

Public Budgeting and Common Pool Resources

Dr. Andrew Eggers

LSE

17 January 2014

Introduction

Background

- My philosophy of the course
- Plan for the term

Common pool problems

- An analogy: a group dinner
- Budgeting as a common pool problem
- An example from Finland
- The importance of budgeting procedures

Conclusion

Plan

1. **Background, philosophy of the course, plan of the term:** What are we doing, and why?

Plan

1. **Background, philosophy of the course, plan of the term:** What are we doing, and why?
2. **Then:** Lecture on government spending as a common pool problem.

Plan

1. **Background, philosophy of the course, plan of the term:** What are we doing, and why?
2. **Then:** Lecture on government spending as a common pool problem.

Goal: See how/when government spending can be viewed as a common pool problem (and how it can be fixed)

Plan

1. **Background, philosophy of the course, plan of the term:** What are we doing, and why?
2. **Then:** Lecture on government spending as a common pool problem.

Goal: See how/when government spending can be viewed as a common pool problem (and how it can be fixed)

Motivation:

- ▶ One explanation for (much-discussed) government overspending, with implications for budgeting processes, federalism/decentralization
- ▶ An application of ideas about “market failure” from microeconomics to the problem of “government failure”

Introduction

Background

- My philosophy of the course
- Plan for the term

Common pool problems

- An analogy: a group dinner
- Budgeting as a common pool problem
- An example from Finland
- The importance of budgeting procedures

Conclusion

Why does an MPA need GV478?

Some of the most important questions are about the effect of particular **policy interventions**, including ones affecting **political institutions**:

- ▶ Would policy outcomes improve if politicians faced more **public scrutiny**? (Or, has additional public scrutiny improved policy outcomes?)
- ▶ What would happen if country X adopted a different **electoral system**?
- ▶ Would **public funding of elections** improve policy outcomes for less well represented groups in society?

Why does an MPA need GV478?

Some of the most important questions are about the effect of particular **policy interventions**, including ones affecting **political institutions**:

- ▶ Would policy outcomes improve if politicians faced more **public scrutiny**? (Or, has additional public scrutiny improved policy outcomes?)
- ▶ What would happen if country X adopted a different **electoral system**?
- ▶ Would **public funding of elections** improve policy outcomes for less well represented groups in society?

Answers to these questions may help you figure out how to “make a difference”.

No easy answers

Unfortunately, knowledge of the social world is always highly **partial**:

- ▶ “This model clarifies some conditions under which scrutiny increases political accountability.”
- ▶ “This cross-country regression shows the correlation between electoral system and outcome Y .”
- ▶ “This model highlights some of the tradeoffs involved in public financing of elections.”

How do you use this?

- ▶ **Become an able skeptic:** general, confident statements about politics and policy are often wrong

How do you use this?

- ▶ **Become an able skeptic:** general, confident statements about politics and policy are often wrong
- ▶ **Organize your thinking:** smart people can break down a problem into parts

How do you use this?

- ▶ **Become an able skeptic:** general, confident statements about politics and policy are often wrong
- ▶ **Organize your thinking:** smart people can break down a problem into parts
- ▶ **See things at a more fundamental level:** good analysts see *classes of problems*, use this to address problems

Onion article that makes professors uncomfortable

Professor Sees Parallels Between Things, Other Things

AUSTIN, TX – University of Texas professor Thom Windham once again furthered the cause of human inquiry in a class lecture Monday, as he continued his longtime practice of finding connections between things and other things, pointing out these parallels, and then elaborating on them in detail, campus sources reported.

“By drawing parallels between things and other, entirely different things, I not only further my own studies, but also encourage young minds to develop this comparative methodology in their own work,” said Windham, holding his left hand up to represent one thing, then holding his right hand up to represent a separate thing, then bringing his hands together in simulation of a hypothetical synthesis of the two things. “It’s not just similarities that are important, though – the differences between things are also worth exploring at length.”

Fifteen years ago, Windham was awarded tenure for doing this.

SOURCE: *The Onion*, May 16, 2007; <http://goo.gl/70qx2A>

Three points about models

- ▶ Models are by definition partial views of the world.
- ▶ Models are metaphors.
- ▶ Think of a model as an advisor who **knows one thing well**.

First half: Democratic politics

- ▶ **Week 1:** Government Spending as a Common Pool Problem
- ▶ **Week 2:** Lobbying/Advocacy as a Collective Action Problem
- ▶ **Week 3:** Regulation of Influence in Politics
- ▶ **Week 4:** Voter Competence and Democratic Policymaking
- ▶ **Week 5:** Guest speaker – Michael Hallsworth, Behavioural Insights Team of UK Government

Second half: Non-Democratic politics

- ▶ **Week 6:** Regime Types and Democratization
- ▶ **Week 7:** Coordination: Constitutions and Revolutions
- ▶ **Week 8:** Signaling, Commitment, and Conflict
- ▶ **Week 9:** Transparency
- ▶ **Week 10:** Guest speaker – Kathy Settle, Government Digital Services of UK Government

Introduction

Background

- My philosophy of the course
- Plan for the term

Common pool problems

- An analogy: a group dinner
- Budgeting as a common pool problem
- An example from Finland
- The importance of budgeting procedures

Conclusion

The big idea: pathologies of policymaking

The government appears in two forms in a (caricatured) intro micro-econ course:

- ▶ A nuisance imposing distortions on well-functioning markets
- ▶ A solution to market failure (e.g. asymmetric information, externalities, market power)

The big idea: pathologies of policymaking

The government appears in two forms in a (caricatured) intro micro-econ course:

- ▶ A nuisance imposing distortions on well-functioning markets
- ▶ A solution to market failure (e.g. asymmetric information, externalities, market power)

But why should we expect government to solve market failures? In a democracy, the policymaking process is subject to many of the same pathologies that **produce** market failures. (See Shepsle reading.)

Setup

Suppose a group of n friends sit down to dinner at a restaurant.

Setup

Suppose a group of n friends sit down to dinner at a restaurant.

Two possible arrangements for paying for the dinner:

- ▶ **Separate checks:** Each person pays for own dinner
- ▶ **Single check:** Each person pays an equal share of the overall check

(Note: check = bill)

Setup

Suppose a group of n friends sit down to dinner at a restaurant.

Two possible arrangements for paying for the dinner:

- ▶ **Separate checks:** Each person pays for own dinner
- ▶ **Single check:** Each person pays an equal share of the overall check

(Note: check = bill)

Which arrangement will produce a larger total order? (Assuming everyone orders independently.)

Optimization problem (for each person)

Choose q (amount of food ordered) to maximize individual benefit.

Optimization problem (for each person)

Choose q (amount of food ordered) to maximize individual benefit.

Assume

- ▶ diminishing marginal benefit of consumption (i.e. $\frac{dB}{dq} < 0$)
- ▶ cost of each unit of q is 1, and
- ▶ n people at the table.

Optimization problem (for each person)

Choose q (amount of food ordered) to maximize individual benefit.

Assume

- ▶ diminishing marginal benefit of consumption (i.e. $\frac{dB}{dq} < 0$)
- ▶ cost of each unit of q is 1, and
- ▶ n people at the table.

Assuming an interior solution (i.e. optimal $q > 0$), for each individual the optimal amount to order is where

$$MB = MC.$$

Optimization problem (for each person)

Choose q (amount of food ordered) to maximize individual benefit.

Assume

- ▶ diminishing marginal benefit of consumption (i.e. $\frac{dB}{dq} < 0$)
- ▶ cost of each unit of q is 1, and
- ▶ n people at the table.

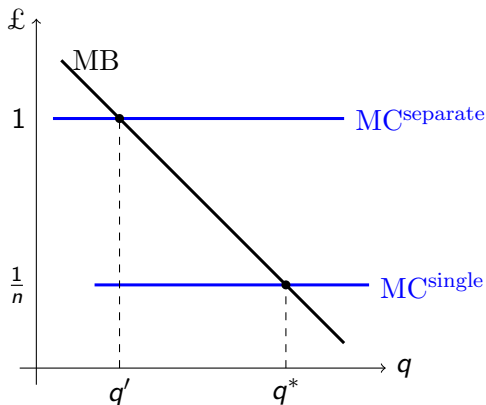
Assuming an interior solution (i.e. optimal $q > 0$), for each individual the optimal amount to order is where

$$MB = MC.$$

The marginal cost depends on the rule used:

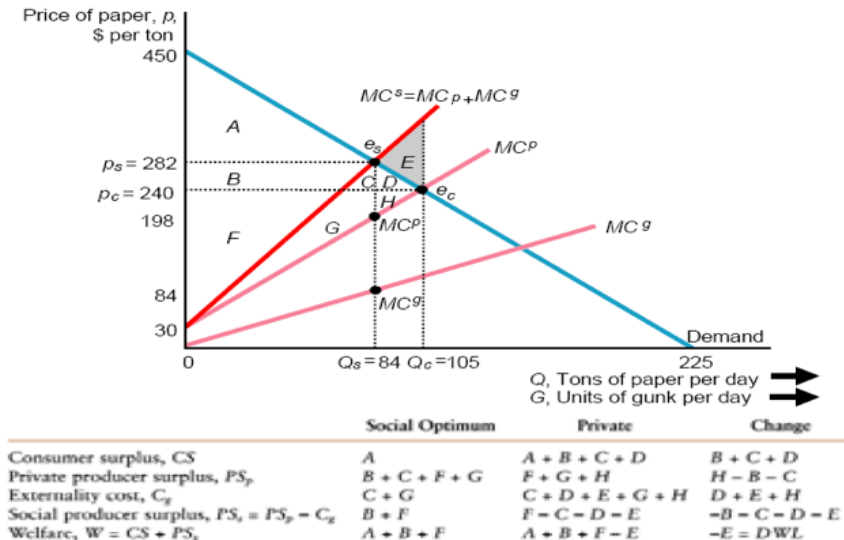
- ▶ **Separate checks:** $MC = 1$
- ▶ **Single check:** $MC = 1/n$

Optimization problem: graphically



	Payment rule: Separate checks	Single check
Marginal cost:	1	$\frac{1}{n}$
(Privately) optimal order:	q'	q^*

Externalities and common pool problems



Externalities and common pool problems (2)

Common pool problem: over-consumption of shared resources.

Externalities and common pool problems (2)

Common pool problem: over-consumption of shared resources.

Over-consumption is likely when a shared resource is **expendable** (i.e. is rivalrous) but not **excludable**.

Externalities and common pool problems (2)

Common pool problem: over-consumption of shared resources.

Over-consumption is likely when a shared resource is **expendable** (i.e. is rivalrous) but not **excludable**.

- ▶ “The commons”
- ▶ Fish populations
- ▶ The atmosphere

Policy responses to common pool problems

Possible solutions (with **dinner problem** analogues):

Policy responses to common pool problems

Possible solutions (with **dinner problem** analogues):

- ▶ “The commons” \implies assign property rights by selling pieces to individuals (“**separate checks**”)

Policy responses to common pool problems

Possible solutions (with **dinner problem** analogues):

- ▶ “The commons” \implies assign property rights by selling pieces to individuals (“**separate checks**”)
- ▶ Fish populations \implies set catch limits for those with access to the resource (**agree on per-person order limit?**)

Policy responses to common pool problems

Possible solutions (with **dinner problem** analogues):

- ▶ “The commons” \implies assign property rights by selling pieces to individuals (“**separate checks**”)
- ▶ Fish populations \implies set catch limits for those with access to the resource (**agree on per-person order limit?**)
- ▶ The atmosphere \implies impose carbon tax (or cap and trade) to make users internalize the cost (**social sanctions?**)

Policy responses to common pool problems

Possible solutions (with **dinner problem** analogues):

- ▶ “The commons” \implies assign property rights by selling pieces to individuals (“**separate checks**”)
- ▶ Fish populations \implies set catch limits for those with access to the resource (**agree on per-person order limit?**)
- ▶ The atmosphere \implies impose carbon tax (or cap and trade) to make users internalize the cost (**social sanctions?**)

See Elinor Ostrom’s work on managing common pool resources.

Government failures

- ▶ **(Caricatured) economist:** When I consider market failures (problems with common pool resources, public goods provision, externalities, etc.), I think we need policy interventions by government.

Government failures

- ▶ **(Caricatured) economist:** When I consider market failures (problems with common pool resources, public goods provision, externalities, etc.), I think we need policy interventions by government.
- ▶ **Political scientist/political economist:** When I consider policy interventions by government, I see many of the same underlying problems behind market failures (problems with common pool resources, public goods provision, externalities, etc.).

Government failures

- ▶ **(Caricatured) economist:** When I consider market failures (problems with common pool resources, public goods provision, externalities, etc.), I think we need policy interventions by government.
- ▶ **Political scientist/political economist:** When I consider policy interventions by government, I see many of the same underlying problems behind market failures (problems with common pool resources, public goods provision, externalities, etc.).

Today: budgeting as common pool problem.

Next week: collective action problems in lobbying/advocacy.

Setup

Consider a territory divided into n identical districts, each with its own legislator.

Setup

Consider a territory divided into n identical districts, each with its own legislator.

The legislators are deciding how much to spend in each district.

Setup

Consider a territory divided into n identical districts, each with its own legislator.

The legislators are deciding how much to spend in each district.

Assume that:

- ▶ There are no problems of representation: the legislator is the only person living in each district.

Setup

Consider a territory divided into n identical districts, each with its own legislator.

The legislators are deciding how much to spend in each district.

Assume that:

- ▶ There are no problems of representation: the legislator is the only person living in each district.
- ▶ Spending must be paid for by tax revenues.

Setup

Consider a territory divided into n identical districts, each with its own legislator.

The legislators are deciding how much to spend in each district.

Assume that:

- ▶ There are no problems of representation: the legislator is the only person living in each district.
- ▶ Spending must be paid for by tax revenues.
- ▶ The benefits of spending in district i are only enjoyed by residents of district i .

Setup (2)

Suppose the budget is compiled by asking each legislator how much should be spent in his/her district.

Setup (2)

Suppose the budget is compiled by asking each legislator how much should be spent in his/her district.

Consider two possible arrangements for dividing up the cost of public spending:

- ▶ **No central government:** Each district pays for its own spending
- ▶ **Common tax fund:** Each district pays an equal share of the overall tax bill

Setup (2)

Suppose the budget is compiled by asking each legislator how much should be spent in his/her district.

Consider two possible arrangements for dividing up the cost of public spending:

- ▶ **No central government:** Each district pays for its own spending
- ▶ **Common tax fund:** Each district pays an equal share of the overall tax bill

Which arrangement will produce a larger total budget?

Generalizing a bit

Note that the same dynamic could take place if the “districts” are not geographical districts but rather “special interests”.

Generalizing a bit

Note that the same dynamic could take place if the “districts” are not geographical districts but rather “special interests”.

For example, suppose a government consists of a

- ▶ Defense minister
- ▶ Health minister
- ▶ Sport minister

The benefits of spending in each area may be concentrated in particular parts of the population, while the costs are shared. Each minister may then request more spending in his/her area than would make sense given the benefits.

Budget as common pool (2)

What we've done: stripped away lots of complexity to highlight how common pool problems can appear in budgeting.

Does this mean government spending is too high?

Finnish municipal mergers paper: setup

Saarimaa and Tukiainen (2013), “Common Pool Problems in Voluntary Municipal Mergers”

- ▶ In 2005, Finnish central government introduces subsidies to promote municipal mergers (for efficiency reasons)
- ▶ In 2006 and 2007, 32 municipal mergers are decided upon
- ▶ In 2009 these mergers go into effect

Finnish municipal mergers paper: setup

Saarimaa and Tukiainen (2013), “Common Pool Problems in Voluntary Municipal Mergers”

- ▶ In 2005, Finnish central government introduces subsidies to promote municipal mergers (for efficiency reasons)
- ▶ In 2006 and 2007, 32 municipal mergers are decided upon
- ▶ In 2009 these mergers go into effect

Claim: In 2007 and 2008, there was a temporary common pool problem among municipalities that had decided to merge: they could “order a big dinner” and only pay part of the cost.

Finnish municipal mergers paper: setup

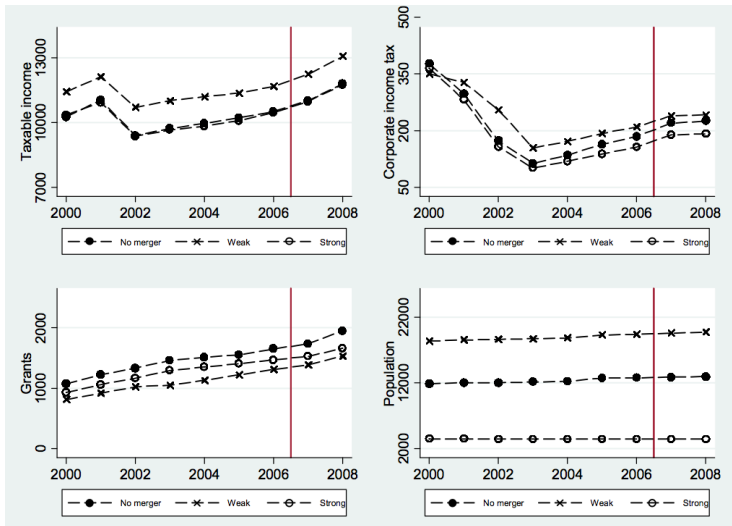
Saarimaa and Tukiainen (2013), “Common Pool Problems in Voluntary Municipal Mergers”

- ▶ In 2005, Finnish central government introduces subsidies to promote municipal mergers (for efficiency reasons)
- ▶ In 2006 and 2007, 32 municipal mergers are decided upon
- ▶ In 2009 these mergers go into effect

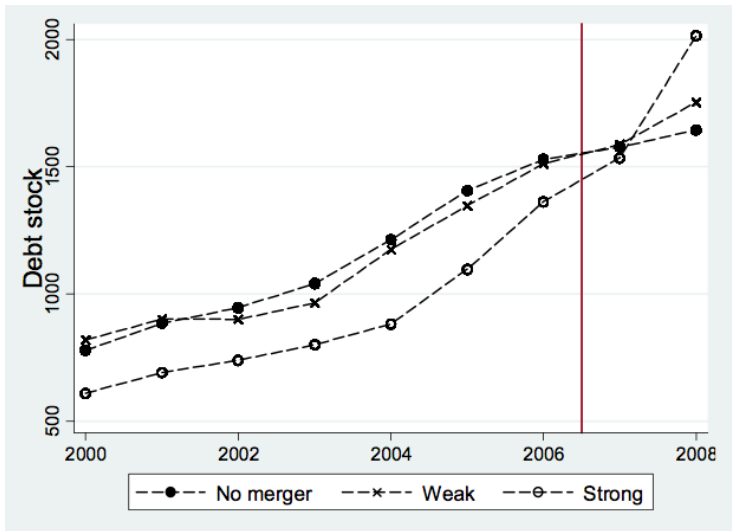
Claim: In 2007 and 2008, there was a temporary common pool problem among municipalities that had decided to merge: they could “order a big dinner” and only pay part of the cost.

Research design: Diff-in-diff comparing spending of (small) merging municipalities with that of similar non-merging municipalities, before and after the merger decisions.

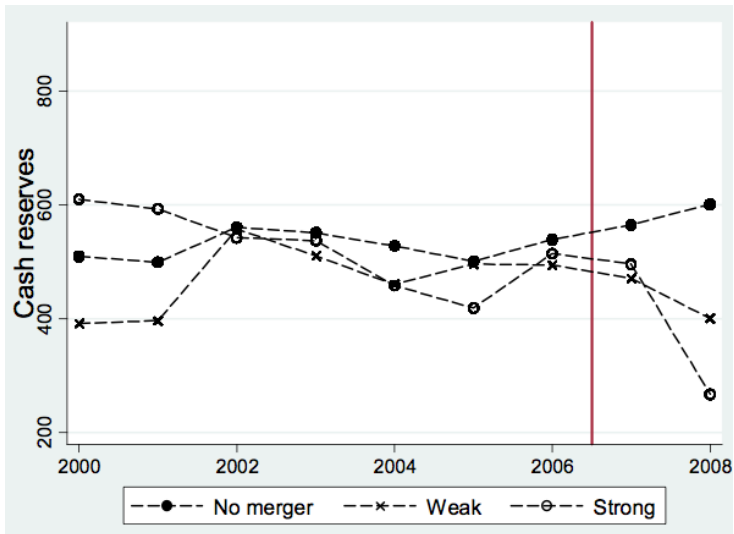
Finnish mergers: parallel trends assumption



Finnish mergers: DID results 1



Finnish mergers: DID results 2



Finnish municipal merger example: recap

The situation fits the “common pool” setup well, because

- ▶ The municipalities that were merging could **choose their own spending levels** – not much their merger partners could do
- ▶ Municipal spending mainly benefits the municipality (**localized benefits**)

Finnish municipal merger example: recap

The situation fits the “common pool” setup well, because

- ▶ The municipalities that were merging could **choose their own spending levels** – not much their merger partners could do
- ▶ Municipal spending mainly benefits the municipality (**localized benefits**)

What about in a legislature?

How is the budget decided?

In the setup above (and in the Finnish example), there was no **collective decision-making process** – no vote, no possibility of veto.

How is the budget decided?

In the setup above (and in the Finnish example), there was no **collective decision-making process** – no vote, no possibility of veto.

But the way in which budgets are assembled and approved is **crucial** for determining the extent of common pool problems.

How is the budget decided?

In the setup above (and in the Finnish example), there was no **collective decision-making process** – no vote, no possibility of veto.

But the way in which budgets are assembled and approved is **crucial** for determining the extent of common pool problems.

Let's consider two voting procedures:

- ▶ Separate vote on **each district's** spending proposal
- ▶ Series of votes to determine a **spending rule** – a single amount that each district will spend

Procedure 1: separate vote on each district's spending proposal

Given the setup above, what is the maximum amount of “local” spending that district i could successfully propose?

Procedure 2: series of votes to determine a spending rule

Going back to the dinner example, one solution is for the people at the table to agree on a “spending rule” that applies to all.

Procedure 2: series of votes to determine a spending rule

Going back to the dinner example, one solution is for the people at the table to agree on a “spending rule” that applies to all.

Claim: For each person, the optimal “spending rule” involves each person spending the same amount he/she would spend with “separate checks”.

Procedure 2: series of votes to determine a spending rule

Going back to the dinner example, one solution is for the people at the table to agree on a “spending rule” that applies to all.

Claim: For each person, the optimal “spending rule” involves each person spending the same amount he/she would spend with “separate checks”.

⇒ an aggregate procedure for deciding on behavior could solve the problem. (See problem set.)

Another procedure: centralizing budgetary authority

Given the setup, another approach would be to **centralize budgetary authority**: give power to a president, a finance minister, a party leader who seeks to please all of the districts.

Evidence on deficits and centralization of budget process (1)

Cheibub (2006) finds that budget balances are more positive in presidential systems:

Evidence on deficits and centralization of budget process (1)

Cheibub (2006) finds that budget balances are more positive in presidential systems:

TABLE 2. Determinants of Budget Balances: Impact of G Status, and Form of Government

Dependent Variable: Central Government Budget Balance (% GDP)	
	(1)
β_0 . Constant	2.196
	<i>0.030</i>
β_1 . Coalition Government	-0.1655
	<i>0.329</i>
β_2 . Minority Government	0.3943
	<i>0.024</i>
β_3 . Presidential System	0.7458
	<i>0.037</i>

NOTE: p-values in italics.

Evidence on deficits and centralization of budget process (2)

For Latin America, Alesina, Hausmann, Hommes, and Stein (1999) find that deficits are lower in countries with more “hierarchical” budget institutions:

Evidence on deficits and centralization of budget process (2)

For Latin America, Alesina, Hausmann, Hommes, and Stein (1999) find that deficits are lower in countries with more “hierarchical” budget institutions:

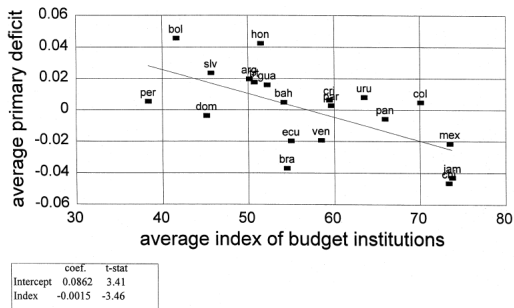


Fig. 4. Budget institutions and fiscal outcomes (1980–1992).

What's missing?

- ▶ **Spillovers:** what if spending in district i brings a benefit to neighboring districts? Opposite problem, many of the same solutions.

What's missing?

- ▶ **Spillovers:** what if spending in district i brings a benefit to neighboring districts? Opposite problem, many of the same solutions.
- ▶ **Representation/influence:** what if we combine **common pool problem** and **collective action problems**? Collective action problems next week.

What's missing?

- ▶ **Spillovers:** what if spending in district i brings a benefit to neighboring districts? Opposite problem, many of the same solutions.
- ▶ **Representation/influence:** what if we combine **common pool problem** and **collective action problems**? Collective action problems next week.
- ▶ What else?

Introduction

Background

- My philosophy of the course
- Plan for the term

Common pool problems

- An analogy: a group dinner
- Budgeting as a common pool problem
- An example from Finland
- The importance of budgeting procedures

Conclusion

Wrapping up

Key points:

- ▶ Some of the same pathologies that justify government intervention can be found in any attempt at government intervention.

Wrapping up

Key points:

- ▶ Some of the same pathologies that justify government intervention can be found in any attempt at government intervention.
- ▶ Government budgets can be “over-grazed” (tragedy of the commons), but it depends a lot on how decisions are made.

Wrapping up

Key points:

- ▶ Some of the same pathologies that justify government intervention can be found in any attempt at government intervention.
- ▶ Government budgets can be “over-grazed” (tragedy of the commons), but it depends a lot on how decisions are made.
- ▶ Empirically, evidence of common pool problems and the value of centralization to address it.

Wrapping up

Key points:

- ▶ Some of the same pathologies that justify government intervention can be found in any attempt at government intervention.
- ▶ Government budgets can be “over-grazed” (tragedy of the commons), but it depends a lot on how decisions are made.
- ▶ Empirically, evidence of common pool problems and the value of centralization to address it.

Next week: lobbying/advocacy and [collective action problems](#).