The fiscal commons: Assessing the limits and possibilities of a metaphor

Juha Ylisalo
Department of Political Science and Contemporary History, University of Turku, Finland

Postal address:
Political Science
Publicum, Assistentinkatu 7
20014 University of Turku
Finland

E-mail: jtylis@utu.fi

Abstract
The common-pool problem has become a popular metaphor in studies of distributive politics, multi-party government and public finance, where it refers to overexploitation problems similar to those often encountered in the management of physical resources. There has been little discussion on what the fiscal commons actually is, and therefore it is not obvious that the conclusions drawn from these studies are always useful. This article proposes a conceptual apparatus for analysing the fiscal commons and suggests how the metaphor could be used in new applications, on the one hand, and why some previous results should be used with caution, on the other. Special attention should be paid to the specification of the bargaining situation in which decisions are made, as well as the feedback loops that connect the choice of policy instruments to the economy and again to the political process.

Keywords: fiscal commons, budgetary institutions, coalition governments, public spending
JEL codes: D72, H11, H30, H61, H62

1. Introduction

The common-pool problem has become a widely applied concept in studies on distributive politics and multi-party government as well as in institutional approaches to public finance. It is particularly popular when the aim is to locate the institutional origins of major fiscal phenomena, such as the growth of the public sector or the difficulty of balancing budgets. At the same time, the term evokes an analogy to problems often encountered in the management of certain physical resources. Notable examples include the erosion of grazing lands, the depletion of fisheries and the pollution of air and water.

These can often be analysed as classical common-pool problems where a number of rational actors maximise their personal payoffs but together produce an outcome that is collectively irrational: everyone would be better off if the number of animals brought to a pasture, the amount of fish caught or the amount of pollutants released into the environment were restricted. Nevertheless, left to themselves, individuals have no incentives to restrict their use of the resource (G. Hardin 1968). How can we use this insight when trying to understand fiscal outcomes, on the one hand, and to evaluate institutions in which they are produced, on the other? Where are the limits of the applicability of the metaphor, and could it be applied to settings where it has not been used before?

The common-pool problem of budgeting was first formalised in the context of pork-barrel politics in American legislatures (Weingast et al. 1981; Shepsle and Weingast 1981) but the argument has been extended to other political systems and other situations as well. It has been offered as an explanation for the size of the public sector in parliamentary countries (Bawn and Rosenbluth 2006; Persson et al. 2007), spending increases and budget overruns in local and regional governments (Baqir 2002; Blom-Hansen 2010; Chen and Malhotra 2007; Egger and Koethenbuerger 2010), tax increases in multilevel government (Berry 2008) and the incidence and persistence of budget deficits (de Haan et al. 2013; Elgie and McMenamin 2008; Wehner 2010a, 2010b).

The underlying problem identified in such studies is the fact that certain budgetary phenomena follow from the dynamics of decision-making by multiple actors as such and not from the advancement of the welfare of the society. The overarching argument has been such that inefficiencies tend to become worse and actors' time perspectives shorter when the number of participants in the budgetary process grows and the access points they have to public funds become more numerous. This is so because decision-making becomes more fragmented in the sense that actors become more capable of externalising a larger share of the costs attached to their spending priorities (Hallerberg et al. 2009: 4; Perotti and Kontopoulos 2002).

The commons metaphor has thus been used in addressing important empirical phenomena. Moreover, as it draws attention to problems that follow from the exploitation of public funds by multiple actors it also offers a basis on which institutional arrangements can be evaluated in normative terms. Increased levels of public spending and taxation, budget deficits and the accumulation of government debt are seen as signs of inefficient and unsustainable decision-making, much like the depletion of a fishery is a sign of excessive fishing. If institutions – or the lack of appropriate institutions – make it possible for actors to withdraw funds while letting others bear the cost, there are reasons to reject them in favour of alternative arrangements. What makes the budgetary common-pool problem especially vicious is the fact that it is associated with processes that are representative and inclusive, which are properties that tend to be highly valued in democratic theory.

Despite the wide use of the metaphor, there has been remarkably little discussion on its actual applicability, the conditions under which it makes sense and what it adds to our understanding about decision-making by multiple actors. The rest of this article seeks to demonstrate that the metaphor should be applied cautiously, and especially attempts to apply it to large-scale phenomena are complicated by macroeconomic effects that in themselves are disputable. However, one can also neglect some of the possibilities the commons metaphor opens; both of these risks can arguably be better avoided if contextual factors are given more attention than what has usually been the case.

In what follows, the limitations and possibilities of the metaphor are approached by proposing a conceptual apparatus that heavily borrows from studies on physical commons. Specifically, the discussion builds on the placement of the commons in standard typologies of goods as well as on the distinction between common-pool resource *situations* and *dilemmas* (Gardner et al. 1990). As the former logically precede the latter, it should be possible to speak about 'fiscal common-pool resource situations' without taking a stance on their potentially problematic nature. Hence, the focus is on identifying the *resource base* and the *appropriators* that together define a common-pool resource situation. Only if these can be sensibly defined, the emergence, likelihood and consequences of dilemmas can be addressed.

The discussion identifies four aspects in the fiscal commons metaphor that potentially set the fiscal commons apart from classical depictions of 'tragedies of the commons' and make it necessary to demarcate the settings in which the number of actors is likely to affect fiscal policy outcomes. These aspects include the choice of policy instruments, the requirement of collective decision-making and the room for manoeuvre it gives to the appropriators in different settings, agency problems between elected decision-makers and the public, and the optimality vs. sub-optimality of policy outcomes.

2. Common-pool resources, situations and dilemmas

The metaphor can be approached by first considering the definition of a common-pool resource. A classification of goods can be constructed using two dimensions which are here labelled *exclusion* and *subtractability*, in line with Ostrom et al. (1994: 7; see also Ostrom 2003). Exclusion refers to the ease with which actors can be prevented from using the good, whereas subtractability refers to the degree to which one unit used by one actor decreases the amount available to others. By combining these two dimensions, one obtains a familiar typology (Table 1).

[TABLE 1 HERE]

The four types of resources must be understood as ideal types, as most real-world goods are located on continuums whose endpoints are located in the cells of Table 1. Private goods exhibit high subtractability and easy or low-cost exclusion; physical consumption goods such as food are typical examples but many services also have these characteristics. Club or toll goods are non-subtractable but potential consumers can easily be excluded. Public goods are non-excludable and non-subtractable, and in their purest form they must be consumed in equal amounts by everyone once the good is provided. Common-pool resources are characterised, first, by subtractability and, second, difficult, costly or at least non-trivial exclusion.

The placement of a good in this typology does not address the number of actors actually using it. According to Gardner et al. (1990; see also Ostrom et al. 1994), a *common-pool resource situation* has two central characteristics: 1) resource unit subtractability, or the condition that a unit of resource consumed by one actor is not fully available to others, and 2) multiple appropriators. Note that this says nothing about the desirability of the outcomes reached by the appropriators. Instead, a *common-pool resource dilemma* requires that two additional conditions are met: 3) sub-optimal outcomes and 4) constitutionally feasible alternatives. In other words, outcomes would be better if actors adopted different strategies and at least one set of such strategies would be possible under existing institutional arrangements.

Common-pool resource situations can be regarded as a subset of problems of collective action, where the choices of several actors must be coordinated in order to secure the provision of some good or the avoidance of a bad (or the deterioration of a good). In his classical treatise on the topic, Olson (1971) sought to formulate a general theory of collective action, with the well-known conclusions about the difficulty of successful coordination and the improbability of attaining optimal levels of collective goods. Olson's theory approached collective action as a Prisoner's Dilemma game in which each actor's dominant strategy is to free-ride on the efforts of others, except in some special situations (see R. Hardin 1982: 25–30). The 'tragedy of the commons' occurs when actors fail to secure the sustainability of a common-pool resource. However, as

Ostrom (2003) points out, Olson's theory only centred on the exclusion aspect of collective goods, and therefore it actually lacks generality.

The field has long acknowledged the diversity of collective action situations and the ensuing possibilities for successful collective action (for an overview see Medina 2013). In studies on the governance of common-pool resources, it has been noted that several game forms can be valid depictions of common-pool resource situations, depending on a number of factors such as asymmetries between the players, the technology used by the appropriators, the way in which the resource stock responds to changes in appropriation levels, and so forth (Baland and Platteau 1999; Faysse 2005; Feeny et al. 1990). When it comes to fiscal policy, Raudla (2010) argues that the field is still stuck to simple, outdated depictions and that much could be learnt from the work of Elinor Ostrom (e.g. Ostrom 1990) and others working on physical common-pool resources.

3. The fiscal commons in the literature

As was mentioned above, Weingast et al. (1981; see also Shepsle and Weingast 1981) gave the first formalisation of what has become known as the budgetary or fiscal common-pool problem, although they did not explicitly use the commons metaphor. Weingast et al. were concerned about the apparently excessive provision of pork-barrel projects – geographically targeted spending whose benefits are not enjoyed outside the respective electoral district – by a legislature consisting of representatives of single-member districts. In Weingast et al.'s model, overprovision occurs because each representative only considers a fraction of the cost of projects provided in his district, i.e. the decision-making situation is fragmented in the sense defined in the Introduction. As the norm of universalism is assumed to apply in the legislature, i.e. all districts are entitled to distributive projects (Weingast 1979), all representatives also have an access to public funds. One corollary is the 'law of 1/*n*', according to which the inefficiency of project provision increases with *n*, the number of electoral districts.

Weingast et al.'s model has provided inspiration for a large and growing number of studies focussing on different institutional settings and seeking to explain different phenomena. Their common basis can be summarised as follows.

A group of decision-makers must reach a joint decision on the amount of taxation and the allocation of tax funds to various purposes. In practice, these can be construction projects or social policy programmes, for instance. Decision-makers, however, prioritise different policy dimensions, for example because they rely on the electoral support of different groups. Differing priorities mean that decision-makers derive differing utilities from allocations, so they are concerned with allocating resources to certain purposes but not to others. However, as costs are diffused across the society as a whole, a decision-maker internalises only a fraction of the cost of a programme he advocates, and therefore the supporters of a programme pursue higher levels of allocation than what would be socially optimal. Optimal spending would require that benefits are compared with the social cost, but the decision-makers only consider a fraction of the cost. As decision-makers tend to have disproportionate influence on decisions that affect their priorities, the amounts of resources they channel to purposes they deem important exceed the socially optimal amount. For this reason, everyone would be better off if allocations were restricted, but no-one has incentives to do so to their own 'projects' if appropriate institutional constraints on decision-makers' behaviour are not set.

Extending this reasoning to European-style parliamentary systems, Scartascini and Crain (2002) argue that the instability of minimal winning coalitions and the ensuing uncertainty about future coalitions encourages the adoption of the norm of universalism in parliaments so that all parties are entitled to projects. As a consequence, they argue that public spending tends to increase with the partisan fractionalisation of parliaments (see also Crepaz and Moser 2004; B. Mukherjee 2003).

Bawn and Rosenbluth (2006) argue that the combination of electoral accountability and partisan fragmentation causes the spending bias. As the party system becomes more fragmented, parties are encouraged to draw support from smaller constituencies with the associated incentives to externalise a larger fraction of the costs of targeted spending.

Their empirical analysis reveals that the number of parties in government is positively correlated with the ratio of public spending to GDP in Western European countries. Persson et al. (2007) put forward a similar argument, according to which voters' possibility to discriminate between parties underlies the observed statistical connection between the incidence of coalition cabinets and the size of the public sector. Thus, the structure of the party system has implications for the volume of government spending even if the distribution of preferences at the societal level is constant. At a theoretical level, Velasco (2000) argues that the participation of multiple decision-makers also creates incentives to spend soon instead of saving, as savings would be a part of the common-pool from which others could withdraw resources.

A related vein of research has focussed on budgetary rules and fiscal institutions as solutions to underlying common-pool problems (e.g. von Hagen and Harden 1995; Hallerberg et al. 2009; Martin and Vanberg 2013; Wehner 2010b). However, even these studies tend to take the common-pool problem as a starting point and argue that restrictions on decision-makers' freedom to act contributes to the achievement of 'fiscal discipline'. As the centralisation of the party system – in the sense of few large parties having power instead of a number of small ones – has furthermore been argued to counteract the 'law of 1/*n*' (Franzese 2010), there would seem to be efficiency rationales for restricting the access to the fiscal commons (cf. Lizzeri and Persico 2005). By decreasing the number of decision-makers or tying their hands with strict procedural rules, both sets of measures effectively concentrating power over the budgetary commons to fewer actors, everyone ought to be better off as resources are used more efficiently and in a more sustainable manner.

The intellectual transition from the rather limited setting, pork-barrel provision, analysed by Weingast et al. to the large-scale phenomena, such as the size of the public sector, being studied in more recent works, seems a large one. The characteristics of a common-pool resource situation and the risk of a dilemma are readily visible in the former, but it is not obvious that the same is true for the latter. A model may not be very useful in particular settings although it can be useful in other contexts and in answering other questions (see e.g. Clarke and Primo 2012). This suggests that instead of asking

whether the common-pool problem is a 'true' depiction of decision-making processes, one could ask what aspects of decision-making it can illuminate and under what conditions.

4. Fiscal common-pool resource situations

When depicting a common-pool resource *situation*, one should identify the resource base alongside its key features (does it exhibit subtractability and difficult exclusion?) as well as the appropriators (are there multiple appropriators?).

[FIGURE 1 HERE]

The general structure of a fiscal common-pool situation, alongside questions that should be addressed with respect to various elements of the situation, is depicted in Figure 1. In line with Ostrom et al. (1994:8), the productive capacity of the economy can be thought of as the common-pool resource 'facility [that] creates the conditions for the existence of a stock of resource units', where the *stock* of resource units is the tax base from which a *flow* of resource units can be drawn by various actors who collectively produce policy outcomes.

Ostrom and colleagues have repeatedly pointed out that instead of *the* common-pool problem, appropriators face several problems (see also Raudla 2010: 212–214). *Appropriation problems* include decisions about the allocation of the subtractable flow as well as appropriation externalities where one actor's appropriation activities diminish the yield available to others (Ostrom et al. 1994: 10). The principal attention of the fiscal commons literature has been on these issues.

Provision problems, in turn, 'are related to creating a resource, maintaining or improving the production capabilities of the resource, or avoiding the destruction of the resource' (Ostrom et al. 1994: 9) and they can be further divided into demand- and supply-side provision. The former is about devising appropriation activities that alter the

productive capacity of the resource, the latter about contributing resources for the provision or maintenance of the resource.

Translated into the language of economic policies, provision problems can be understood as contributing resources to strengthening the tax base so that larger amounts of units can be 'harvested' without endangering its sustainability or harvest can remain the same although the potential yield increases. These issues cover not only the incentives to allocate resources between productive and purely distributive or non-productive uses (Raudla 2010: 214) but also the creation of the tax fund itself, as it does not exist before it has been defined with respect to the national economy. Provision problems of this latter type could materialise, for example, if disputes about the incidence of tax burdens make the creation of an adequate tax base impossible.

The evaluation of outcomes requires a standard to which they are compared, or what the successful management of the budgetary commons means. The seminal Weingast et al. (1981) model was concerned with Pareto efficiency: the problem with pork-barrel provision is that everyone would be better off if provision were decreased. Empirical analyses, however, tend to be concerned with measurable fiscal policy outcomes, primarily the level of public spending and the incidence of budget deficits. As will be pointed out later on, this creates difficulties when the purpose is to make normative judgements about the institutions in which outcomes are produced.

From the literature on physical commons, one could also borrow the criterion of *the maximum sustainable yield,* which in the fiscal commons would imply keeping the size of the public economy in relation to the national economy as large as possible without making the latter shrink. Yet another possible measure of success would be making the *common-pool resource facility* as large as possible – that is, to make the society more prosperous. It is not necessarily equivalent to securing the maximum sustainable yield, as maximising the yield prioritises the public economy over the national economy; maximising the size of the facility places the national economy ahead of the public economy. Conflicts between these maximands are especially likely if agency problems between elected decision-makers and the public are acute.

The choice of the criteria of success depends on the research question. However, independently of the choice of criteria, three sets of modelling choices must be made when the 'fiscal commons' of a representative system is analysed; these are discussed below. These sets of choices also affect an additional aspect, optimality assessments and policy recommendations based on them.

4.1 The commons nested in an economic system

The first set of modelling choices pertains to the properties of the resource itself. When decision-making surrounding some resource is modelled as strategic interaction, some conception of how the resource responds to the choices made by the actors is needed. In other words, the fiscal common-pool resource and its properties belong to the 'physical and material conditions that affect the variables of the action situation (E. Ostrom and V. Ostrom 2014: 77). The attributes of the resource affect the choices available to the players, the payoffs that follow from certain combinations of choices and the distribution of payoffs among the players.

The fiscal common-pool resource can be thought of as (monetary) resources that are collected from various sources and allocated to various purposes. Instead of fish drawn from water or grass eaten by cattle, the fiscal commons is made of abstract and intangible economic resources drawn from, say, wage-earners and buyers of tobacco, and some of the resources thus gathered are allocated to building a bridge in a certain electoral district or to financing a vaccination programme. It is evident that the goods provided by the government fall into different categories as they contain private, public and club goods as well as common-pool resources. Primo and Snyder (2008) develop Weingast et al.'s model by showing that the plausibility of the 'law of 1/*n*' depends, for example, on the types of goods provided: increases in demand due to the increase of relevant political units or entities require that there is congestion so that additional consumers reduce the benefits others receive from the good.

The properties of the goods distributed in the political process pertain to the appropriation side of resource management, but comparable factors are relevant with respect to provision-side issues as well. A central feature of economic policy is the fact that different instruments affect economic activity and thus the resource base of policy-making in different ways. There are considerable schisms on the exact consequences of diverse instruments, and attempts to solve them are not made here. However, to name a well-known example, neo-classical thinking considers lump-sum taxation Pareto efficient in that it does not change relative prices determined by the market mechanism. From Keynesian economics, on the other hand, it is often possible to derive the recommendation to redistribute income from the rich to the poor because the latter have a higher marginal propensity to consume and thus redistribution increases aggregate demand and economic activity. These kinds of effects can be approached as demand-side provision problems.

Supply-side provision problems can materialise in the case of tax breaks: they can weaken the tax base to the extent that it becomes necessary to underprovide various policy programmes instead of overproviding them. If special interest politics that takes place via tax breaks was one of the consequences of the 'law of 1/*n*', the public sector would remain too small rather than growing too large, and this tendency would become stronger as fragmentation increases – this would turn around the common ways of thinking about the consequences of fragmented decision-making. Tax breaks can, however, also be beneficial in a longer perspective if they encourage productive activities. Thus, even assuming that the exact consequences to incentives and production of each policy instrument could be undisputably demonstrated, the degree of subtractability still depends on the temporal dimension. In the short run, even productive spending decreases funds available to other purposes, although in the long run the effect is opposite.

Moreover, the distinction between distributive and productive spending is not always entirely clear. A party that primarily seeks to draw support from blue-collar workers can advocate public investment and construction works as they increase the demand for labour and thus push the unemployment rate down. Such investments may or may not

be beneficial for the society as a whole. What this means is that subtractability is not self-evident, and justifications for this assumption should be considered in any application. When traditional pork-barrel policies are in the spotlight, it can be relatively safe to assume subtractability as benefits are clearly concentrated and they are relatively modest compared with their cost. In other contexts, potential feedback loops from spending to production suggest that the assumption of subtractability should be carefully justified.

The distinction between appropriation and provision problems raises questions about relationships between solutions to different problems. For example, assume that the appropriators agree on an expenditure ceiling in order to solve appropriation problems, and moreover assume that all parties respect this agreement. Given the various policy instruments at the appropriators' disposal, it is possible that the appropriators choose to restrict productive spending and choose non-productive policy instruments instead in order to secure immediate benefits. In this scenario, an apparent solution to an appropriation problem makes provision problems more severe, as fewer resources are invested in improving the resource base. This is not a necessity, but it is a possibility that ought to be considered when analysing budgetary rules as solutions to fiscal common-pool problems.

It is not completely evident why the fiscal commons should only include strictly budgetary policy instruments. For instance, regulation (and de-regulation) can often be used for distributive purposes. Such 'implicitly' distributive policies can both substitute and complement 'explicit' distribution that is readily visible in the budget – and due to its hidden nature it can more easily escape public scrutiny and thus contain socially harmful measures (Olson 1990, esp. Ch. 3).

In short, the management of the fiscal commons cannot be considered completely apart from macroeconomic and regulatory policies, especially if common-pool problems are offered as explanations for large-scale policy outcomes such as the sizes of budgets or the incidence of deficits and if long time periods are considered. In more restricted settings, such as pork-barrel provision, the consequences of the increased number of

actors are easier to track: the pool of tax funds is already there, and the analysis only focusses on one part of total spending. However, when longer time periods and more wide-ranging policy outcomes are considered, the relationships between appropriation and provision problems become relevant, and their analysis also requires a model of macroeconomics. Moreover, the number of decision-makers can have different implications at different points of the feedback loop, making its total effect less obvious than that captured by the law of 1/*n*.

4.2 Appropriators in the fiscal commons

The second set of modelling choices pertains to the identities of the appropriators and their possibilities to act given the requirement of collective management. Recall that one aspect of any common-pool situation is the presence of multiple appropriators. In other words, even if the resource satisfied the properties of a common-pool resource, it could be appropriated by one actor or by no-one. The number of appropriators is perhaps the factor that has concerned the most those writing about the fiscal commons.

In the literature, the entities that have been treated as the relevant appropriators have varied from individual legislators to government parties and legislative committees, and their multitude has been measured in both raw and size-weighted numbers (see Franzese 2010). A more fundamental issue is, however, when an actor should be considered an 'appropriator' – capable of withdrawing resource units for her own ends.

The classical tragedy of the commons, as depicted by Hardin (1968), is a phenomenon of open-access resources, or resources to which anyone has unrestricted access (see also G. Hardin 1998). On the contrary, the constitutions of parliamentary countries typically state that decisions on the budget are made by the parliament on the basis of a government proposal. Nominally, decision-making power is already centralised into the hands of the parliament and more exactly the parliamentary majority.

This is of course an idealisation, but it points to an important feature of the fiscal commons: it is obviously not an open-access resource, as the set of appropriators is

necessarily limited to those that have gained authoritative access. In a representative system, this set is much smaller than the entire population. This fact, however, raises the question about the groups and factions of the society that have access ‘via’ the representatives. This issue will be addressed later on, as the complications arising from representation relationships are neglected for a moment and the focus is kept on interactions on the level of representative politics.

There are institutional arrangements for the management of physical commons that require collective decisions to be made. However, often it would be possible for the appropriators to ignore the requirement and exploit the resource unilaterally, albeit subject to potential sanctions. In the fiscal commons, such unilateral action is not possible (assuming that outright kleptocracy and serious forms of corruption are ruled out). Instead, appropriation requires coalition building as decisions must ultimately be accepted by a legislative majority.

This has consequences to the ‘difficult exclusion’ criterion defining a common-pool resource. At most, exclusion is difficult with respect to the members of the decisive coalition; others cannot access the commons. Even within the decisive coalition, individual members cannot just grab resources whenever they please. The decision-making structure must be such that members can be treated ‘as if’ they were appropriators, and this depends on the parameters of the bargaining or voting situations taking place within the structure.

If all distributive or otherwise targeted spending items were voted on one by one by all of the affected people or their representatives, each of them would presumably be defeated in a majority vote as long as such policies only bring positive benefits to minorities. However, at the same time as the requirement of collective management makes decision-making nominally centralised, it offers an arena where bargaining and vote trading can take place. Hence, it may become possible for actors who would otherwise be in minority to have their way in some issues and to some extent.

But even this requires that actors have power to bring their priorities to the agenda and to have them accepted: the number of actors should be relevant only in so far as all of them are capable of influencing the policy package adopted collectively. In addition, it should be justified why actors use their power to increase spending they prioritise instead of blocking spending increases prioritised by others.

Actors' possibilities to affect outcomes as members of coalitions have been widely analysed in cooperative game theory and especially in the literature on power indices (e.g. Felsenthal and Machover 1998). In this literature, an actor's power is basically thought of in terms of the actor's ability to turn losing coalitions into winning ones and vice versa: the more often an actor is able to do this, the more the actor has power. The number of alternative measures of voting power is large and they are not equivalent, but there is a recurring conclusion according to which all actors are not equally relevant and relevance is not always proportional to actors' sizes.

Another approach to bargaining and actors' ability to affect outcomes is based on non-cooperative games in which more emphasis tends to be given to institutional structures (e.g. Baron and Ferejohn 1989). However, the results of bargaining models tend to be highly sensitive to changes of the game form. This points to the fact that as the dynamics of interaction are not necessarily similar in all cases, the outcomes of joint decision-making are not similar, either. A clear justification for choosing a particular bargaining or voting model as the basis of analysis should be given in any analysis.

Furthermore, it would be essential to study whether and how outcomes change when the parameters of the bargaining situation change, and whether small changes in the situation suffice to produce notable changes in the outcomes. The parameters include not only the number of actors and their bargaining or voting strengths – however determined – but also the feedback loops from decisions to the economy that decision-makers anticipate as well as the types of linkages that prevail between decision-makers and their constituencies. An interesting scenario would be such that joint decision-making can take radically different paths: instead of giving every appropriator some amount of spending, the policy package could be such that actors receive only a little or

no targeted spending. From a given initial state, some paths would lead to overexploitation, others to underexploitation.

In short, the assumption underlying the 'law of 1/*n*' according to which each of the *n* actors are equally capable of affecting policy outcomes is only one possible pattern of joint decision-making. How relevant an actor is can also depend on the context, including both formal and informal institutions, and it can vary over time. Therefore, the number of participants can have crucial consequences in some settings but not in others, and the field would greatly benefit from clarifying the conditions under which this is so.

4.3 Representative management

The third set of modelling choices is about the relationship between the 'appropriators' and the rest of the society. Most applications of the fiscal commons metaphor are concerned with budgetary politics in legislatures and governments. When this is the case, processes of representation should be considered alongside the requirement of collective decisions. Factors stemming from relationships between representatives and the represented can affect the dynamics of bargaining between decision-makers and vice versa. Moreover, taking representation into account is necessary in order to address a normatively important issue, that is, whether the preferences of the public or distortions arising in the democratic chain of command are at the root of fiscal difficulties. As will be seen, these aspects are also relevant with respect to the applicability of the law of 1/*n* to settings that are more complex than that analysed by Weingast et al. (1981).

Representative processes are very complex as they contain chains of delegation and accountability. Instead of a set of appropriators that can be relatively easily demarcated (such as the users of a groundwater basin), representative politics involves voters (both as individuals and as members of various organised and unorganised groups), pressure groups, political parties, bureaucracies, various organs of state as well as international and supranational organisations that are intertwined in complex webs of interaction. The question is, then, which subset of actors should be focussed on, which is of course a crucial choice in any modelling exercise. It has consequences not only for the derivation

of empirical hypotheses but also for the interpretation of results from empirical analyses. An important aspect of such interpretations pertains to the success or failure of democratic processes.

Depending on the specific formalisation of the setting, the root cause of problems can be either in citizens' preferences as such or in the distortionary effects that supposedly democratic institutions have – relatively similar institutions can thus either amplify or dampen the problematic consequences of distributive pressures. For example, take the chain of representation that is familiar in parliamentary democracies. Voters choose from a more or less wide array of political parties, and once seats in parliament are allocated to parties, some subset of them forms the government that in practice formulates policies and is able to pass its proposals by means of its parliamentary majority. A common-pool problem of budgeting can arise because of two basic mechanisms.

One is comparable to that presented by Bawn and Rosenbluth (2006). In this scenario, different groups of voters seek to keep their representatives – the parties that prioritise their 'projects' in order to gain electoral support – accountable for outcomes on different policy dimensions so that no party is accountable for the overall policy package. In this setting, representative decision-making can only dampen distributive pressures arising from the society, assuming that the number of parties is smaller than that of societal interest groups. Electoral institutions that restrict the number of parties can be seen as partial solutions to problems that emerge at the societal level, so that in Aristotle's (1932) words in Book II of the *Politics*, 'a large number of domestics sometimes give worse attendance than a smaller number'. This can be the case when the society can be neatly divided into groups with material interests, as together they may want to use restrictive institutions to ensure mutual restraint.

Another possible mechanism is based on agency problems. That is, voters may be concerned with achieving an outcome that is socially optimal, or they may be primarily interested in non-distributive, universalistic programmes. It may not be possible for them to induce good outcomes from their representatives because the spending

preferences of the latter differ from those of the former. Information may be limited or the dynamics of electoral competition such that bad representatives get elected (adverse selection), or it is not possible for voters to set credible accountability schemes, making ex post sanctioning ineffective (moral hazard) (Besley 2006; Kiss 2009). Moreover, representatives can be accountable to different kinds of constituencies: some constituencies can be sources of material rewards but require tangible benefits in return, whereas others can be sources of votes but require benefits that can be either material or ideological.

Therefore, if an indicator of fragmentation is found to correlate with fiscal policy outcomes, and this is seen as a sign of inefficiency, there is still a normative puzzle to solve: Is inefficiency due to distortions caused by agency problems, or is it because citizens' preferences are transmitted without distortions to policy outcomes? In the former case, 'democratic deficits' and fiscal deficits, in the sense of sustainability problems, go hand in hand. In the latter case, there is a trade-off between democratic and fiscal deficits (see McKenzie 2001: 49).

In both cases, it is possible that decreasing the number of actors with decision-making authority does not have the beneficial consequences that should be expected on the basis of simple common-pool models. For example, in a parliamentary system power is most centralised when a cohesive single-party majority is in power. Such a party should have an encompassing interest in the welfare of the society, and as voters cannot discriminate between its internal factions at the polls, the government should have minimal incentives to serve minorities at the expense of the society as a whole (Bawn and Rosenbluth 2006; Persson et al. 2007).

This conclusion, however, neglects the role of electoral laws and the degree of electoral volatility. If a party can reach a parliamentary majority with a minority of votes, which is the usual pattern in British politics, for instance, it is not obvious that the 'majority' party would consider the welfare of the societal majority, especially if the party can safely rely on the support of its core constituencies without the need to attract additional votes. On the contrary, the setting would create possibilities for those in power to

distribute more to their constituencies, as the fraction of the population outside its target groups is larger than in the case of wide-based coalitions.

In settings like this, decision-making can be fragmented in the sense of cost externalisation although it looks centralised in terms of the number of actors. For example, the fact that parties are large need not counteract the law of 1/*n* if it cannot be demonstrated that large parties meaningfully represent larger shares of the population than smaller parties. To the extent that a centralised party system is forged by disproportional electoral rules rather than the distribution of preferences among the public this is not necessarily the case. Thus, the relationship between fragmented decision-making and the number of players is not clear, and the problem cannot be resolved by conforming to either raw or effective numbers of players, or any other established measure of fractionalisation for that matter. What such indicators actually measure – beyond the obvious characteristics of the set of players – depends highly on the context.

Moreover, even if decision-making by multiple representatives were unambiguously observed to produce inferior outcomes, the question about the mechanism that brings this about would remain: the mechanism could depend on particular kinds of representation instead of representation as such. The field would profit from acknowledging the fact that representation as well as political competition take several forms across countries and over time. How they relate to the predictive force and normative implications of the law of 1/*n* and its derivatives should therefore be studied more carefully.

4.4 Optimality and sub-optimality

Recall that one defining feature of a commons dilemma is the sub-optimality of outcomes. The notion of the fiscal common-pool problem draws attention to problems of overconsumption and undersaving, and accordingly empirical connections between the measured fragmentation of decision-making structures and fiscal phenomena have been interpreted as signs of such sub-optimality. Above, it was pointed out that many

criteria can be used to assess whether the fiscal commons are managed successfully. No attempt to present an exhaustive list of all possible criteria is made here, and the criteria mentioned in this article have either been used in previous works or readily derivable from research on physical commons.

The criteria one chooses depends on the questions one asks, which in turn can stem from academic interest but also from normative or political aims. It is obvious that normative criteria often conflict with each other. But independently of the choice of criteria, special emphasis should be given to the relationship between empirical results intended to evaluate the accuracy of theoretical claims and the normative conclusions one draws from such claims.

Making judgements about the optimality of policy outcomes depends, in the first place, on the assumptions made about policy instruments. Consider, for example, Weingast et al.'s (1981) model of pork-barrel politics or Bawn and Rosenbluth's (2006) model of decision-making in multi-party governments. Both are concerned with the tendency of elected politicians to provide sub-optimally large amounts of targeted spending – in the sense of efficient resource use – to their own target populations. Both, however, assume that some social benefit is derived even from distributive projects. Thus, because the socially optimal level of project provision is strictly greater than zero, there is a danger of underprovision if all relevant interests do not participate in the decision-making process, assuming that no funds are allocated to projects if the corresponding interest group has no access to tax funds. The relative weights of these mechanisms are not visible when one only looks at aggregate data.

When optimality evaluations are made, problems of representation discussed above raise the following question: Whose perspective counts? In other words, should optimality be defined from the perspective of voters, representatives or possible 'clients'? In particular, if securing the maximum sustainable yield is taken as the yardstick of success, a relevant issue is who benefits from attaining it: those working in the public sector or the population in general. Moreover, if the maximands of representatives and voters differ, an outcome can be Pareto efficient for the

representatives but inefficient for the voters. This is Schwartz's (1994) explanation for the 'pork barrel paradox', the unanimous support of a legislature for a sub-optimal policy package. More generally, successful collective action can be socially beneficial as well as damaging.

The notion of the fiscal common-pool problem has been helpful in directing attention to problems that potentially emerge in settings where multiple actors must reach a joint decision on the allocation of resources. Drawing conclusions beyond this is, however, a trickier task. For example, it would be completely possible to construct a theoretical model in which the government has an inherent tendency to underspend (cf. Downs 1960). In this alternative model, additional parties could mean that a larger number of legitimate interests are represented, which would drive the spending level upwards. Thus, we would have two theoretical constructions with identical empirical implications concerning the relationship between the structure of the party system and the size of the public sector, but the normative conclusions that can be drawn depend on the theoretical model in the light of which the results are interpreted.[1]

In any case, it is difficult to make inferences about optimality on the basis of empirical results – that is, to make definitive statements about whether policy outcomes deviate from the optimum, how much and in which direction. The difficulty is aggravated by the fact that often the amounts of government-provided goods are non-observable, let alone measurable (Olson 1974). In the case of physical common-pool resources, their successful and sustainable management is greatly facilitated if the appropriators possess accurate information about the resource. In the fiscal commons, what counts as accurate and reliable information is a contested issue, as the resource itself is complex and lacks

[1] Interpretations inspired by the common-pool problem can be compared with results according to which the effective number of parties is statistically connected to higher values of indicators of human welfare (N. Mukherjee 2013). Interpreting a connection between partisan fragmentation and high government spending as a sign of inefficiency or sub-optimality is not self-evidently appropriate when these kinds of results are taken into account.

clear boundaries, and moreover different actors prioritise different kinds of consequences from policy choices, which affects what they consider 'optimal'.

5. Conclusion

It is now possible to return to the question whether the notion of the 'fiscal commons' is useful and how it should and could be used. The starting point of the discussion was the placement of 'the commons' in resource typologies, alongside the definition of a common-pool resource situation, which drew heavily on the literature on physical and natural commons. A new and, hopefully, more coherent depiction of the 'fiscal common-pool resource' was provided, where a distinction was made between the stock and flow aspects of the resource in order to facilitate thinking about appropriation- and provision-side problems. No new models of strategic interaction were provided, as the aim was to identify factors the consideration of which would help make better use of the concept.

The argument that has been condensed into the 'law of 1/*n*', according to which fiscal policy outcomes become more inefficient as the number of decision-makers grows, was then discussed in light of the definition of the resource base and the problems that surround it. The legitimacy of the original theoretical construction put forward by Weingast et al. (1981) was not questioned, as it addresses a relatively limited set of phenomena in a specific institutional setting. However, when the reasoning is transferred to other institutional environments and used as an explanation for other policy outcomes, a large number of factors ranging from macroeconomic feedback loops to agency problems and bargaining strengths enter the picture and make the usefulness of the original argument questionable when it comes to both explaining empirical phenomena and evaluating institutional arrangements.

Non-trivial exclusion and resource unit subtractability were identified as the defining features of a common-pool resource. When one thinks about the tax funds that are managed in the political process, the exclusion of those who do not belong to the winning coalition is actually quite easy, at least in principle. With respect to the

members of the coalition, exclusion can be non-trivial, and to a large extent its ease depends on the features of the bargaining situation. One thing is clear, however: the fiscal commons is not an open-access resource, so 'tragedies of the commons' are by no means inevitable. Whether actors can solve the problems associated with using the resource is another matter, but the development of common-pool resource situations into dilemmas is something that should be demonstrated, not taken as a starting point.

This points to the importance of specifying the interaction situation in which the players find themselves, including the macroeconomic environment. Moreover, the principals of the appropriators should be clearly identified, alongside the criteria on which they hold their agents accountable – to the extent they can.

Many goods financed by the state are available to everyone, and their consumption does not decrease the amount available to others. The funds that are available to finance such goods are, however, depletable: funds used to finance one good cannot be used to finance another. This does not preclude the possibility of productive spending, or the provision of goods that makes the amount of units larger in the future. There can also be positive externalities associated even with spending increases (and tax cuts) that are predominantly introduced for distributive reasons, and several kinds of non-obvious consequences are possible given the complexity of the fiscal commons. To take a simple example, a programme targeted at some disadvantaged group can decrease crime, decreasing the costs that would otherwise accrue to other groups. Resource unit subtractability is to a very large extent a matter of degree in the fiscal commons.

Thus, the commons metaphor is perhaps most readily applicable when the purpose is to shed light on a relatively restricted set of policy outcomes, such as pork-barrel provision. Whether outcomes are *sub-optimal* is a different matter and should be considered independently of the *applicability* of the metaphor. This does not mean that the metaphor would be useless in other settings. For example, it can help understand some of the action that takes place in multi-party cabinets and parliaments when budgets are crafted, but it would be risky to assume that everything can be explained by applying the commons metaphor.

Furthermore, especially empirical studies could benefit from reassessing what should be included in the definition of the commons. Because distributive objectives are at the centre of the metaphor, there seems to be no reason why policy instruments that are not strictly budgetary should not be considered – certain regulatory instruments and other forms of implicit redistribution are obvious candidates. Unfortunately, exactly the implicitness of implicit redistribution makes it difficult to observe and measure it.

At the very least, the fiscal commons metaphor is a reminder that taking representativeness and inclusiveness as the sole objectives of institutional design is not completely risk free. Beyond that, interpretations and applications must be cautious: tragedies of the fiscal commons are by no means a necessity, but neither is successful management a necessity even if it were a realistic possibility. The field would greatly benefit from the construction of richer models of strategic action, as Raudla (2010) has pointed out. But the entire 'fiscal common-pool resource situation' should be more explicitly placed in the context of the political-economic system. Here lies the danger that models become too complicated, that they do not actually shed any light on the reality being modelled. However, explicit statements of modelling choices should be provided even in more restricted applications.

In sum, as works on physical commons have demonstrated, what happens in the commons is highly context-dependent. Thus, rules and institutions should not be examined in isolation but as configurations. In the fiscal commons, this also includes informal institutions that regulate both the style of collective decision-making and the linkages between voters and representatives. Moreover, the role of ideas seems to have escaped the attention of the fiscal commons literature almost completely. As the metaphor deals with the internalisation and externalisation of benefits and costs, the prevalent ways of thinking can affect the ways in which they are perceived in the political process.

Acknowledgements

The author wishes to thank the participants of the Public Choice Research Centre seminar as well as the participants of the research seminar of the Political Science unit at the University of Turku for helpful comments. This work has been supported by the Finnish Cultural Foundation, Varsinais-Suomi Regional Fund and the Academy of Finland.

References

Aristotle (1932), *Politics*, transl. by H. Rackham, Cambridge, Mass.: Harvard University Press.

Baland, J.M. and Platteau, J.P. (1999), "The ambiguous impact of inequality on local resource management," *World Development* 27: 773–788.

Baqir, R. (2002), "Districting and government overspending," *Journal of Political Economy* 110: 1318–1354.

Baron, D.P. and Ferejohn, J.A. (1989), "Bargaining in legislatures," *American Political Science Review* 83: 1181–1206.

Bawn, K. and Rosenbluth, F. (2006), "Short versus long coalitions: electoral accountability and the size of the public sector," *American Journal of Political Science* 50: 251–265.

Berry, C. (2008), "Piling on: multilevel government and the fiscal common-pool," *American Journal of Political Science* 52: 802–820.

Besley, T. (2006), *Principled agents? The political economy of good government*, Oxford: Oxford University Press.

Blom-Hansen, J. (2010), "Municipal amalgamations and common pool problems: the Danish local government reform in 2007," *Scandinavian Political Studies* 33: 51–73.

Chen, J. and Malhotra, N. (2007), "The law of *k/n*: the effect of chamber size on government spending in bicameral legislatures," *American Political Science Review* 101: 657–676.

Clarke, K.A. and Primo, D.M. (2012), *A model discipline: Political science and the logic of representations*, New York: Oxford University Press.

Crepaz, M.L. and Moser, A.W. (2004), "The impact of collective and competitive veto points on public expenditures in the global age," *Comparative Political Studies* 37: 259–285.

de Haan, J., Jong-A-Pin, R. and Mierau, J.O. (2013), "Do budgetary institutions mitigate the common-pool problem? New evidence for the EU," *Public Choice* 156: 423–441.

Downs, A. (1960), "Why the government budget is too small in a democracy," *World Politics* 12: 541–563.

Egger, P. and Koethenbuerger, M. (2010), "Government spending and legislative organization: quasi-experimental evidence from Germany," *American Economic Journal: Applied Economics* 2: 200–212.

Elgie, R. and McMenamin, I. (2008), "Political fragmentation, fiscal deficits and political institutionalisation," *Public Choice* 136: 255–267.

Faysse, N. (2005), "Coping with the tragedy of the commons: game structure and design of rules," *Journal of Economic Surveys* 19: 239–261.

Feeny, D., Berkes, F., McCay, B.J. and Acheson, J.M. (1990), "The tragedy of the commons: twenty-two years later," *Human Ecology* 18: 1–19.

Felsenthal, D.S. and Machover, M. (1998), *The measurement of voting power: theory and practice, problems and paradoxes,* Cheltenham: Edward Elgar.

Franzese, R.J. (2010), "The multiple effects of multiple policymakers: veto actors bargaining in common pools," *Rivista Italiana di Scienza Politica* 40: 341–369.

Gardner, R., Ostrom, E. and Walker, J.M. (1990), "The nature of common-pool resource problems," *Rationality and Society* 2: 335–358.

Hallerberg, M., Strauch, R.R. and von Hagen, J. (2009), *Fiscal governance in Europe,* New York: Cambridge University Press.

Hardin, G. (1968), "The tragedy of the commons," *Science* 162: 1243–1248.

Hardin, G. (1998), "Extensions of the 'tragedy of the commons'," *Science* 280: 682–683.

Hardin, R. (1982), *Collective action,* Baltimore: The Johns Hopkins University Press.

Kiss, A. (2009), "Coalition politics and accountability," *Public Choice* 139: 413–428.

Lizzeri, A. and Persico, N. (2005), "A drawback of electoral competition," *Journal of the European Economic Association* 3: 1318–1348.

Martin, L. W. and Vanberg, G. (2013), "Multiparty government, fiscal institutions, and public spending," *The Journal of Politics* 75: 953–967.

McKenzie, K.J. (2001), *A tragedy of the House of Commons: Political institutions and fiscal policy outcomes from a Canadian perspective,* Toronto: C.D. Howe Institute.

Medina, L.F. (2013), "The analytical foundations of collective action theory: a survey of some recent developments," *Annual Review of Political Science* 16: 259–283.

Mukherjee, B. (2003), "Political parties and the size of government in multiparty legislatures: examining cross-country and panel data evidence," *Comparative Political Studies* 36: 699–728.

Mukherjee, N. (2013), "Party systems and human well-being," *Party Politics* 19: 601–623.

Olson, M. (1971), *The logic of collective action*, Cambridge, Mass.: Harvard University Press.

Olson, M. (1974), "On the priority of public problems," in: R. Marris (ed.), *The corporate society*, London: Macmillan.

Olson, M. (1990), *How bright are the northern lights? Some questions about Sweden*, Lund: Institute of Economic Research, Lund University.

Ostrom, E. (1990), *Governing the commons*, Cambridge: Cambridge University Press.

Ostrom, E. (2003), "How types of goods and property rights jointly affect collective action," *Journal of Theoretical Politics* 15: 239–270.

Ostrom, E., Gardner, R. and Walker, J. (1994), *Rules, games, and common-pool resources*, Ann Arbor: The University of Michigan Press.

Ostrom, E. and Ostrom, V. (2014 [2004]), "The quest for meaning in public choice," in: F. Sabetti and P.D. Aligica (eds.), *Choice, rules and collective action: the Ostroms on the study of institutions and governance*, Colchester: ECPR Press.

Perotti, R. and Kontopoulos, Y. (2002), "Fragmented fiscal policy," *Journal of Public Economics* 86: 191–222.

Persson, T., Roland, G. and Tabellini, G. (2007), "Electoral rules and government spending in parliamentary democracies," *Quarterly Journal of Political Science* 2: 155–188.

Primo, D.M. and Snyder, J.M. (2008), "Distributive politics and the law of 1/n," *The Journal of Politics* 70: 477–486.

Raudla, R. (2010), "Governing budgetary commons: what can we learn from Elinor Ostrom?" *European Journal of Law and Economics* 30: 201–221.

Scartascini, C.G. and Crain, W.M. (2002), "The size and composition of government spending in multi-party systems". Retrieved 25 April 2014 from http://ssrn.com/abstract=1353462.

Schwartz, T. (1994), "Representation as agency and the Pork Barrel Paradox," *Public Choice* 78: 3–21.

Shepsle, K.A. and Weingast, B.R. (1981), "Political preferences for the pork barrel: a generalization," *American Journal of Political Science* 25: 96–111.

Velasco, A. (2000), "Debts and deficits with fragmented fiscal policymaking," *Journal of Public Economics* 76: 105–125.

von Hagen, J. (1991), "A note on the empirical effectiveness of formal fiscal restraints," *Journal of Public Economics* 44: 199–210.

von Hagen, J. and Harden, I. (1995), "Budget processes and commitment to fiscal discipline," *European Economic Review* 39: 771–779.

Wehner, J. (2010a), "Cabinet structure and fiscal policy outcomes," *European Journal of Political Research* 49: 631–653.

Wehner, J. (2010b), “Institutional constraints on profligate politicians: the conditional effect of partisan fragmentation on budget deficits,” *Comparative Political Studies* 43: 208–229.

Weingast, B.R. (1979), “A rational choice perspective on congressional norms,” *American Journal of Political Science* 23: 245–262.

Weingast, B.R., Shepsle, K.A. and Johnsen, C. (1981), “The political economy of benefits and costs: a neoclassical approach to distributive politics,” *Journal of Political Economy* 89: 642–664.

Table 1. A typology of goods (modified from Ostrom et al. 1994).			
		Exclusion	
		Easy	Difficult
Subtractability	Low	Club (toll) goods	Public goods
	High	Private goods	Common-pool resources

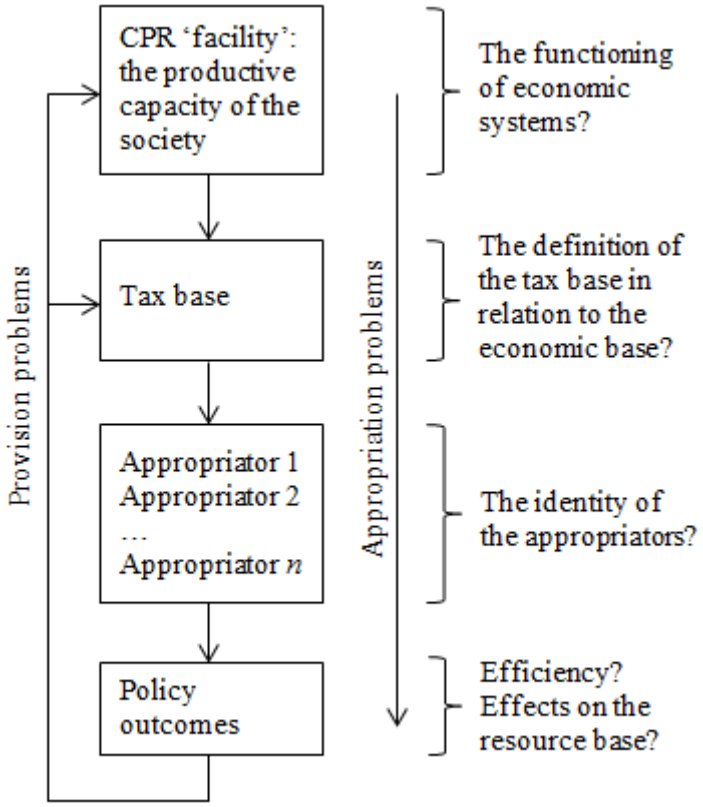

Figure 1. The structure of a fiscal common-pool resource situation.