public goods (Edel and Sclar 1974). This competition for citizens drives governments toward efficient provision. As migration becomes increasingly costly, whether by natural or state-imposed impediments, governments become a pure monopoly provider of public goods for its population. Thus, they provide public goods within the range between the M monopoly level Q^M and the E efficient level Q^E . A government that is constrained to do exactly what the citizens want provides Q^E . A government perfectly

unconstrained provides Q^M . A government that is able to exert some degree of monopoly power over citizens provides some output between Q^E and Q^M . Given this range of possible values for Q , government's optimization condition in equation (1) can be modified thusly:

$$MC = \gamma^i \sum MRS \quad (2)$$

The cost of emigration is represented by γ , $\frac{\partial C}{\partial Q} = MC$ and $\frac{\partial MC}{\partial Q} = c$, a constant. The values for γ under state and market provision are derived below. Most countries fall somewhere between the two; in deriving the government objective function below, such costs are treated as exogenous.

Government spending G is defined as:

$$Yt = PQ = G \quad (3)$$

Where Y is the gross national product and t is the tax rate. G is all government spending. Define g as the subset of G that is spent on public goods; $G - g = S$, the surplus, and:

$$g = MC * Q$$

$$G = P * Q$$

The surplus can now be defined as:

$$S = (Yt - g) = ([P(Q) - MC(Q)] * Q)$$

If it is free to do so, government satisfies equation (1), maximizing S where $MR = MC$. If emigration is costless, the market for public goods is perfectly competitive and government satisfies the Samuelson condition, setting $P = MC$, resulting in $S = 0$. Let government face the following inverse demand function for public goods, $P = f(Q)$:

$$P = \alpha + \gamma Q^\beta \quad (4)$$

$$\gamma \in \left[\frac{1}{\beta + 1}, 1 \right]$$

Here, taste parameters $\alpha > 0$ and $\beta > 0$. The exogenous variable γ indicates the degree to which citizens are able to migrate between countries; $\gamma = 1$ represents perfect immobility. The government chooses the level of Q that maximizes S , given γ and total cost $TC = C(Q)$:

$$S = [Yt - C(Q)]$$

Given equations (3) and (4), this is equivalent to:

$$S = [(\alpha + \gamma Q^\beta)Q - C(Q)]$$

We now have a government objective function. The demand function is:

$$Q = \left(\frac{P}{\alpha\gamma}\right)^{\frac{1}{\beta}}$$

Substituting the demand function in the objective function, we have:

$$S = \left[P \left(\frac{P}{\alpha\gamma}\right)^{\frac{1}{\beta}} - C(Q) \right]$$

Government maximizes its surplus where:

$$\frac{\partial S}{\partial Q} = P \left(\frac{P}{\alpha\gamma}\right)^{\frac{1}{\beta}} - \frac{\partial C}{\partial Q} = 0$$

This is equivalent to:

$$(\alpha + \gamma Q^\beta)Q - C(Q)$$

Or:

$$\alpha Q + \gamma Q^{\beta+1} - C(Q)$$

Then government maximizes its surplus where:

$$\frac{\partial S}{\partial Q} = \alpha + \gamma(\beta + 1)Q^\beta - \frac{\partial C}{\partial Q} = 0$$

The solution for Q as a function of γ is as follows. If $\gamma = \frac{1}{\beta+1}$ then:

$$\alpha + Q^\beta = \frac{\partial C}{\partial Q} \quad (5)$$

The government optimizes by setting price equal to marginal cost, equivalent to the case of perfect competition when emigration is costless. Alternatively, if $\gamma = 1$ then:

$$\alpha + (\beta + 1)Q^\beta = \frac{\partial C}{\partial Q} \quad (6)$$

This is equivalent to the optimization condition of monopoly, whereby marginal revenue is equal to marginal cost. Furthermore, equations (5) and (6) represent the upper and lower bounds for the provision of public goods, respectively. For all $\gamma \in \left(\frac{1}{\beta+1}, 1\right)$, provision falls between the efficient and the monopoly levels. We may define the optimal Q^* as a function of γ . As γ approaches 1, the optimal Q converges with Q^M . By the assumption that $\frac{\partial MC}{\partial Q} = c$ and solving $Q = f(\gamma)$:

$$Q^* = \left(\frac{c - \alpha}{\gamma(\beta + 1)} \right)^{\frac{1}{\beta}} \quad (7)$$

In the case of costless emigration ($\gamma = 1/(\beta + 1)$):

$$Q^E = (c - \alpha)^{\frac{1}{\beta}}$$

In the case of prohibitively costly emigration ($\gamma = 1$):

$$Q^M = \left(\frac{c - \alpha}{(\beta + 1)} \right)^{\frac{1}{\beta}}$$

Since all variables are positive, the optimal level of Q falls as γ rises and emigration becomes more costly. The government, fully exploiting the market power it derives from costly emigration, then charges the highest price the market will bear. Quantity falls and price rises as γ rises from $1/(\beta + 1)$ to 1. As the citizens become more mobile, the level of Q that maximizes government surplus rises even as the surplus falls. Given the demand curve in equation (4), it is clear that for the result in equation (7), the case where $\gamma = 1$ yields the monopoly optimization condition $MR = MC$. The case where $\gamma = 1/(\beta + 1)$ yields the perfectly competitive optimization condition $P = MC$.

In a closed economy, government can provide Q^M and charge taxpayers the monopoly price, spending the enlarged surplus on itself. This facilitates the rent-seeking society, which otherwise has less revenue to fight over, if any, at $Q^E \leq Q < Q^M$. This result tells us that government has a clear incentive to impede emigration. In any society where government-sponsored rent-seeking takes place, rents must first be generated by an upward-sloping public goods supply curve, deliberate underproduction of public goods, or both. Citizens will avoid such rent-seeking by abandoning such societies to the extent that it is efficient for them to do so, since consumer surplus is highest under efficient provision and falls as provision converges toward the pure monopoly output.

The distinction between public goods and private transfers is often a fine line and requires further elaboration. The above model suggests that, for instance, the US Armed Forces, the post powerful military in the world, is in fact smaller than it otherwise would be if it was only in the business of providing public goods, holding expenditures constant. Yet tremendous expenditures alone do not contradict the theory, which, after all, assumes high prices in excess of the cost of production. We must distinguish between public spending per se and the monetary cost of actual services rendered since only the latter provides a marginal benefit to taxpayers. The

proper measurement of public goods is not total expenditures but the cost of public goods and services rendered, which represents only a fraction of total expenditures in a rent-seeking society. In the case of defense, services provided by the US government constitute a public good, yet the defense budget also funds rent-seeking activity. Higgs (1988), quoting economist Herbert Stein, notes that “hardly anyone [in Congress] feels a primary responsibility for the defense program as the safeguard of our national security. Too many are able to look upon the defense budget as a big pot of money from which they can serve their special interests.” Higgs also quotes then-assistant defense secretary Lawrence Korb as stating that congressional pork costs “at least \$10 billion a year [for] things we don’t want, things we don’t need,” but which are included “to protect vested interest.” Lee (1990), addressing presumed underproduction of defense, even argues that rent-seeking by the military-industrial complex may serve to increase provision, driving society toward efficiency. Additionally, defense budgets as a proportion of total economic output have fallen since the Cold War (Sandler and Hartley 1999; McGuire 2000), even as government spending has increased.

Large government expenditures on law and defense are not in and of themselves evidence of high output of public goods, since so-called defense and law expenditures are not equivalent to defense and law services rendered. Backlogged court systems, prisons overcrowded with drug users, the militarization of domestic police forces, low criminal clearance rates, the release of violent recidivists into civilized society, the widespread use of plea bargains without legal representation, the dutiful enforcement of traffic laws, subsidies and favorable regulatory treatment for corporations, and large expenditures on welfare programs all seem to suggest the crowding out of actual law, defense, and infrastructure that serves public safety and the general welfare, and the overproduction of services that draw from surplus funds to finance private transfers to voter blocs, interest groups, and bureaucracies, not to mention the funding of mansions and personal staff for rulers, state dinners, exotic vacations, and grandiose monuments to government’s glory. Therefore, the economic justification for state provision cannot simply be that private markets will tend to underproduce public goods. Government also underproduces public goods, and at a higher price than in the private sector case. Given this fact, in the following section, I compare consumer welfare under efficient provision, government provision, and private provision of public good Q .

IV. Efficiency in Public Goods Provision

Comparing the private provision of public goods to the Samuelson condition sheds no light on whether consumers are better off under government production or private production given that the self-interest of those who control the state apparatus as well as the real-world imperfect mobility of labor and capital combine to pull government away from efficient provision. I offer the following postulates to be adopted before comparing efficiency under private provision and state provision of public goods:

- 1) The government level of public goods provision is not necessarily equivalent to the efficient level.
- 2) In gauging relative efficiency, it is proper to compare the private level of public goods provision to the government level of provision rather than to the efficient level of provision.
- 3) Relative efficiency in the private provision of public goods must be determined not on the basis of quantity or price alone but on the basis of both, in comparing relative consumer welfare.
- 4) Consumer welfare due to government transfers and theft should be ignored in comparing private and government provision of public goods by assuming complete dissipation.

As stated by postulate 1, it must be emphasized that the Samuelson condition cannot be taken *ex ante* to represent the level of public goods provision by government in a comparative analysis of state and market provision. Efficient state provision of public goods depends on the state successfully identifying the efficient level and then willingly providing it. Hayek (1945) calls into question whether such identification is possible. Furthermore, much of what the government does cannot be described as the provision of public goods; it is known that distributional considerations play a large role in the behavior of governments (e.g., Oakland 1987). Furthermore, efficient provision by government “implicitly assumes that . . . bureaus supplying [public goods] will behave like a competitive industry” (Niskanen 1971), an unrealistic assumption. Thus yields postulate 2: private provision should be measured against real-world government provision, not the Samuelson benchmark. By postulate 3, the measure of relative efficiency is determined by comparing consumer surplus under each. In comparing the private provision of public goods with state provision, it is sufficient to demonstrate that consumer welfare is greater under private provision to successfully

make a case for the efficiency of private provision from the consumer's perspective. Simply demonstrating that private provision underproduces public goods relative to the Samuelson condition does not settle the issue of whether it is inferior to the status quo of state provision. Government provision may take the form of either pure monopoly or of market division. I begin with the efficient provision (E) case. The supply of public goods is given by:

$$P = S(Q)$$

The demand for public goods is given by:

$$P = D(Q)$$

The intersection solves the market equilibrium price P^E and quantity Q^E . Note that:

$$D(Q) = \int d(Q)dQ$$

The consumer surplus under efficient provision is:

$$CS_E = \int_0^{Q^E} d(Q)dQ - P^E Q^E$$

By postulate 4, I ignore welfare generated by transfers made back to specific consumers in the economy, including government workers. By postulate 1, we cannot assume that government provision satisfies the Samuelson condition. By postulate 2, we must assess the efficiency of private provision by comparison with government provision as determined in the previous section. By postulate 3, we are left with the task of deriving consumer surplus as it exists under government provision, subsequently to be compared to private provision. Below, I derive consumer welfare under government and private provision.

A. Pure Monopoly Provision

If rulers represent the residual claimants of constitutionally unconstrained tax revenue, a government that constitutes a pure monopoly due to either prohibitively costly migration or its status as a unified world government will tend toward producing the monopoly output of law and defense at the monopoly price. This generates a surplus from which the government funds projects unrelated to the provision of nonrival, nonexcludable goods. As stated in postulate 1, the government level of public goods provision is not equivalent to the efficient level. By postulate 2, comparison of the level of private provision of public goods must be made to actual

provision under government, not the Samuelson benchmark. In the case of pure monopoly (M) provision, government rulers equate marginal revenue and marginal cost of production. Total revenue (TR) and marginal revenue (MR) are as follows:

$$TR = D(Q)Q$$

$$MR = \frac{dD(Q)Q}{dQ}$$

The optimization condition is:

$$\frac{dD(Q)Q}{dQ} = S(Q)$$

This yields equilibrium price P^M and quantity Q^M such that:

$$P^M > P^E$$

$$Q^M < Q^E$$

The consumer surplus under pure monopoly provision is defined as:

$$CS_M = \int_0^{Q^M} 2d(Q)dQ - P^M Q^M$$

It is clear that consumer surplus is lower under pure monopoly provision than under the efficient case given the above assumptions.

B. Market Division of Provision

The reign of multiple governments worldwide resembles monopolistic market division. Since rulers enjoy monopolies within their own territories, they tend toward monopoly provision and away from efficient provision. However, competition for citizens (Tiebout 1956) pulls them away from monopoly provision and toward competitive provision. For most states, this balance between extremes is the real-world baseline to which private provision must be compared. If labor is not perfectly mobile under market division (D), the multistate system results in an equilibrium price P^D and quantity Q^D such that:

$$P^M > P^D > P^E$$

$$Q^M < Q^D < Q^E$$

Here, consumer surplus is defined as:

$$CS_D = \int_0^{Q^D} \alpha d(Q) dQ - P^D Q^D$$

Where $1 < \alpha < 2$ with strict inequalities indicating some positive amount of (imperfect) mobility of citizens. This results unambiguously in a consumer surplus that is higher than in the pure monopoly case but lower than in the efficient provision case. From all above assumptions the following must be true:

$$CS_M < CS_D < CS_E$$

Consumer welfare is lowest under monopoly, consistent with Molinari (1849 [2009]) who, noting that consumers are always better off under free competition than under monopoly, asserts that this applies to law and defense no less than to any other industry. Where labor and capital are highly mobile, governments may approximate Q^E , resulting in a consumer surplus close to CS_E . This may come closest to describing municipal governments. National governments probably tend closer to Q^M resulting in a consumer surplus closer to CS_M . I am left only with the task of comparing these to consumer surplus under the private provision of public goods.

C. Private Provision

Under the private provision of public goods, since contributions are voluntary, there is a tendency for consumers to free ride on the contributions of others. For large groups in particular, large transaction costs due to coordination may impede achievement of the efficient level under private provision (A) such that for the market, $S(Q) \neq D(Q)$ and marginal cost $MC < P^A$. We know that the market equilibrium quantity Q^A falls somewhere in the range:

$$Q^A \in [0, Q^E]$$

No one will voluntarily contribute to the public good beyond the efficient level. The exact value of Q^A depends on the extent of free riding. If $Q^A = 0$, then the consumer surplus is also equal to zero. If $Q^A > 0$, then the consumer surplus under private provision is:

$$CS_A = \int_0^{Q^A} d(Q) dQ - P^A Q^A$$

Clearly, consumer welfare depends on the equilibrium value of Q^A . By postulate 4, in all cases consumer welfare due to violent transfers continues to be ignored. Relative to the cases of efficient

provision and government provision, which one has the largest consumer surplus? This depends on the exact values of a under market division, and Q^A under private provision. It is perfectly feasible that consumers are better off under private provision than under government provision in both its forms, especially when considering the pure monopoly case. Solving:

$$CS_A \leq CS_D$$

It is unknown which is larger without more information. This depends on which effect dominates, the free riding that occurs under private provision or the monopoly pricing and output that occur under government. All we can know *ex ante* is that they both fall somewhere within the range of values between consumer surplus under pure monopoly and the efficient level:

$$CS_M < [CS_A \leq CS_D] < CS_E$$

Consumer surplus under private provision depends on the extent of free riding that occurs. Dougan and Lindsay (2013) find that private markets are best able to provide public goods close to the efficient level when satiation points exist and fixed costs are low. Coupled with the fact that states clearly do not provide public goods exclusively or at the efficient level, the difference in consumer surplus between the private and government provision of public goods may not be large, and consumer surplus may be greater in the private provision case. Private provision outperforms government to the extent that government approaches the monopoly output. This parallels Leeson (2007), who derives cases where private provision beats government in efficiency. To the extent that migration is driven by factors other than optimization of public goods, such as relative wages, government provision even under market division deviates from what the modal citizen demands.

There exists a Q^* under private provision that equalizes consumer surplus relative to a given level of government provision Q^D . Then any $Q^A \geq Q^*$ is as good as or better than government provision from the consumer's perspective. Since $P^D > P^A$, $Q^* < Q^D$. This is simply:

$$CS_A = CS_D$$

$$\int_0^{Q^A} d(Q)dQ - P^A Q^A = \int_0^{Q^D} \alpha d(Q)dQ - P^D Q^D$$

$$D(Q^A) - P^A Q^A = \alpha D(Q^D) - P^D Q^D$$

Since $D(Q^A)=P^A$ and $D(Q^D)=P^D$ we have:

$$P^A - P^A Q^A = \alpha P^D - P^D Q^D$$

$$P^A Q^A = \alpha P^D - P^D Q^D - P^A$$

$$Q^* = \frac{\alpha P^D - P^D Q^D - P^A}{P^A}$$

We see that Q^* is increasing in α and decreasing in Q^D . That is, as government output falls, the minimum level of output that is required to keep consumer surplus constant under private provision also falls, and this minimum output under private provision rises along with α , the degree to which government output converges with the monopoly level, holding prices constant. Since prices are functions of quantities, it seems that this will be offset by the increase in P^D that occurs as α increases and Q^D falls, given that $\frac{\partial Q^A}{\partial \alpha} = P^D$. In short, the greater the monopoly power of the state, the greater the level of underproduction consumers will be willing to accept under the market alternative since a greater extent of private underproduction due to free riding will still leave consumer surplus at least as well off as under state provision when Q^D converges toward Q^M .

The notion that government will surpass the free market's ability to provide the efficient level of public goods is the most common argument in defense of statism. It "is the foundation of many people's belief in the necessity of government . . . [and] it alone appears to stand in the way of a large number of classical liberals embracing market anarchy" (Leeson, Coyne, and Duncan 2014). However, as shown above, government underproduces relative to the Samuelson condition, severely reducing economic efficiency. While underproduction under private provision is due to transaction costs relating to group size, underproduction under government is a result of its position as a monopoly producer. It is not clear ex ante whether consumers are better off under state provision or market provision. Even if government outproduces the market, whether consumer welfare is lower under private provision depends entirely upon whether the degree of free riding that occurs there is dominated by the degree of monopoly power possessed by the state alternative.

V. Discussion

Efficiency in the provision of public goods requires that the quantity be provided that equates the marginal rate of transformation with the sum of the consumers' marginal rates of substitution. Due to the costs of organization involved, achieving efficiency within large groups is thought to require government provision. However, few if any governments satisfy the Samuelson condition. Instead, where rulers constitute residual claimants of constitutionally unconstrained tax revenue, they deliberately underproduce public goods in order to generate rents to be consumed directly or transferred to interest groups in exchange for political support. The ability of government to generate monopoly rents is a function of the cross-borders mobility of its citizens. If such migration is sufficiently costly to citizens, government may provide them with the monopoly output at the monopoly price, where "sufficiently costly" is defined simply as more costly than the acceptance of monopoly provision. Thus, the case for government provision is overstated and the case for private provision is understated. The relative superiority of these imperfect alternatives is determined by the extent of free riding in the market provision case and the cost of emigration in the case of state provision.

Wasteful government spending that does not benefit taxpayer-consumers but merely serves special interests does not constitute overproduction of public goods. Such spending is made possible by government charging consumers some amount above the marginal cost of production. Taxpayers will accept "services" they do not desire, the transfer of great sums to interest groups, and the costs of government efficiency in exchange for the provision of public goods at or below their reservation price. Niskanen (1971) suggests that "we may unnecessarily accept undesirable methods and poor performance by the bureaucracy because of an overriding concern for the provision of certain public services." As long as the overcharge is below the reservation price, rebellion and migration may be more costly than tolerating the exploitation. Charging taxpayer-consumers the monopoly price for public goods is probably often the path of least resistance for politicians seeking sources of revenue to sell to interest groups in exchange for favors. Additionally, since emigration controls artificially inflate population size, the costs of rent seeking are able to be further dispersed across the residents. The freer a country is, the closer it comes to producing public goods at the efficient level and the less incentive there is for consumers to replace

public provision with private provision. The more monopolistically the government behaves, the more appealing the private alternative becomes.

One possibility for extension lies in the fact that the model assumes no debt spending or monetary expansion to finance government activity. In the real world, governments do turn to these methods of financing expenditures on rent-seeking activity and on public goods since these methods are often more politically desirable than taxation. If the cost of migration falls over time, the government may increasingly need to turn to these methods of revenue generation to finance a constant or growing level of rent-seeking. Perhaps this explains in part the rise in worldwide government debt in the past several decades, which coincided with rising living standards and presumably the greater international mobility of people. Another testable implication of the model may exist in the European Union, where citizens are able to travel freely among member countries without a passport. Perhaps freedom of movement had a negative effect on rent-seeking activity within member countries and increased the proportion of government expenditures spent on public goods by reducing the ability of each country to maximize its tax revenue surplus; however, restrictions on employment may have countered this effect.

References

- Becker, Gary S. 1983. "A Theory of Competition among Pressure Groups for Political Influence," *Quarterly Journal of Economics*, 98(3): 371–400.
- Brennan, Geoffrey, and James M. Buchanan. 1980. *The Power to Tax*. Indianapolis: Liberty Fund.
- Dougan, William R., and Cotton Lindsay. 2013. "Efficiency in the Provision of Pure Public Goods by Private Citizens." *Public Choice*, 156(1): 31–43.
- Dougan, William R., and James M. Snyder. 1993. "Are Rents Fully Dissipated?" *Public Choice*, 77(4): 793–813.
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.
- Edel, Matthew, and Elliott Sclar. 1974. "Taxes, Spending, and Property Values: Supply Adjustment in a Tiebout-Oates Model." *Journal of Political Economy*, 82(5): 941–64.
- Ekelund, Robert B., and Robert D. Tollison. 2001. "The Interest-Group Theory of Government." In *The Elgar Companion to Public Choice*, ed. William F. Shughart and Laura Razzolini, 357–78. Northampton, MA: Edward Elgar.
- Harberger, Arnold C. 1954. "Monopoly and Resource Allocation." *American Economic Review*, 44(2), Papers and Proceedings of the Sixty-Sixth Annual Meeting of the American Economic Association, 77–87.

- Hayek, F. A. 1945. "The Use of Knowledge in Society." *American Economic Review*, 35(4): 519–30.
- Higgs, Robert. 1988. "Hard Coals Make Bad Law: Congressional Parochialism versus National Defense." *Cato Journal*, 8(1): 79–106.
- Holcombe, Randall G. 1997. "A Theory of the Theory of Public Goods." *Review of Austrian Economics*, 10(1): 1–22.
- Holcombe, Randall G. 2004. "Government: Unnecessary but Inevitable." *Independent Review*, VIII(3): 325–42.
- Lee, Dwight R. 1990. "The Politics and Pitfalls of Reducing Waste in the Military." *Defence Economics*, 1(2): 129–39.
- Leeson, Peter T. 2007. "Efficient Anarchy." *Public Choice*, 130(1): 41–53.
- Leeson, Peter T. 2011. "Government, Clubs, and Constitutions." *Journal of Economic Behavior and Organization*, 80(2): 301–08.
- Leeson, Peter T., Christopher J. Coyne, and Thomas K. Duncan. 2014. "A Note on the Market Provision of National Defense." *Journal of Private Enterprise*, 29(2): 51–55.
- McChesney, Fred S. 2001. "Rent-seeking and Rent Extraction." In *The Elgar Companion to Public Choice*, ed. William F. Shughart and Laura Razzolini, 379–95. Northampton, MA: Edward Elgar.
- McCormick, Robert E., and Robert D. Tollison. 1981. *Politicians, Legislation, and the Economy: An Inquiry into the Interest-Group Theory of Government*. Boston: Martinus Nijhoff Publishing.
- McGuire, Martin C. 2000. "Concepts of Defense Economics for the 21st Century." *Defence and Peace Economics*, 11(1): 17–30.
- Meltzer, Allan H., and Scott F. Richard. 1983. "Tests of a Rational Theory of the Size of Government." *Public Choice*, 41(3): 403–18.
- Mieszkowski, Peter, and George R. Zodrow. 1989. "Taxation and the Tiebout Model: The Differential Effects of Head Taxes, Taxes on Land Rents, and Property Taxes." *Journal of Economic Literature*, 27(3): 1098–146.
- Mises, Ludwig von. 1944. *Bureaucracy*. New Haven, CT: Yale University Press.
- Molinari, Gustave de. (1849) 2009. *The Production of Security*. Auburn, AL: Ludwig von Mises Institute.
- Niskanen, William A. 1971. *Bureaucracy and Representative Government*. Chicago: Aldine Publishing Company.
- Niskanen, William A. 1975. "Bureaucrats and Politicians." *Journal of Law and Economics*, 18(3): 617–43.
- Niskanen, William A. 1997. "Autocratic, Democratic, and Optimal Government." *Economic Inquiry*, 35(3): 464–79.
- Oakland, William H. 1987. "Theory of Public Goods." In *Handbook of Public Economics*, vol. II, ed. Alan J. Auerbach and Martin Feldstein, 485–535. Amsterdam: Elsevier North-Holland.
- Oates, Wallace E. 1969. "The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis." *Journal of Political Economy*, 77(6): 957–71.
- Oates, Wallace E. 1999. "An Essay on Fiscal Federalism." *Journal of Economic Literature*, 37(3): 1120–149.
- Olson, Mancur. 1965. *The Logic of Collective Action*. Cambridge, MA: Harvard University Press.

- Olson, Mancur. 1993. "Dictatorship, Democracy, and Development." *American Political Science Review*, 87(3): 567–76.
- Peltzman, Sam. 1976. "Toward a More General Theory of Regulation." *Journal of Law and Economics*, 19(2), Conference on the Economics of Politics and Regulation: 211–40.
- Peltzman, Sam. 1980. "The Growth of Government." *Journal of Law and Economics*, 23(2): 209–87.
- Posner, Richard A. 1975. "The Social Costs of Monopoly and Regulation." *Journal of Political Economy*, 83(4): 807–28.
- Samuelson, Paul A. 1954. "The Pure Theory of Public Expenditure." *Review of Economics and Statistics*, 36(4): 387–89.
- Sandler, T., and K. Hartley. 1999. *The Political Economy of NATO: Past, Present, and into the 21st Century*. Cambridge: Cambridge University Press.
- Shughart, William F., Robert D. Tollison, and Mwangi S. Kimenyi. 1986. "The Political Economy of Immigration Restrictions." *Yale Journal on Regulation*, 4(1), 79–97.
- Stigler, George J. 1971. "The Theory of Economic Regulation." *Bell Journal of Economics and Management Science*, 2(1): 3–21.
- Tiebout, Charles M. 1956. "A Pure Theory of Local Expenditures." *Journal of Political Economy*, 64(5): 416–24.
- Tullock, Gordon. 1967. "The Welfare Costs of Tariffs, Monopolies, and Theft." *Western Economic Journal*, 5(3): 224–32.
- Yandle, Bruce. 1983. "Bootleggers and Baptists—The Education of a Regulatory Economist." *Regulation* (May/June): 12–16.
- Yandle, Bruce. 1999. "Bootleggers and Baptists in Retrospect." *Regulation*, 22(3): 5–7.