Chapter 2: The Anatomy of Government Failure

Contents

"(E)fficient government ... is a standard by which performance can be measured, similar to corresponding standards by which performance of households and firms in the private sector are assessed. Actual performance will differ among governments and periods of time, but efficient conduct and constructive leadership are not beyond reach." Musgrave (1999, page 34).

1 Introduction

Government failure is a term that is often used, but rarely defined. The basic and highly intuitive idea is that there are systematic reasons why government fails to deliver the kind of service to its citizens that would be ideal. It is invoked, in particular, as a reason to be doubtful about the usefulness of the standard welfare-economic recommendations for government intervention. An analyst will frequently say that government failures need to be weighed against market failures in making the case for government intervention according to welfare economic prescriptions.

However, unlike its sister notion of market failure, no systematic account can be found of this idea in the political economy literature. This chapter tries to remedy this by discussing alternative notions of government failure. It will do so through some general discussion as well as developing a simple example to illustrate the main ideas.

It is important to distinguish government failure from a narrower concept of *political failure*. Government failure refers to problems that arise when one actor in the economy (the state) monopolizes the legitimate use of force. Political failure refers to the narrower idea of problems that arise when power to control this monopoly is allocated in *democratic* political systems. Political failures as described here are therefore a subset of government failures.

Two examples will help to make this distinction clear. The first example is the problem of imperfect information and the provision of public goods. It is well-known since the seminal work of Clarke (1971) and Groves (1973) that the inability of governments to measure accurately the valuations that individuals place on public goods may lead to a suboptimal level of government provision. This implies that the Lindahl-Samuelson rule for public goods provision cannot be achieved. The problem is generic to the operation of government and is likely to arise (to some degree) under *any* system of government. Hence, imperfect information of this form may constitute a government failure. But it has nothing to do with politics.

For the second example, consider the problem of finding rules for the operation of a legislature charged with making decisions about public re-

source allocation. Suppose that the legislature concentrates the power to set the policy agenda to a single individual, with the others able to vote on his or her proposals. Suppose that this agenda setter represents a particular district, but through self interest, fails to internalize the impact that spending in his/her own district has on other districts. This will lead to a sub-optimal pattern of resource allocation. It may be possible to construct a Pareto improvement in public resource allocation (assuming that suitable compensatory transfers can be made). Imperfections in the operation of legislative bodies can result in political failures.

It is often not important whether a particular problem in the functioning of government is a government failure or is specifically associated with democratic resource allocation. However, there are two reasons to be interested especially in political failure. First, studying political failure may give a sense of the potential drawbacks of democracy which as we argued in the last chapter is coming to be a dominant institution. As with studies of markets which motivated ideas of market failure, it is useful to know how democracy really works. Second, studying political failures may give concrete insights into how democratic systems of government may be improved, in particular how changing the rules of the game can lead to improvements in resource allocation.

The standard way in which economists discuss market resource allocation provides a model for thinking about government failure. As we discussed in the previous chapter, the primary criteria of assessment are equity and efficiency. While the term *market failure* is typically reserved to describe situations where market resource allocation results in Pareto inefficiency, government failure, as we shall discuss below, has been used rather differently. In fact, there are three main notions that the literature has suggested. Only one of these corresponds straightforwardly to the standard definition of market failure.

As with market failure, it would be useful to understand just how prevalent government failure is. There are those, for example Wittman (1997) who have argued that democratic systems will tend to produce efficient results. However, the Public Choice tradition as typified by Buchanan and Tullock (1962) sees the world quite differently. In part, these conflicting views stem from using the term government failure rather differently. Either way, with such conflicting claims, it is necessary to look closely at these issues.[1]

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[1] Acemoglu (2003) in many ways shares the ambition of this chapter. He frames the issue as understanding why the Coase theorem fails in a political arena. Much of the discussion of government failure here – especially the examples of Pareto inefficiencies – could be framed in this way. Acemoglu (2005) persues the more

The title of this chapter borrows unashamedly from Bator (1958) which pulled together various ideas of market failure for the first time. He defines his quest as "an attempt .. to explore ... those phenomena which cause even errorless profit- and preference-maximizing calculation .. to fail to sustain Pareto-efficient allocation." (page 352). He argues that non-appropriability, non-convexity and public goods are the main sources of market failure. In principle, we would like to catalog government failures in terms of similarly simple categories.

The procedure we will adopt is similar. We will assume that actors in government and political processes maximize their payoffs under appropriate constraints. We will then explore when this leads to policy outcomes and patterns of private influence activity that are Pareto inefficient. The overall aim is to identify the basis of inefficiencies. We will also broaden the set of possible normative criteria to include cases where political resource allocation is inegalitarian. Finally, we will consider the implications of certain non-consequentialist criteria.

As we discuss in greater detail below. Ideas about government failure are central to understanding constitution design. However, it also plays a central role in thinking about economic policy reform and reasons why apparently beneficial reforms are not undertaken.[2] By appreciating the specific form that a government failure may take, it may be possible to understand when reforms are likely to work in the way that their architects intend.

2   Three notions of Government Failure

In this section, we discuss three ways of defining policy outcomes as government failures. The first parallels the classic definition of market failure – Pareto inefficiency. The second allows the possibility that the political process produces an "undesirable" distributional outcome. The third is due to Wicksell and has been developed in the writings of James Buchanan – it is based on whether a particular intervention Pareto dominates what would happen in the absence of government.

As we shall see in the example studied in the next section, these notions of government failure can be applied to the policy *outcome* and to the policy *process,* i.e., to any resources used up in the decision making process. The latter refer, in particular, to standard "rent-seeking" inefficiencies. Thus, we need to study the set of policy outcomes and a set of private and public actions that are made to achieve this outcome. A government failure might then arise either because the policies

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ambitious task of look an institutions in a policy setting in order to understand institutional failure (in the language of this chapter).

[2]See Rodrik (1996) for an excellent discussion of such issues in general.

selected are poor or because the means of picking (even good) policies is very costly. A system of government free from government failure will pick good policies and policy processes. It will also encourage efficient private actions to affect policy outcomes.

2.1 Pareto Inefficiency

The most obvious definition of government failure to an economist is based on *Pareto efficiency*. This most clearly parallels the textbook case of market failure. This is motivated by a long tradition in public economics which has studied (in particular) Pareto efficient taxation and public spending.[3] For example, the Ramsey tax rule and Lindahl-Samuelson rule for provision of public goods are policy rules that follow from the characterization of Pareto efficient policies.

The output of such an exercise is society's *Utility Possibility Frontier*. This characterizes the set of government policies and private resource allocation decisions where an individual cannot be made better off without another being made worse off. Being Pareto inefficient means operating inside this frontier. Pareto inefficiency is the economists' free lunch – it should be possible to pick a different set of policies and/or private decisions so as to make *every* citizen better off.

Market failure is defined as a situation where markets fail to achieve an allocation on the Pareto frontier. Applied to government failure, this approach says that government fails when *policies* result in a society being inside its Pareto frontier. Given the obvious extension of market failure analysis in this way, it is somewhat surprising that this notion of government failure has received so little attention in the literature. It was suggested as the appropriate benchmark for government in Besley and Coate (1997) and developed further in Besley and Coate (1998).

Government failure as Pareto inefficiency is in many ways a weak criterion. As observed in Besley and Coate (1997), any situation where some citizen is given the right to pick policy from the feasible set will be trivially Pareto efficient in a static setting since it is certainly not possible to make the policy maker better off. However, we will see that there are some interesting non-trivial examples of government failure defined this way in dynamic models.

2.2 Distributional Failures

As we discussed in the previous chapter, Pareto efficiency is frequently deemed too weak a criterion for normative analysis. After all, a political equilibrium in which a dictator transfers the whole of society's resources

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[3]See, for example, Atkinson and Stiglitz (1980).

to himself and a few of his cronies can be efficient. Yet few would regard it as a satisfactory state of affairs and many think that this could constitute a government failure. The only way to tackle such concerns is to bring in distributional concerns and to judge the policy outcome and process accordingly.

Some authors, for example Mueller (1996), seem to regard transfers to farmers in rich countries, heavily subsidized public projects (such as the development of Concorde) or geographical targeting of public goods to particular regions as prima facie evidence of government failure.[4] If such transfers are made inefficiently, then this collapses back to the first definition of government failure. However, assuming that this is not a source of Pareto inefficiency, it is clear that there is an implicit appeal to particular social welfare function against which the policy produced by government is being judged. These examples therefore lie in the realm of distributional failures.

Thus, to make this operational requires some kind of distributional metric, i.e. a social welfare function. However, unless there is a fair degree of consensus on social preferences, the conclusions from such an analysis will likely be controversial. Since there is little reason to suppose that any kind of political process will maximize a well-defined social welfare function, then the danger is that any policy picked in a democracy will result in a government failure according to this definition.[5] Hence, this notion of government failure risks having no bite at all.

However, this is probably too pessimistic. There might, for example, be rather broad agreement that any decent government should limit the extent to which the government officials use the state for the purposes of self-enrichment, however efficiently they choose to do it. The experience of kleptocratic dictators such as Mobutu in Zaire or Marcos in the Philippines underline the generalized outrage that is felt when government is used as a vehicle for self-enrichment.

Another approach to thinking about government failure which invokes an element of distribution is *social surplus*. The notion of social surplus only makes sense as an efficiency criterion in the case of "transferable utility", i.e. utility that is linear in money. It can then be motivated in terms of a compensation test – of the Hicks-Kaldor variety – where the gainers can compensate the losers. Thence if a policy choice

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[4] See, for example, Mueller (1996, page 23).

[5] Proponents of probabilistic voting models have sometimes suggested that particular social welfare functions are maximized in political equilibrium. (See Coughlin (1992) for a discussion.) However, they rest on strong assumptions and it appears unlikely that technological assumptions are at the heart of the distributional conflict implicit in political competition.

maximizes social surplus there is no direction of policy change in which the gainers can compensate the losers. Conversely, moving towards a surplus maximizing policy will guarantee that gainers from the change can compensate losers.

As is well understood, this logic only seems compelling when compensations are actually paid in which case it corresponds to a Pareto improvement. Moreover, payment of compensation can happen only with a very rich set of policy levers, including lump-sum taxes and transfers. If compensations are not actually paid, then the appeal of surplus maximization is less obvious. It is then best thought of as a distributional rather than an efficiency criterion. Indeed when preferences are linear in money, the social surplus optimum and the Utilitarian social welfare optimum frequently coincide.

While surplus maximization often has appeal given the notion of "making the cake as big as possible", it is better to think of it as a kind of social welfare maximization exercise with a particular social welfare function. In the sequel, we will use it this way. In fact, in our core examples, we will use it as our main example for the investigation of distributional failures. This is because we make no pretence that compensations needed to generate a Pareto improvement are being paid.

In more pragmatic terms, there is a sense in which it serves as a powerful force for criticism in the context of government failures. If policies are captured by political elites or special interests and result in lower social surplus, then there will typically be more sympathy in reducing the political advantages of these groups to benefit the broader group of citizens. When employed in this context, the social surplus criterion can indeed be powerful since it can demonstrate that a small group is profiting at the expense of a much wider group. Thus weighing up the consumer surplus losses from tariff protection against the benefits generated for stakeholders within an industry can have influence on policy debates about protectionism.

As we have already mentioned, distributional considerations are also important in thinking through the implications of politicians earning rents from holding office. There are models that put this at centre stage – including the agency models that we discuss in chapter 3. Another example is the Leviathan model of Brennan and Buchanan (1980) where politicians are assumed to maximize the tax revenue that they can extract from citizens while diverting some tax revenues to private use.

Just how to build a constraint that specifies a government failure in this context is moot even though to many the prima facie case is clear. However, it is worth bearing in mind that the decision to enter

politics is likely to be a function of the rewards on offer to politicians and may affect the competence of those who choose to stand for office (with more competent politicians having a higher opportunity cost). Hence, specifying that there should be no reward to holding political office is probably too strong.

One criterion for government failure would investigate whether it is feasible to obtain the same policy outcome with fewer rents. A government failure would then constitute an outcome with "excessive" rents relative to this benchmark. The surplus maximization criterion could also be useful here in demonstrating that enriching the politician is imposing a significant cost on the voters. Many would not find the case for compensating the politician for his loss of rents compelling and hence one of the objections to surplus maximization falls away.

2.3 Wicksellian Failures

Our third notion of government failure is drawn from the writings of Wicksell (1896). He uses a criterion somewhat outside the standard welfare economic model and is best thought of as a rights based approach which is derived from classical liberalism. At the heart of this is the notion that policy outcomes and political decisions should lead to an outcome that Pareto dominates what would be achieved without government. The idea behind this idea is seen clearly in the following passage:

> "If any public expenditure is to be approved, whether it be a newly proposed or an already existing one, it must generally be assumed that this expenditure as such...is intended for an activity useful to the whole of society and so recognized by all classes without exception. If this were not so ..., then I, for one, fail to see how the latter can be considered as satisfying a collective need in the proper sense of the word. ... It would seem blatant injustice if someone should be forced to contribute toward the costs of some activity which does not further his interests or may even be diametrically opposed to them" Wicksell (1896, page 89).

The main motivation for this idea is to think of government (like the market) as a process of exchange which results in Pareto improvements over some status quo point. Alternatively, it could be approached from a contractual point of view, thinking of citizens as signing up to a grand contract that defines what government will do, with every citizen having veto power over the contract.

This notion limits the extent to which the policy process can lead to redistribution of resources between its citizens. For example, it rules out pure redistribution except in so far as the losers feel altruistic towards the beneficiaries and hence benefit as altruistic donors from redistribution to others. For this reason, the approach is often thought of as providing a conservative way of judging the legitimacy of government intervention. This leads to a marked contrast with the main stream welfare economic tradition. One concern with the approach is the fact that an initially unjust allocation of resources would be perpetuated through history and could not legitimately be changed by government.[6]

2.4 Comparisons

We will now look at how these ideas of government failure relate to each other in an abstract sense. The example that we develop below will give this more precise content. Here, we develop a graphical representation.

As we noted above, the first two criteria of government failure are based on a standard welfare economic approach. They are likely to be nested in the following sense – pretty much any reasonable social welfare function will also regard a Pareto inefficient policy choice as a failure too. Hence, government failures based on Pareto inefficiency tends to be a strict subset of those based on a broader social welfare criterion.

This is illustrated in Figure 1 which illustrates a social welfare function defined on the utilities of two citizens 1 and 2. Point A is the full optimum according to these social preferences. If point B were attained through choice of government policy, then this would be deemed a government failure using these social preferences. However, it is not Pareto inefficient. This makes it clear just how widespread government failures based on distributional preferences are likely to be. Any point away from A is a government failure.

Figure 1 about here

The Wicksellian criterion provides quite a different slant on government failures. Figure 2 illustrates the difference between this criterion and that based on Pareto inefficiency. Suppose that at the status quo

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[6]This was clearly recognized by Wicksell (1896) who notes that "It is clear that justice in taxation tacitly pre-supposes justice in the existing distribution of property and income." (page 108). He goes on "if there are within the existing property and income structure ... priveleges .. in open contradiction with modern concepts of law and equity, then society has both the right and duty to revise the existing property structure." (page 109). Just how this is done, is left to something of a fudge and he entertains some kind of qualified majority rule without specifiying the exact procedure or rule.

(no government), the economy would operate at a point like A. This is inside the Pareto frontier representing the possibility that, say, by fixing market failures, the government can make everyone better off. Suppose that point B is the outcome after government intervention. Point B is now on the Pareto frontier and hence is (second best) efficient. However, it does not constitute a Pareto improvement over point A. Hence, if chosen by government, it would constitute a Wicksellian government failure. However, it would not be a government failure according to the Pareto efficiency definition as there is no scope for improving government efficiency. Now consider point C. According to the Wicksellian definition, it is not a government failure as it a Pareto improvement relative to A. However, the definition based on second-best Pareto efficiency would regard it as a government failure. It is possible to make all citizens better off beginning from this point.

<center>Figure 2 about here</center>

Using Wicksell's definition, a government can intervene efficiently in the welfare economic sense and yet still create a government failure. Indeed, a Wicksellian government failure is possible even if the outcome generated in political equilibrium is social welfare maximizing according to an agreed social welfare function.

3 An Example: Financing a Public Project

As we have shown, these three notions of government failure are distinct. But whether this matters can only be assessed by thinking about concrete policy problems. This is at its starkest in thinking about policies aimed at redistributing income. Suppose that the government does this in the most efficient way. In the case of full information, this would be using lump-sum taxes while otherwise, it would use an optimal income tax or any other appropriate optimal tax system. This is normally studied with reference to a specific social welfare function and any government that did not use this social welfare function would be deemed to have failed on the basis of distributional failure while the Pareto efficiency criterion for government failure would deem *any* tax system which is optimal for some set of welfare weights to be free of government failure. The Wicksellian definition would reject any form of redistribution – so if the economy were Pareto efficient without government intervention, this would mean that there is no legitimate government intervention of this form.

Such abstract discussions of the logic of government failure suggest that pure redistribution is not going to be a case where ideas of government failure have much bite unless there are some predefined notions of

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acceptable income redistribution. Hence, we will focus for the remainder of the discussion on cases where government can intervene when there is some form of inefficiency – specifically private "under-provision" of a public good. This canonical example will allow us to have a richer discussion which does not run into the dead end that we have found for pure redistribution. The competing notions of government failure can then have real bite.

Suppose that a community of N individuals has to make a single social decision – whether to build a public project. We denote the decision to build the project by $e \in \{0,1\}$ where $e = 1$ denotes the case in which the project is constructed. If the project is built, the community must decide how to finance it. Here, we will assume that if the government funds the project then it uses a head tax (equal per capita financing) if the project goes ahead.[7]

There are two groups of citizens – those who value the project and receive utility b from it and those who do not value the project, receiving a utility of zero. The citizens who value the project comprise a fraction γ of the population. All citizens have an income of y and the project costs c to implement. Assume that $y > \frac{c}{N}$, each citizen has an endowment sufficient to pay their per capita cost.

3.1 Private Provision

Before proceeding to public provision, observe that we can motivate public provision of the project as fixing a classic market failure. Suppose that the project is to be funded through private subscriptions where each citizen contributes s_i $(i = 1, ..., N)$ to its cost. If $\sum_{i=1}^{N} s_i \geq c$, then the project goes ahead and each citizen has any surplus returned to them on an equal sharing basis, i.e. they get $\frac{1}{N} \left(\sum_{i=1}^{N} s_i - c \right)$. If $\sum_{i=1}^{N} s_i < c$, then the project does not go through.

Suppose that we look for a Nash equilibrium in contribution levels. Then, our first observation is that there is no equilibrium in which any citizen who does not like the project makes a positive contribution. However, there are a variety of Nash equilibria where those who value it make a contribution. In each of these, all of the contributors must be pivotal so that the value of the contributions just adds up to c.

As long as $b < c$, then there is always a Nash equilibrium where $s_i = 0$ for all citizens. There may also exist a Nash equilibrium where $s_i = \frac{c}{N\gamma}$ if $N\gamma b > c$. This Pareto dominates the zero provision equilibrium in

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[7]This is a simplification as such tax systems are not seen in practice. However, the main points that are illustrated using the example do not hinge on this. It is key that there is no optimal lump-sum taxation. (See below for more on this.)

this instance and hence failure to achieve it leads to a classic "market" failure.

To motivate government intervention, therefore we will focus on the case where there is zero private provision. This discrete case is arguably artificial given that an efficient equilibrium exists. It rests here on a coordination failure due to the free-rider problem rather than the free-rider problem per se. However, inefficiency in private provision of public goods is generic. Hence, it is reasonable to overlook this issue here and the gain from the simplicity of the example more than outweighs this (slightly) artificial feature.

3.2   Government Provision

Suppose now that government finances the project and uses a head tax. To create a social welfare calculus, we adopt a Utilitarian perspective which is identical to the social surplus criterion in this context. In this case, the Samuelson rule applies to optimal public provision.

Figure 3 gives the payoffs to all of the parties in this instance.

	Citizens who value the project	Citizens who do not value the project	Social Welfare
$e = 0$	0	0	0
$e = 1$	$b - \frac{c}{N}$	$-\frac{c}{N}$	$\gamma N b - c$

Figure 3: Citizens' Payoffs and Social Welfare Under Government Provision

Observe that $e = 0$ and $e = 1$ are both Pareto efficient policy choices in this setting. This is because we have supposed that the government has to tax *all* citizens. Thus those who do not value the project are worse off under government provision. This implies that a system of political resource allocation that costlessly decides whether to have the project go ahead or not cannot constitute a government failure using the Pareto criterion.

Using our posited social welfare criterion, the project is worthwhile if the sum of benefits to all citizens exceeds the resource cost which boils down to:
$$N\gamma b \geq c.$$

If this condition holds, then *any* political mechanism in which the project fails to go ahead constitutes a government failure. (The converse would be true if we assumed that $N\gamma b < c$.)

Turning now to Wicksell's unanimity test, observe that this always fails if $e = 0$. This is because the group who does not favor the project have a payoff of $-c/N$ as they do not value the project. Hence any model

of political resource allocation in which the project goes ahead would generate a government failure. However, if the government could levy a benefit tax in the amount $c/N\gamma$ on all those who value the project, then going ahead with the project would indeed generate a realized Pareto improvement if $N\gamma b > c$. In fact this achieves the same payoff as with the "good" Nash equilibrium in this case. Except for where we make specific mention, we assume that $N\gamma b > c$ for the remainder of this.

The simple example makes clear why the Wicksellian model is likely to lead to the most conservative criterion for government intervention when the benefits of public intervention are unevenly distributed among the citizens. Unless benefit taxation can be used to fund public projects, then the case for government intervention will be extremely limited. In contrast, Pareto efficiency does not have any bite in this situation whereas social surplus allows trade-offs between the payoffs of gainers and losers.

The example also illustrates why the set of instruments available to government matters for a government failure. If we had assumed that lump-sum taxation were feasible for government, then the Wicksellian criterion and social surplus could always be fulfilled together in this model by suitable use of such transfers. Moreover, there would be a unique Pareto optimal policy which coincided with the surplus maximizing outcome. Thus, interesting conflicts between competing notions of government failure require us to work with a world where there are restrictions on policy instruments.[8]

This example provides a useful building block that we will now use to study public resource allocation and the reasons for government failure. While simple and stylized, it does embody many of the ideas that make the study of government intervention in political economy settings interesting. In particular, there are gainers and losers from government intervention with limited policy instruments for compensating losers.

4 Sources of Government Failure

This section discusses three aspects of government failure using the example above to illustrate their implications. We begin by discussing government failures that arise whether or not a democratic political process is used to make policy decisions. These problems are due to ignorance, the use of private influence and the quality of leadership.

In each case, we begin by supposing that there is a leader in office who is charged with deciding whether or not to set $e = 1$. He/she is

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[8]The uniqueness of the Pareto optimal outcome with lump-sum transfers is also an artifact of the assumption of transferable utility.

assumed to have their own preference over the project outcome. We do not model the process of leadership selection. We then study how this policy authority will be exercised and its welfare consequences.

4.1 Ignorance

Governments who intervene in the economy typically lack the kind of omniscience that simplistic models of the policy process invoke. This was the basis of Hayek's critique of state planning that we discussed in section 5 of Chapter 1. However, it runs through the modern welfare economic literature based on mechanism design. At some level, it is hardly deep or surprising that some forms of ignorance can lead to policy mistakes being made, at least when compared to the omniscient outcome. In our example, a government that was ignorant of b or c would be unlikely to make the correct decision all of the time over whether to go ahead with the project. This would be true regardless of the criterion being used to evaluate the quality of public decision making. However, it is equally unclear, a priori, whether ignorance leads to a systematic bias in policy decisions towards too much or too little government intervention.

Ignorance can clearly lead to a Pareto inefficient policy, at least when compared to the case of full information. It can also lead to social decisions that fail specific welfare criteria and to situations where policies are implemented that do not Pareto dominate the status quo.

While ignorance is undoubtedly a pervasive feature of the policy landscape, the most interesting issues concern situations where the quantity of information is endogenous and when different individuals are differentially informed about policy. In these cases, the question is whether particular decision making processes are better at eliciting and managing information. In general the quality of policy outcomes will fall short of what happens with perfect knowledge – the issue is whether all information is incorporated in making social decisions. However, the relevant criterion is now *second-best*, i.e. information constrained efficiency.

One key difference between democratic and non-democratic systems of government lies in the way in which information is collected and disseminated in the policy process.[9] This could mean democratic systems of government less prone to government failure if it leads to policies that are more reflective of common underlying information about policy needs. Suppose, for example, that the government is uncertain about the fraction of individuals in the population who value the project (the parameter γ in our example). Then, direct voting over policy may be a good way of revealing common values when citizens are differentially informed.

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[9]These issues are explored in Feddersen and Pesendorfer (1997).

To look at these issues in more detail would require us to develop a specific model of information aggregation in the political process. This raises interesting and important issues. We will not, however, be addressing them to any extent in this book. However, clearly the form in which social decisions are made has a bearing on the way in which information can be incorporated in the policy process. Laffont (2000) provides many insights in political processes viewed from this perspective.[10]

The agency models discussed in chapters three and four take informational issues seriously. However, they focus on situations where the government retains an informational advantage about policy. In the current setting this might be because b or c is known to the government and not to the citizens. This does not, however, create a problem unless the policy maker also faces a conflict of interest – has an incentive to pick a policy outcome that does not suit voters. Hence, to make the model interesting, we will also need to assume that politicians are not always benevolent. One way of doing this is to suppose that they face external influence in choosing policy. It is to the issue of influence that we now turn.

4.2 Influence

Whether democratic or not, governments are subjective to influence from powerful organized groups. This will lead, in general, to policy benefits being skewed towards such groups. In this section, I discuss how this can be brought into the example above and discuss their implications for identifying government failures. I consider two models. The first is "pure" corruption whereby influence is purely redistributive. The second is costly "rent-seeking" where resources are used up in the policy process.

4.2.1 Corruption

We define pure corruption as a situation where a monetary payment – a bribe – is paid to the policy maker to influence the policy outcome. It is not particularly surprising that, in such circumstances, corruption can change the alignment of citizen and leader preferences. Whether this is for good or ill depends on the notion of government failure under scrutiny.

To be specific, suppose that the policy maker can earn a private monetary rent of $r > 0$ for setting $e = 1$ regardless of whether the

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[10]It is difficult to say a priori how problems of ignorance by government bear on government failures from either a distributional or Wicksellian point of view. This would depend heavily on the specifics of the situation.

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project is a good idea. We suppose that this payment r is a transfer made a subset of "organized" citizens. We will not model the transfer process explicitly. However, the general considerations of this section could be approached using the menu auction model due to Bernheim and Whinston (1986) which was first applied to political influence by Grossman and Helpman (1994). The basic idea in that approach is that government auctions off a policy to the highest bidder(s). Each of the bidders offers a menu which specifies a payment in exchange for a policy outcome. Here, for simplicity, we fix the size of the transfer made and the identity of those who make it.

Suppose that

$$r > c/N.$$

In this case, the policy maker will implement the project regardless of his personal preference for or against it since the transfer he receives exceeds any share of the taxes that he will have to pay. The policy outcome is, therefore, always $e = 1$.

The utility of the citizens depends on whether they finance the transfer. Suppose that a fraction of $\beta < \gamma$ of citizens who favour the project collectively finance this transfer on an equal per capita basis. Those who favor the project and share the cost of the transfer, therefore, get utility of

$$b - c/N - r/N\beta$$

while those in favor who do not pay receive:

$$b - c/N.$$

Citizens who do not favor the transfer receive a payoff of $-c/N$.

Assuming that $b - c/N - r/N\beta > 0$, corruption of the form modeled here cannot generate a Pareto inefficient policy outcome in this setting. The transfers made are individually rational so that both the citizens and the policy makers are better off than they would be in the absence of corruption. The effect is purely a movement around the Pareto frontier. In general, we should expect this for pure bribery – those who pay and receive the bribe ought to be better off and hence it is unlikely that this can be Pareto inferior.[11]

Since we have assumed that $\gamma N b > c$, corruption here actually increases social surplus relative to any policy which generates $e = 0$. Of course, things could go the other way. Had we assumed that $\gamma N b < c$,

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[11]This does depend, however, on the kinds of instruments that are available to compensate gainers and losers. Besley and Coate (2001) develops a model in which there are coordination failures between lobbyists that can result in a Pareto dominated policy outcome.

the opposite would have been true. The point is that there is no presumption that bribery raises or lowers social welfare in the abstract. However, in general corruption will reduce welfare when the benchmark is one where the government is purely benevolent. Thus, if our policy maker would have done the right thing in social welfare terms to begin with, then clearly bribery can only make things worse. On the other hand, in any model where there is already some potential imperfection in the resource allocation process to begin with, there is no a priori prediction about this. This "second best" theme is echoed in the analysis in chapter four.

In terms of the Wicksellian definition, corruption only strengthens the tendency towards government failure by making it more likely that the project goes ahead. However, there is no need for things to go in this direction in general if we allowed for bribery to be among the group who wants smaller government. There may, however, be a tendency towards those who favor specific projects being more organized. Nonetheless, if the government were inclined towards implementing the project and the transfers were from those citizens who are against it, then this could reduce the chances that a Wicksellian political failure occurs. However, those who bribing to prevent the project from going ahead, would be worse off than if the government were constitutionally prevented from implementing the project while the policy makers would be better off. Hence, the *possibility* of government intervention can generate a set of transfers that constitute a government failure! This is true even if no intervention takes place. This further motivates the Public Choice preoccupation with constitutional constraints – this being the only way to prevent this from happening.

Corruption here is only a label. Influence activities could equally well lead governments to do "good" as well as bad things. In cases where there are two sides to an issue, there will always be a group who feels that the policy process is stacked against them and will voice their concern about the way in which political influence is used.

Of course, there are good reasons to frown on corruption for other reasons than those emphasized here. First, we may not like *per se* the distributional effect of making transfers to politicians. It could also distort the allocation of talent if individuals enter public life to capture private benefits. Third, corruption could also induce a deadweight loss of its own if it is directed through inefficient means in order to keep it secret. Thus we could introduce a transactions cost on bribery whereby the citizens lose τr to deliver r to the policy maker where $\tau > 1$.

All of this notwithstanding, this analysis paints a somewhat more benign view of corruption than in a lot of other literature. That is not

to say that the general opprobrium that greets corruption is not correct. First when the policy maker is elected in a legitimate democratic process, then we might expect bribery to undermine the democratic process. Moreover, one suspects that many of the policy favors granted through the process of corruption have no distributional merit according to any reasonable social welfare function. There are also hard to model systemic costs whereby corruption undermines norms of good behavior and the legitimacy of the state.[12]

4.2.2   Costly Rent-Seeking

In our model of bribery, no resources were expended in influencing politicians' decisions. In this section, we allow policy makers to be subject to costly influence activities – which can be thought of as rent-seeking or lobbying. In reality individuals expend resources in order to secure political favors. To the extent that such activities involve hiring labour, people are drawn out of productive occupations.

The extensive literature on rent-seeking originating with Tullock (1967) and Krueger (1973) has studied how private actions influence policy. Following Tullock (1980), formal analysis has focused mostly on modelling competition among individuals or groups to obtain an indivisible policy favor, the aim being to characterize the aggregate expenditure on rent-seeking activities (see, for example, Baye, Kovenock and de Vries (1994) and the references therein). This fits very well the structure of the example that we are studying. It is frequently asserted that rent-seeking is a cause of government failure and hence it is important to see how it fits into our framework.

Suppose that citizen i can pay r_i to influence the policy maker either to go ahead with or desist from the project. We assume that r_i is a real resource cost, such as labour time, which cannot be appropriated by the policy maker. In fact, we assume that the policy maker gets no payoff from the influence (positive or negative). Suppose that each citizen commits resources r_{ia} (≥ 0) in favor of the project and r_{if} (≥ 0) against. Let total resources committed in favor of the project be $R_f \left(\sum_{i=1}^{N} r_{if} \right)$ and the total against be $R_a \left(\sum_{i=1}^{N} r_{ia} \right)$. Then assume that the probability that the project goes ahead is captured by the following simple function:

$$\frac{R_f}{R_f + R_a}$$

This kind of "contest" function is popular in the rent-seeking literature

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[12]See Tirole (1996) for a model of collective reputations with mutliple equilibria which he applies to the amount of corruption.

and will serve to make the main points of interest. We look for a Nash equilibrium in influence levels where all citizens have access to the influence technology and there is symmetric behavior within the two groups of citizens. It is easy to see that citizens who favor the project will not commit any resources lobbying against it and that the converse is true for those who oppose the project.

Consider the decision of citizen i who favors the project. His payoff if he contributes r_{if} is:

$$\frac{\left(\sum_{k=1}^{N} r_{kf}\right)}{\left(\sum_{k=1}^{N} r_{kf}\right) + R_a} \left(b - \frac{c}{N}\right) - r_{if}.$$

Citizen j who opposes the project has a payoff of:

$$-\frac{R_f}{R_f + \left(\sum_{k=1}^{N} r_{ka}\right)} \frac{c}{N} - r_{ja}.$$

We now solve for a Nash equilibrium where each citizen in favor and each against puts in the same effort level. Solving for the Nash equilibrium in the usual way, it is straightforward to see that the equilibrium probability that the project goes ahead is:

$$\left(1 - \frac{c}{Nb}\right).$$

The key magnitude here is c/bN – the ratio of the cost of construction per capita to the benefit to having the project for those who favor it. As the cost per capita becomes small (high N or low c), then the probability that the project is constructed goes to one. This is because only those who gain a benefit engage in influence activity – the cost of the project to those who are against is negligible.[13]

The total expenditure on "rent-seeking" at a Nash equilibrium is:

$$\frac{c}{N}\left(1 - \frac{c}{Nb}\right).$$

Using this, it is now straightforward to consider the welfare consequences of costly rent-seeking.

Evaluating the welfare consequences of costly rent-seeking requires considering two complications. First, the outcome needs to be evaluated both in terms of the policy that is chosen and the resources spent on

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[13]This is a feature of the project being a pure public good so that the cost of the project does not increase with the population size.

influencing the decision which impose a social cost. The second issue is whether ex ante or ex post evaluation of the outcome is appropriate. For example, if the ex post policy outcome is $e = 0$ then everyone who committed positive resources to influence is worse off than they would have been without the possibility of political influence. But from an ex ante point of view, engaging in influence activities is still individually rational. The ex ante view point therefore makes more sense.

The outcome with influence is ex post Pareto efficient. However, it can be Pareto dominated from an ex ante point of view by fixing the probability that the project is implemented at $q = \left(1 - \frac{c}{bN}\right)$. If citizens knew that this was fixed, they would not expend any resources on rent-seeking and would have the same probability distribution over the project outcome as in the Nash equilibrium with influence activities described above. In this sense, costly rent-seeking is always a source of government failure in the Pareto sense. However, to bring about the Pareto improvement would require having a policy technology in which the polity could commit to a (possibly random) policy allocation up front. Only by committing to this ex ante would influence activity be closed down.

Closing down costly rent seeking without using the same probability distribution over policy achieved in the Nash equilibrium of the influence game does not necessarily create a Pareto improvement. For example, an ex ante commitment of $e = 0$ is not Pareto superior to the Nash equilibrium with influence activity as the citizens in favor of the project going ahead are made worse off.

Turning now to ex ante total surplus (i.e. before the rent-seeking activity has been undertaken), we need to take into account the resources spent on influence. Aggregate (ex ante) surplus at the Nash equilibrium in influence is given by:

$$\left(1 - \frac{c}{bN}\right)\left(N\gamma b - c\frac{(N+1)}{N}\right). \tag{1}$$

The first term is the equilibrium probability that the project goes ahead and the second is the surplus that it generates. Whether the latter is positive or negative depends on comparing the total benefit $(N\gamma b)$ with the total project cost c and the per capita project cost c/N. Where c/N is small, it is clear that whether total surplus is positive or negative is not really affected by influence. However, the welfare economic calculus which compares $N\gamma b$ with c clearly neglects the costs of rent-seeking activity and requires a stronger criterion for the project to go ahead.

From a surplus maximization point of view, the outcome with costly influence activities could be better or worse than what would happen

without rent-seeking. If the outcome would be $e = 1$ with probability one without influence, then influence makes things worse – recall that we have assumed that $\gamma N b > c$. But if it were $e = 0$, the effect on social surplus is ambiguous.

All the same, (1) gives us a sense of how to compare market failure and government failure in the decision to go ahead with a public project from a surplus maximization perspective. Our "market failure" arose because we assumed that coordination failure lead to sub-optimal private provision of the public project. The additional influence costs now need to be weighed alongside the traditional welfare economic costs and benefits.[14]

From a Wicksellian point of view, there is also an ambiguity as to whether a government failure has occurred. This depends on what the policy outcome would have been without the influence activity. If this were $e = 0$, then allowing influence makes things worse in a Wicksellian sense as there is now a positive probability that the project goes ahead. However, if $e = 1$ were to be the outcome in the absence of influence, then permitting influence could improve the situation from a Wicksellian point of view by empowering those who disapprove of the project.

We used a special and highly stylized model of how influence works. An important area of recent concern is influence activity in the form of campaign finance. A recent literature (see, for example, Grossman and Helpman (1996)) has studied how influence in the form of campaign contributions can distort policy in a model of electoral competition.[15]

Coate (2004) develops a model where the process of political influence through campaign contributions is modeled explicitly. This boils down to something whose reduced form looks rather similar to rent-seeking models. He shows that, in some cases, the probability distribution over policy is not affected at all by campaign finance and hence that banning campaign finance will result in a Pareto improvement. This provides an excellent illustration of the general principle that we have discussed and one that may have practical relevance.

However, as we have emphasized, dismissing of all influence activities as government failures is not very convincing. It depends on assuming that there is up front commitment to the ex post policy outcome. This does not seem the kind of scenario that most crude analyses have in mind. Without this, there are distributional effects as well as losses in resources that need to be weighed up in any careful welfare analysis.

There may of course be intrinsic concerns about the exercise of non-democratic influence. However, with any approach that emphasizes

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[14]See Acemoglu and Verdier (2000) for a related analysis.

[15]See also Persson and Tabellini (2000) and Besley and Coate (2001).

outcomes rather than processes, the trade-offs revealed here seem likely to prevail. As we observe in the case of bribery, once it is recognized that the policy mechanism that will prevail in the absence of influence is also flawed in some or another, there is really no reason to believe that the exercise of political influence is damaging in a wholesale way from a welfare economic point of view. That does not mean that empirically many cases of influence are indeed not damaging. Whether influence activities are socially costly has to be assessed on a case by case basis and by bringing empirical evidence to bear. Sweeping claims are far from self-evident.

4.3   The Quality of Leadership

The models that we studied above attach no weight at all to the quality of the leaders that hold policy authority.[16] We now consider the possibility that the policy maker has an effect on policy. There are broadly two reasons why the type of the policy maker can matter. First, the quality of the policy could be embodied in policy makers. For example, some individuals can implement policies more cheaply or may even have more insight into what works. In this case, the only way to improve politics is to change the individuals who make policy. Second, some policy makers may be better at carrying out the citizens' wishes. Whether this actually happens depends on the kinds of incentives that can be offered to policy makers for good behavior – good incentives might yield good policy regardless of the policy maker's type. These issues will be discussed in greater detail in the models of chapters three and four. Here, we discuss – in a very simple way – how this can be a source of government failure.

Suppose that the policy maker in office is drawn from a pool of potential policy makers that are differentiated according to the cost of implementing the public project. Thus, we think of the task of policy formation depending on the human capital of the policy maker. Specifically, let $c_i \in \{c_L, c_H\}$ for i in the set of potential policy makers. Thus c_i is a measure of policy maker competence with cost type c_L being a competent policy maker. Suppose initially that

$$b > \frac{c_H}{N} > \frac{c_L}{N}.$$

This implies that any policy maker who in office will desire to implement the project as long as he values it personally. Moreover all citizens who value the project also prefer that the project be implemented.[17]

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[16]This theme is discussed in Besley (2005).

[17]By focusing on competence as a "common value", policy makers do not get

To think about government failure issues, the outcome has to include both a policy outcome (here whether e is zero or one) and a policy maker (type c_i) who implements that outcome. This generalized approach to think about policy making was suggested in Besley and Coate (1997) which used the citizen-candidate model of political competition to generate a policy outcome as well as a policy-maker's identity.

With any type of citizen in office, the outcome where $e = 1$ is itself Pareto efficient. However, if a type H citizen is in power, then all citizens (including the policy maker!) is worse off than if a type L were choosing policy. Even those who don't like having the project go forward would prefer that it was implemented by a citizen with cost type c_L.

Thus, having a type H citizen in office constitutes a government failure since a Pareto improvement can be generated by replacing that citizen with a type L. Thus, defining the outcome in terms of who is picked for office in addition to the policy outcome adds a further dimension to the set of possible government failures. This justifies a focus on issues on political selection in political economy models, i.e. worrying about who is selected to office. Clearly it would be in the interest of societies to generate systems of leadership selection that are sensitive to finding competent policy makers.

Turning to our other definitions of government failure, it is evident that having a type H policy maker in office may interfere with attaining a surplus maximizing policy outcome Moreover, if

$$\frac{c_H}{N} > \gamma b > \frac{c_L}{N}.$$

a type H policy maker might implement the project even though it reduces social surplus.

Allowing for heterogeneous policy makers can work for or against the creation of Wicksellian government failures. To see this, consider what happens if

$$\frac{c_H}{N} > b > \frac{c_L}{N}.$$

In this case, having a type H policy maker in office leads to the project (which was a government failure anyway) not being implemented. Type L policy makers in this world will tend to implement government projects which are harmful to citizens who have to pay for them without deriving any benefit. Thus, it is better to have incompetent policy makers who then decide that it is simply too costly to go ahead with them. This is a rather perverse logic – once government fails, it may be better to

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any benefit from their own incompetence. This differentiates competence and rent-seeking models of low quality leaders. In the latter, low quality leaders earn a rent from being in office. This makes it more difficult to create a Pareto improvement.

have more distortions. Again, it has to do with the nature of second best reasoning in these kinds of settings – the political system is already distorted, so adding a further distortion is not always welfare decreasing.

5 Sources of Political Failure

The issues that we discussed in the last section do not hinge on whether or not the government is democratic. In this section, we analyze two classic problems that arise in government in democratic settings. The first looks explicitly at the issue of when voting over policies and/or policy makers will result in a government failure. The second looks at decision making in legislatures and the problems of distributive politics. These are both areas where there has been extensive discussion of political failure. Thus a closer look at the basis of this merits some attention.

5.1 Voting

Voting is at the heart of democratic decision making and is the basis of political resource allocation in many instances. One important issue concerns whether voting is endemically linked to any form of political failure.

To explore this, suppose that the individual who has to make social decisions in this setting is chosen in an election and that there is a choice between two types of citizens – those in favor and those against the project.[18] In this case, voting is purely a method for aggregating competing views about policy. The conflict of interest is purely between the citizens who are for and against the project. It is reasonable to suppose that the outcome will be to pick a citizen to choose policy whose policy preference coincides with majority opinion – the median voter outcome in this context.

Formally, this yields the following policy decision rule:

$$e = 1 \text{ if } \gamma \geq 1/2 \text{ and } e = 0 \text{ otherwise.}$$

The outcome depends on which is the numerically largest group.

It is immediate from this that the *median voter outcome is always Pareto efficient.* However, there is some confusion about this point in some of the existing literature on political failure. For example, Bergstrom (1979) uses the Downsian model to analyze whether political competition will produce an efficient level of public goods. He shows that

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[18]This could be modeled by means of a simple citizen-candidate game along the lines laid out in Besley and Coate (1997). In this simple setting, this will yield the same outcome as allowing direct voting over the policy outcome.

strong restrictions are needed for the median voter's desired level of a public good to satisfy the Lindahl-Samuelson condition for the provision of a public good. The latter requires that the good be provided if and only $\gamma Nb > c$ Thus, the outcome with voting seems to coincide with the Lindahl Samuelson rule when $\gamma \geq 1/2$ implies $N\gamma b \geq c$ which clearly does not hold in general. Indeed if

$$\frac{b}{2} < \frac{c}{N}$$

then there is always a value of $\gamma \in (\frac{1}{2}, 1]$ which results in the project going ahead when the Lindahl-Samuelson rule rejects it.

But this disjunction between the Samuelson rule and the voting outcome is far from surprising. For the purposes of the voting analysis, we have fixed the tax system to be a uniform head tax. By contrast, the Lindahl-Samuelson rule *as an efficiency criterion* assumes that there are lump sum taxes and transfers, at least if the losers are to be compensated by the gainers. As we have seen from our example, holding the method of financing fixed, the majority voting outcome is trivially efficient.[19] These issues are bound to arise in models which work with restrictions on the policy space. But it is important to consider the welfare comparison holding the policy instruments fixed.

This discussion makes plain why the outcome achieved under majority voting and based on social surplus will almost certainly diverge in general. Voting cannot be used to register preference intensity. However, it is essential to most distribution criteria that the intensity of preferences for and against – as well as the numerical strength of these groups – count.

The outcome achieved under voting is a Wicksellian political failure if $\gamma \geq 1/2$ since the group that is against the project going ahead would be better off in the no-government status quo. This observation that Wicksellian justice is inconsistent with majority rule is a core observation in Buchanan and Tullock (1962)'s critique of democratic policy making.

The example makes clear that there can be no general presumption of efficiency or inefficiency from the median voter outcome (except in the Paretian sense). In fact the result on Pareto efficiency holds true whenever the political equilibrium picks a Condorcet winner. When it comes to distributional criteria and the Wicksellian ideal, then it is a fair to say that there is a good reason to think that voting will lead to political failure.

We now consider a different argument due to Fernandez and Rodrik (1991). They apply the argument to economic reforms in general.

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[19]This point was noted in an important article by Wittman (1989).

However, our public project could easily be thought of as a program of economic reform as building a single public project. Suppose that $\gamma < 1/2$, i.e. a minority of the population would gain b for sure from the project. However, unlike the baseline model, we suppose that the remaining $(1 - \gamma)$ of the population do not know whether they will receive b from the project. Specifically we suppose that, with probability π, they receive b if the project goes ahead and with probability $(1 - \pi)$ they receive nothing. Suppose also that:

$$\pi b < \frac{c}{N}$$

so from an ex ante point of view, those who are uncertain about whether they will gain are opposed to the project, i.e. would vote against it. Thus, with majority rule, $e = 0$ will be the policy outcome. We know, however, that if $(\gamma + (1 - \gamma)\pi) b > c/N$, then this is a political failure in terms of ex ante social surplus. That said, this insight is not substantively different from the basic case without uncertainty.

More interesting, is the observation by Fernandez and Rodrik (1991) that if

$$\gamma + (1 - \gamma)\pi > \frac{1}{2}$$

a majority would vote for the reform *ex post*, i.e. if the identity of the gainers and losers were already known. Thus individual-specific uncertainty is responsible for the fact that $e = 0$. [20]

Whether this kind of individual-specific uncertainty is good or bad from a welfare point of view is unclear. It has no bearing on whether policy choices are Pareto efficient. It will, however, tend to reduce the probability of a Wicksellian political failure and hence could be viewed as welfare enhancing in models that value greater inertia in the policy process.[21] In terms of social surplus, things could go either way. For example, if

$$(\gamma + (1 - \gamma)\pi) b < c/N,$$

then individual specific uncertainty can prevent projects that fail the surplus maximizing criterion being implemented even though they would be implemented under certainty.

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[20] Fernandez and Rodrik (1991) draw the conclusion that this will lead to *status quo* bias in reform. This point turns out not to be robust in their framework – see Ciccone (2004).

[21] Observe that if $\pi b > c/N$ and $(\gamma + (1 - \gamma)\pi) < 1/2$, then a project that would be rejected under majority with certainty would be implemented were there uncertainty about who gains and who loses. Thus, uncertainty need not be a device to minimize Wicksellian political failures. Note also that ex post a vote to abandon the project would be successful in this case. I am grateful to Sanjay Jain for discussion on this point.

Thus, while introducing uncertainty does yield some interesting insights, it does not give a new source of political failure in public decision making.

5.2 Log-rolling and Legislative Behavior

So far, we have discussed highly simplistic models of the policy process. However, in practice policy processes work with interactions among a group of politicians collectively charged with making policy decisions. One important example of this is policy making in legislatures. The question is how agreements are structured according to the rules of the legislature and how this affects policy outcomes.

The seminal work of Tullock (1959) and Buchanan and Tullock (1962) emphasized how log-rolling in legislatures could lead to policy distortions. Tullock (1959) contrasts two systems of social decision making – straight majority decision making (what he calls a referendum) and some kind of bargaining between subgroups of voters which he calls logrolling. He gives the following insightful account of the main ideas:

> "A township inhabited by one hundred farmers who have more or less similar farms is cut by a number of main roads maintained by the state. However, these roads are limited access roads, and the farmers are permitted to enter the primary network only at points where local roads intersect it. The local roads are built and maintained by the township. Maintenance is simple. Any farmer who wishes to have a specific road repaired puts up the issue to vote. If the repairing is approved, the cost is assessed to the farmers as part of the real property tax. The principal use of the local roads by the farmers is to get to and from the major state roads. Since these major roads cut through the district, generally there are only four or five farmers dependent on any particular bit of local road to reach the major road.
>
> Under these circumstances, the referendum system would result in no local roads being repaired as an overwhelming majority would vote against repairing any given road. The logrolling system, however, permits the roads to be kept in repair through bargains among voters." (page 573).

An instructive benchmark for legislative policy making is a Coasian view that supposes that a group of individuals will reach joint agreements which internalize any externalities between them due to differences in policy preferences. This kind of Coasian bargain will result in policies that are efficient for the legislatures and hence are Pareto efficient from

the point of view of the economy as a whole.[22]   Hence, the presumption will be that policies will be efficient. Even in this case, there is no reason to think that legislatures will satisfy Wicksell's concerns – there is plenty of scope for legislatures to pick policy outcomes which do not Pareto dominate the no-government status quo.

Whether efficient bargains can be generated in legislatures given the kinds of rules that obtain for reaching agreements is moot. Clearly it requires investigation by developing models of bargaining in legislatures and there are many important contributions that look at this. Here is not the place to discuss these models in general. However, it is useful to observe that these models can sometimes create sources of political failure in the sense of Pareto (in)efficiency.

One classic example of this is the well-known model due to Shepsle, Weingast and Johnsen (1981). They consider a legislature which allocates a number of public projects to various districts. They suppose that each project benefits one and only district. Each district is represented in a legislature by one elected representative. The notion they propose is that the legislature operates according to a "norm of universalism" in which each district gets a project provided that all the others do. But each district in deciding how far to fund a project will realize that it bears only a fraction of the cost – the remainder being born by residents of the other districts. The result is an inefficiently large number of projects being financed. The outcome can sometimes be Pareto dominated from the point of view of the members of the legislature – everyone could be made better off with a collective reduction in the levels of the public goods being funded. Thus, the outcome does constitute a political failure in the Paretian sense. However, this happens because the model simply excludes the possibility of Coasian bargains among the legislators without stating the reason. To tackle the problem of inefficiency would require developing some other rule of operation that can internalize policy externalities.

To explore this issue, we extend the model above in a very simple way. Suppose now that policy decisions are made in a legislature comprising representatives selected from geographic regions. The n districts that they represent are labeled $j = 1, ..., n$. Each district is of equal size containing m citizens so $m \times n = N$. A project can be undertaken in each district and is enjoyed solely by the residents of that district, i.e. there are no spillovers across districts. Thus the legislature can authorize the building of up to n projects (one for each district).

Let $e_j \in \{0, 1\}$ denote whether a project goes ahead in district j.

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[22]Since legislators are citizens, they will pick some kind of agreement that is at least as good as any other for the group of legislators.

We assume that there is common pool financing – the taxation levied on each citizen across the districts is equal to the total cost of projects that are financed divided equally by all citizens in the polity (regardless of residence). We also suppose (following Shepsle, Weingast, and Johnsen (1981)) that project allocation is governed by a rule in which the representative in each district can unilaterally decide whether to implement a project in its district as long as all other legislators enjoy that privilege.

For simplicity, we suppose that each representative maximizes the average utility of a district resident which is

$$e_j \gamma b - \frac{\sum_{k=1}^n e_k c}{N}.$$

Note that this assumes that each district comprises an equal fraction (γ) of citizens who are in favor of the project.

It is apparent that the representative in any district will wish to have a project located in his district provided that

$$N\gamma b > c.$$

In effect, he compares the benefits as if they accrued to the whole population with the cost – this is because the cost is shared with other districts. But, from a social surplus point of view, a project is desirable only if the surplus that it generates in the district that it is located in is positive, i.e., if $m\gamma b > c$.

Thus the legislative process that we have posited along with common pool financing will yield excessive publicly financed spending (according to the social surplus criterion) if

$$N\gamma b > c > m\gamma b.$$

The policy outcome is Pareto inefficient if

$$\frac{c}{\gamma N} < b < \frac{c}{m}.$$

 Then even the citizens in favor of the project would prefer not to have it. Hence, it corresponds to a political failure. The outcome can be Pareto dominated by a cooperative solution in the legislature, i.e. one where all projects are simultaneously agreed upon rather than delegating that decision to the representative within a district. This raises the issue of why the norm of universalism would never be seen in the first place. An efficient solution could also be found by using a tax system which tried to share the costs of project financing so that each district paid more taxes if it had a project located within it, moving away from common pool finance.

The outcome under the norm of universalism is a political failure according the to the Wicksellian criterion if $N\gamma b > c$. Again the tendency for political resource allocation is to authorize too many projects. Thus, the posited rules of legislative decision making lead to an outcome which can fail according to all three definitions of political failure.

Since legislatures that are asked to allocate resources across space are a central feature of democratic policy making, it is clear that political failures generated this way merit close attention. However, it is also apparent that the policy outcome depends on the details of legislative processes, a key issue being why Coasian bargains among legislators cannot be struck. While the above kind of analysis has been influential among economists, the fact that the norm of universalism is maintained is puzzling and it is important to give persuasive micro-foundations before using it. That said, those who have looked at legislative decision making in more detail confirm that this can be an important source of political failure.[23]

6 Dynamics

We now explore government failure in models where policy making takes place in more than one time period. This is important since it highlights the role of commitment issues and re-election concerns in shaping policy. We will develop an example with two time periods. The main issues arise because there are linkages between decisions made in period one and period two. We identify three sources of linkages that are potentially important.

1. **Investment linkages:** This refers to cases where private investment decisions are affected by future economic policies. The classic time-consistency problem in government policy first identified by Kydland and Prescott (1977) falls into this category.

2. **Political linkages:** If policy choices in period one affect the type of policy maker who is in office in period two, then period one policies are tied to those that are undertaken in period two.

3. **Policy linkages:** Policies that are undertaken in period one affect the policy choices that incumbents make in period two.

With either political or policy linkages, period one policy choices acquire a *strategic* element if policy makers are forward looking.

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[23] See Battaglini and Coate (2005) for an overview and development of a dynamic model of legislative bargaining applied to an economic policy model.

6.1 Investment Linkages

Suppose now that there are two time periods labeled $t \in \{1, 2\}$. A project can be implemented in each period and the policy decision in period t is denoted by $e_t \in \{0, 1\}$. As above, the cost of the project is c in each period and is financed equally by all N citizens. Citizens receive some period one payoff from the project denoted by $b_i(e_1)$. But we allow citizens to make private investment decisions denoted by $x_i \in \{0, 1\}$ for citizen i which costs κx_i. The payoff to citizen i from the period two project is denoted by $B_i(x_i, e_1, e_2)$ i.e., it depends on their investment decision in period one and the actions of government in both time periods.

We consider two cases:

1. Commitment: The government chooses (e_1, e_2) and then citizens choose whether or not to invest.

2. No commitment: The government first chooses e_1, then citizens investment. The government then chooses e_2.

We study each in turn.

6.1.1 Commitment

In this case, we will use $*$ to denote the decisions made by government and citizens. Let $\{e_1, e_2\}$ be a fixed pair of government policies. Then the optimal investment decisions by the citizens are described by:

$$x_i^*(e_1, e_2) = \arg \max_{x_i \in \{0,1\}} \{B_i(x_i, e_1, e_2) - \kappa x_i\}. \tag{2}$$

Suppose that the government is benevolent, caring about social surplus. Then:

$$\{e_1^*, e_2^*\} = \arg \max_{e_t \in \{0,1\}} \left\{ \sum_i (b_i(e_1) + B_i(x_i^*(e_1, e_2), e_1, e_2) - \kappa x_i^*(e_1, e_2)) - c(e_1 + e_2) \right\}.$$

We make two assumptions:

Assumption 1:

$$(B_i(1, e_1, 1) - B_i(0, e_1, 0) - \kappa) - \frac{c}{N} > 0$$

for all i and for all $e_1 \in \{0, 1\}$.

This says that any situation in which government chooses $e_2 = 1$ and citizen i chooses $x_i = 1$ for all i, Pareto dominates an outcome where $e_2 = 0$ and $x_i = 0$ for all i.

Assumption 2:

$$B_i (1, e_1, 1) - B_i (0, e_1, 1) > \kappa > B_i (1, e_1, 0) - B_i (0, e_1, 0)$$

for all i and for all $e_1 \in \{0, 1\}$.

This says that only if citizens predict that the government will choose $e_2 = 1$, then it is optimal for them to invest in period one, i.e. set $x_i = 1$. In other words, the marginal return to private investment is increased by the period two investment project. Together Assumptions 1 and 2 imply that it is surplus maximizing (and hence Pareto efficient) to have $e_2^* = 1$.

Assuming that the period two policy is optimal, then the socially optimal period one policy will be $e_1^* = 1$ if and only if:

$$\sum_i (b_i (1) + B_i (1, 1, 1)) - c > \sum_i (b_i (0) + B_i (1, 0, 1))$$

which simply compares the cost of the project with the benefit.

This provides a benchmark for studying the case where the government cannot commit up front.

6.1.2   No Commitment

Ever since the classic analysis of Kydland and Prescott (1977), it has been known that government's inability to commit to a policy ahead of time can reduce welfare. We now study this in our framework. We will use a "hat" (^) above a variable to denote the equilibrium outcome in this case.

In this case, we work backwards beginning with the government's second period decision. The government will take $(x_1, ..., x_N, e_1)$ as given. Its optimal time-consistent policy will satisfy:

$$\hat{e}_2 (x_1, ..., x_N, e_1) = \arg \max_{e_2 \in \{0,1\}} \left\{ \sum_i B_i (x_i, e_1, e_2) - ce_2 \right\}.$$

We next consider the investment decision by the citizens. They take the period one policy choice and form (rational) expectations about government policy in period two. Thus:

$$\hat{x}_i(e_1) = \arg \max_{x \in \{0,1\}} \{ B^i(x, e_1, \hat{e}_2 (x_1, ..., x, ..., x_N, e_1)) - \kappa x - \hat{e}_2 (x_1, ..., x, ..., x_N, e_1) \frac{c}{N} \}.$$

The fact that the period two policy outcome depends on the full vector of period one investment decisions implies that private investment decisions are now interdependent. We thus look for a Nash equilibrium in private investment decisions.

Assumption 3:

$$\sum_i \left[B_i \left(x_i, e_1, 1 \right) - B_i \left(x_i, e_1, 0 \right) \right] - c < 0$$

for all $e_1 \in \{0, 1\}$ and all x_i for $i = 1, ..., N$.

Then, if every citizen invests in period one, the government chooses $\hat{e}_2 \left(1, ..., 1, e_1 \right) = 0$, i.e., not to implement the project in period two.

This implies that the time-consistent policy without commitment, has $x_i = 0$ for all $i \in \{1, ..., N\}$ and $\hat{e}_2 = 0$. The period one policy will be $\hat{e}_1 = 1$ if and only if:

$$\sum_i \left(b_i \left(1 \right) + B_i \left(0, 1, 0 \right) \right) - c > \sum_i \left(b_i \left(0 \right) + B_i \left(0, 0, 0 \right) \right).$$

Assumption 1 implies that the policy achieved by a benevolent government is Pareto dominated. Thus, the failure to commit to $e_2 = 1$, constitutes a government failure in the Pareto sense.

This policy cum investment outcome will also constitute a failure according to any kind social welfare function that respects the Pareto criterion, including surplus maximization. Hence, it is also a distributional failure.

It is less clear whether there is a government failure in Wicksell's sense. If

$$b_i \left(1 \right) + B_i \left(0, 1, 0 \right) - c/N < b_i \left(0 \right) + B_i \left(0, 0, 0 \right)$$

for some i, there will be a Wicksellian government failure if $\hat{e}_1 = 1$ since some citizens are made worse off by implementing the project. The fact that $\hat{e}_2 = 0$ means that a Wicksellian failure may be avoided in period two compared to the full commitment outcome as long as some citizens prefer the period two project not to be implemented.

This simple example illustrates the classic time-consistency problem as it afflicts a benevolent government. It arises here because the government's policy preference changes once the private investment decisions have been made. However, this example of government failure has nothing to do with politics. There are no elections in the story – a benevolent

dictator without commitment power would generate this kind of problem. However, the time consistency problem is due to an intertemporal linkage created from the fact that there is a durable private decision by the citizens – in this case the private investment decision – that affects government policy incentives. We now show how intertemporal political and policy linkages can induce government failures. Note also that the time-consistency problem as generated here is not due to inefficiencies in period one policy making. This will contrast with those that we demonstrate in the next section.

6.2   Political and Policy Linkages

As we have seen, commitment problems arise even when the identity of the (benevolent) policy maker remains fixed over time. But the essence of political economy models is the selection and turnover of policy makers through a political process. In this section, we explore the consequences of this for policy choice. To focus on the issue of political and policy linkages, we will now abstract from private investment decisions and hence suppress x_i from the analysis.

A key additional consideration in this section is to describe the process of survival and turnover which determines the probability that the policy maker remains in office as a function of his period one policy choice. Here, we will develop a "black box" approach to the process of turnover among policy makers. However, it could be given a micro-foundation. For example, Besley and Coate (1998) develop an analysis of turnover based on a citizen-candidate model of politics. The political agency models that we study in chapters three and four can also provide a foundation for this. In these models, as we shall see, the key idea is that turnover reflects *political accountability*. They make sense of this using a model of imperfect information where either the policy outcome or the politician's type is uncertain ex ante. Considerations of political turnover could equally well be studied in a model of non-democratic politics as in Acemoglu and Robinson (2002).

We now suppose that there are two groups of citizens in the population – those who have a high level of demand for government projects and those who have low demand. We use $\tau \in \{L, H\}$ to denote the type of each citizen. Let $\gamma_t (\in [0, 1])$ be the proportion of citizens who are of type H in period t. We allow for the possibility of turnover in the electorate which leads γ to change over time. There could also be some uncertainty about the future proportions of citizens of each type.

Let $b_\tau (0) = 0$ and

$$b_\tau (1) = \begin{cases} \bar{b} \text{ if } \tau = H \\ \underline{b} \text{ if } \tau = L. \end{cases}$$

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be the period one payoff from implementing the period one government project with $\bar{b} > \underline{b}$.[24] The period two project payoff depends on whether the project was undertaken in period one. Let $B_i(e_1, e_2)$ be the period two valuation of a type i. We assume that $B_i(e_1, 0) = 0$ and:

$$B_\tau(e_1, 1) = \begin{cases} \bar{B}(e_1) \text{ if } \tau = H \\ \underline{B}(e_1) \text{ if } \tau = L. \end{cases}$$

where $\bar{B}(e_1) > \underline{B}(e_1)$.

It is evident from this that we have a *policy linkage* between the two time periods since the demand for the period two project could be affected by whether it is implemented in period one. As above, the cost of the project is c in each period and is divided equally across all N citizens.

We suppose that a citizen holds office in each period. This means that he must either be of type L or type H. Hence we consider only policy choices that are optimal for some kind of citizen as a policy maker. In addition to policy concerns, a policy may also care about the rent from holding office which we denote by $E \geq 0$. We suppose that a policy maker of a particular exogenously given type is in office in period one.

There are two aspects of political turnover to consider. First, there are concerns that the policy maker has about his own survival in office. This is particular important in the presence of rents. Second, there is the issue of what type of policy maker will be in office in future. So a policy maker could lose office, but be guaranteed that he would be succeeded by someone with the same policy preferences. Hence, only the personal rent to holding office is lost.

Let $\sigma_t \in \{L, H\}$ denote the type of the policy maker in office in period t. We capture these two aspects of turnover as follows. Let $\pi(\sigma_1, e_1) \in [0, 1]$ denote the probability that an incumbent of type σ_1 is re-elected as policy maker for period two as a function of the period one project that he implements. There are three possibilities. The project is *politically neutral* if $\pi(\sigma_1, 1) = \pi(\sigma_1, 0)$, *politically advantageous* if $\pi(\sigma_1, 1) > \pi(\sigma_1, 0)$, and *politically damaging* if $\pi(\sigma_1, 1) < \pi(\sigma_1, 0)$. Let $q \in [0, 1]$ be the probability that the second period incumbent is of type L. There are a number of ways to motivate $q \neq 1$. For example, we could suppose that γ is a random variable due to changes in the electorate or turnout so the median type could be of type H or L. We let $\hat{e}_t$ denote the equilibrium project choice in each period.

The timing of the model is as follows. In period one there is an (exogenously given) incumbent policy maker of type σ_1 in office who

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[24]We have not imposed the assumption that $\underline{b} = 0$ since we want it to be possible for *every* citizen to favor implementing the project in period one.

chooses e_1. Nature then determines whether the incumbent is replaced according to $\pi(\sigma_1, e_1)$. The latter could represent either the outcome of an election or a power struggle in an autocratic system. If the incumbent is replaced, then nature determines the type of the new incumbent. The period two incumbent then chooses e_2. We study the outcome working backwards beginning with the period two policy choice.

It is straightforward to see that the period two policy choice depends solely on the type of the period two policy maker, i.e.

$$\hat{e}_2(\sigma_2, e_1) = \begin{cases} 1 \text{ if } B_{\sigma_2}(e_1, 1) \geq c/N \\ 0 \qquad \text{otherwise.} \end{cases}$$

Now let

$$W^\tau(e_1, \sigma_2) = \left\{ \hat{e}_2(\sigma_2, e_1) \left[B_\tau(e_1, \hat{e}_2(\sigma_2, e_1)) - \frac{c}{N} \right] \right\}, \quad \tau \in \{L, H\}$$

be the period two utility of citizen of type τ as a function of the period one policy choice and type of the period two policy maker.

Now consider the period one policy maker's choice. This has a forward looking element. The policy maker's preference is:

$$e_1 \left(b_{\sigma_1}(e_1) - \frac{c}{N} \right) + \pi(\sigma_1, e_1)(E + W^{\sigma_1}(e_1, \sigma_1)) + (1 - \pi(\sigma_1, e_1)) \bar{W}^{\sigma_1}(e_1) \tag{3}$$

where:

$$\bar{W}^\tau(e_1, q) = q W^\tau(e_1, L) + (1 - q) W^\tau(e_1, H)$$

is his expected period two payoff if he is not re-elected. This reflects the uncertainty about the period policy maker's type.

The optimal period one policy for an incumbent of type σ_1 is therefore:

$$\hat{e}_1(\sigma_1) = \arg \max_{e_1 \in \{0,1\}} \left\{ e_1 \left(b_{\sigma_1}(e_1) - \frac{c}{N} \right) \right.$$
$$\left. + \pi(\sigma_1, e_1)(E + W^{\sigma_1}(e_1, \sigma_1)) + (1 - \pi(\sigma_1, e_1)) \bar{W}^{\sigma_1}(e_1, q) \right\}$$

This illustrates the strategic aspects of policy making that arise in a dynamic political economy setting. This equation embodies the three main considerations that shape policy making in dynamic political settings:

- **Short term policy considerations** – these are represented by $\left(b_{\sigma_1}(e_1) - \frac{c}{N} \right)$. This depends on whether the policy could be worthwhile or otherwise in terms of its current costs and benefits.

- **Long-term policy considerations** – these are reflected in the dependence of $W^{\sigma_1}(e_1, \sigma_1)$ and $\bar{W}^{\sigma_1}(e_1)$ on e_1. This term arises since the the period one policy may affect payoffs from *future* policies. This is the source of policy linkages.

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- **Survival considerations** – This is represented by the way in which $\pi(\sigma_1, e)$ depends on e_1 and affects the probability that the incumbent will survive as a function of his period one policy choice.[25] This is the source of political linkages.

We now study the implications of policy choices that maximize (3). We will illustrate both policy and political linkages. Before doing that, however, we develop a benchmark result based on Besley and Coate (1998). Suppose that

- (i) the policy is politically neutral, i.e. $\pi(\sigma_1, 0) = \pi(\sigma_1, 1)$ for $\sigma_1 \in \{L, H\}$

- (ii) the payoff from the period two project choice is unaffected by the period one project choice, i.e. $B_\tau(0, e_1) = B_\tau(1, e_1)$ for $\tau \in \{L, H\}$.

Then the policy choices (e_1, e_2) will be Pareto efficient.

To see why this is true, observe that if conditions (i) and (ii) hold, then the expected period two payoff of the current policy maker (and the citizens in the polity) do not depend on e_1 at all. Thus, the period one policy choice is determined solely by whether $b_{\sigma_1}(e_1)$ is bigger or smaller than c/N. But then the model effectively reduces to a one period model with all intertemporal links having been severed.

Even though the outcome in this case is guaranteed to be Pareto efficient, there is no reason to expect it to maximize social surplus or to avoid government failures of a Wicksellian variety. The reasoning here follows exactly that in the static model developed above.

We now consider what happens when either conditions (i) or (ii) above fail. The first is the case of a political linkage and the second that of a policy linkage. We now show that in each case, we can construct an example where the policy choice is Pareto inefficient and hence a government failure in this sense.

6.2.1 Political Linkages

Our first example illustrates a case where the desire of an incumbent to survive in office leads to a Pareto inefficient policy choice. Suppose that all citizens wish to implement the first period project, i.e., $\underline{b} > c/N$. The citizens disagree, however, about period two policy. Specifically, we assume that

$$\underline{B}(0) > \frac{c}{N} > \underline{B}(1)$$

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[25] In principle, we could also make q depend on e_1.

and
$$\bar{B}(1) \geq \bar{B}(0) > \frac{c}{N}.$$

The first of these says that the low types want the project in period two only if it was *not* implemented in period one. The second says that the high valuation types want the project to be implemented regardless of whether the first period project is implemented.

Given these assumptions on preferences, any situation where the first period project is not implemented constitutes a government failure in the Pareto sense – all citizens are better off for *any* fixed policy decision in period two. We are interested, therefore, in studying cases where this does not happen. The starkest case of this is where it is politically costly to set $e_1 = 1$. Suppose that:

$$\pi(\sigma_1, 1) = 0 < \pi(\sigma_1, 0) = 1.$$

This says that the period one incumbent will survive in office only if he/she fails to implement the period one project.[26]

It is clear that for large enough E, the period project will not be implemented, i.e. $\hat{e}(\sigma_1) = 0$ for $\sigma_1 \in \{L, H\}$. This makes sense. The incumbent has desire to hold on to office since the rents are large, but he will lose office if he chooses to implement it. However, a government failure can also occur if $E = 0$. To see this, let $\underline{b} - c/N$ become small so that the direct benefits of the project are small to a type L. Then if $\sigma_1 = L$, the incumbent will suffer a utility loss of $\underline{B}(1) - c/N$ if a type H policy maker holds office in period two as the latter will set $e_2 = 1$. Thus as long as q (the probability of a type L policy maker) is closer enough to zero, it will be optimal for a type L policy maker to set $e_1 = 0$. In this case, it is the decision rent from controlling the policy process rather than the direct rent from holding office which induces a government failure.

This example illustrates how the desire to survive in office affects the efficiency of policy choice and leads to a Pareto inefficient outcome. This arguments extends easily and unsurprisingly to other social objectives such as surplus maximization. It is more subtle in Wicksellian terms. From a Wicksellian point of view, the right outcome is $e_1 = 1$ and $e_2 = 0$. By failing to implement the project in period one, the type L incumbent prevents a period two government failure.

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[26] A micro-foundation for this could be generated in an agency model of the type studied in the next chapter. This approach was used in the key contribution of Coate and Morris (1995). Besley and Coate (1998) also develops a model which is consistent with this kind of outcome using a citizen-candidate approach.

Even though the welfare consideration is not always transparent, the idea that political survival can play an important role in affecting economic policy choice has been widely studied.[27] For example, Aghion and Bolton (1990) and Milesi-Ferretti and Spolaore (1994) develop models in which strategic policy choice can also lead to changes in who is elected. For example an incumbent may realize that if he runs a deficit then this can make election of the challenger less attractive. These ideas are applied to privatization policy in Biais and Perrotti (2002). Many governments have encouraged privatizations because they create a class of share-holders who then show favors towards right wing governments. This will encourage governments to underprice privatizations to create a class of stakeholders. Besley and Coate (1998) pulls these ideas together and show that these strategic effects can be sources of real inefficiencies.

A variety of papers look at how political incentives for re-election shape the kind of public projects that are chosen. Glazer (1989) discusses how this can lead to projects which have long-run effects being preferred to those that payoff only in the short run since these have effects on political equilibria. Coate and Morris (1995) use an agency model of the kind discussed in chapters 3 and 4. They show how the fact that policy choice affects re-election chances leads to inefficient policies being chosen. This is driven by the desire of politicians to capture rents by being re-elected. Robinson and Torvik (2005) discuss how public project choices can provide a commitment device since only certain kinds of politicians will continue with these projects in future. Jain and Mukand (2003) extend the model of Fernandez and Rodrik (1991) to allow for an explicit dynamic political economy model where the government can compensate the losers in period two for the consequences of a project choice in period one. They also find that whether the leader survives is important to understanding period one policy choice.

These insights have also been useful in understanding how politics affects growth and development. There are now a number of models that develop this theme using the insight that government efforts to promote growth can have adverse political consequences for incumbents. For example, Acemoglu and Robinson (2002) build a theory of under-development based on the possibility that governments are unwilling to invest in productive things because they affect the politician's tenure. In similar vein, Krusell and Rios-Rull (1996) develop a model where politicians can affect the future political equilibrium via today's policy choices leading to stagnation.

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[27]Besley and Coate (1998) studies the implications of political equilibrium in a dynamic model using the Pareto criterion.

6.2.2 Policy Linkages

We turn now to policy linkages. To focus on these, suppose that the period one policy is politically neutral, i.e., $\pi(\sigma_1, 1) = \pi(\sigma_1, 0) = 0$. This could describe a case where all politicians are term-limited so that considerations of rents (E) cannot distort their policy choices. Hence, political rents play no role in this example.

We suppose that type of policy maker who controls period two policy is uncertain with an equal chance of any kind of period two policy maker $(q = \frac{1}{2})$.[28] As above, we assume that there is universal demand for the period one project, i.e. $\underline{b} > c/N$. However, we now suppose that type H citizen demand the project in period two only if the period one project was implemented, i.e.,

$$\bar{B}(1) > \frac{c}{N} > \bar{B}(0).$$

However, type L citizens never desire the project in period two:

$$\frac{c}{N} > \underline{B}(0) = \underline{B}(1).$$

As above, this implies that any situation in which the period one project is not implemented is Pareto inferior.

Now consider what happens if the first period policy maker is of type L. He/she will be replaced by a type H with probability $\frac{1}{2}$. The latter will implement the project only if $e_1 = 1$. Thus if:

$$\underline{b} - \frac{c}{N} + \frac{1}{2}\left[\underline{B}(1) - \frac{c}{N}\right] < 0$$

then a type L incumbent will set $e_1 = 0$.

The logic here differs from the case of political linkages – the period one project choice has no effect on whether the incumbent survives. The effect is driven from the fact that:

$$1 = \hat{e}_2(H, 1) > \hat{e}_2(H, 0) = 0.$$

Again, it is clear that this kind of logic can underpin government failures using a wide set of welfare functions. The Wicksellian implications are similar to the example with political linkages. The period one policy maker of type L prevents a period two government failure by setting $e_1 = 1$. Hence, this does not constitute a government failure in the Wicksellian sense.

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[28] This could easily be underpinned by a political model where the two groups are of similar size and the policy maker is elected from a contest between one representative from each group.

A number of papers in the literature explore policy linkages and their implications. For example, Tabellini and Alesina (1990) and Persson and Svensson (1989) all explore why political equilibria can lead to excessive fiscal deficits if debt is used strategically to influence policy outcomes beyond a politician's current term. They show that a larger deficit prevents the future incumbent from spending on his own preferred policies. This is more likely to happen if there is greater ideological conflict between the incumbent and his potential challenger.

6.3   Investment and Politics

To round off our discussions, we now consider the possibility that private investment decisions affect policy choices – an issue that we abstracted from in the last sub-section. However, we study this using a somewhat different policy example than that which has run through the rest of this chapter – one where investments increase private productivity and government policy is in the form of tax and transfer policy.

Suppose that the citizens in a polity are divided into three groups. A fraction γ_H of high income citizens earn y_H, a fraction of γ_L low income citizens earn income y_L $(< y_H)$ and a fraction γ_M of mobile citizens earn income y_L unless they make a private investment that costs κ in which case they earn y_H. We assume that $\kappa < (y_H - y_L)$ so that the investment is worthwhile. Let $x_i \in \{0, 1\}$ be the investment decision of the ith mobile citizen. We assume that the utility of each citizen depends solely on their consumption which equals their post-tax and transfer income.

The two period structure of the last section is maintained with these productivity enhancing investments being undertaken in period one and realized in period two. As above, we suppose that a policy maker is a citizen and hence corresponds to one of the three types of citizen that we have described. As a policy maker, we assume that the government can set the rate of a tax on income that we denote by $t \in [0, \bar{t}]$ where $\bar{t} < 1$. The latter could be due to the ability of citizens to retreat into some kind of informal (non-taxable) activity. We assume that any tax proceeds are distributed back to the citizens in lump-sum fashion with the transfer being denoted by T. Let μ_s be the mean income in the society in period $s \in \{1, 2\}$. Then the government budget constraint is:

$$T_s = t_s \mu_s.$$

The timing as follows. We begin with a period one policy maker in place. In period one, the incumbent sets (t_1, T_1). Then the mobile citizens choose whether or not to invest. The type of the period two politician is then determined in a manner to be described below. This policy maker then sets (t_2, T_2).

We will consider an explicitly democratic political process where the type of policy maker is determined according to majority rule. We assume that:

$$\gamma_M + \min\{\gamma_L, \gamma_H\} > \frac{1}{2} > \max\{\gamma_H, \gamma_L\}.$$

This says that neither the high or low income citizens are a majority. However, each becomes a majority if they combine with the mobile citizens.

As a benchmark, suppose that there is no government so that $t_s = T_s = 0$ for $s \in \{1, 2\}$. In this case, all the mobile citizens find it optimal to invest.

We now study what happens with voting. As above let $\{\sigma_1, \sigma_2\}$ be the type of citizen in office in each period. First consider period two policy making. It is easy to see that the optimal tax rate is:

$$t_2(\sigma_2, \mu_2) = \arg\max_{t \in [0, \bar{t}]} \{(1-t)y_{\sigma_2} + t\mu_2\}.$$

This implies that:

$$t_2(\sigma_2, \mu_2) = \begin{cases} \bar{t} \text{ if } y_{\sigma_2} < \mu_2 \\ 0 \text{ otherwise.} \end{cases}$$

A citizen with income y_H always prefers to set $t_2 = 0$ while a citizen of type y_L sets $t_2 = \bar{t}$.

It is now straightforward to see how policy in period two depends on period one investment decisions by mobile citizens. If all mobile citizens invest, then citizens with income of y_H are in the majority and hence $t_2 = 0$ while if all the mobile citizens choose not invest, then citizens with income level y_L are in a majority and the tax rate is $t_2 = \bar{t}$. This becomes interesting if:

$$(1 - \bar{t})(y_H - y_L) < \kappa,$$

since investment by mobile citizens then occurs only if these citizens anticipate that the other mobile citizens will also choose to invest. In other words the political system creates a strategic complementarity between the mobile citizens.

The political model now has multiple equilibria. In one equilibrium no mobile citizen invests so that the majority of citizens earn low income in period two and $t_2 = \bar{t}$. In the other, all mobile citizens invest in period one and there is no redistributive taxation in period 2 since a majority of citizens have high incomes, i.e., $t_2 = 0$. National income is different in each case with the income level being higher when taxes are low.

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To complete the model, we need only to determine the first period policy choice. However, this does not have any baring on whether the mobile citizens choose to invest.[29] Hence:

$$t_1\left(\sigma_1, \mu_1\right) = \arg\max_{t\in[0,\bar{t}]}\left\{\left(1-t\right)y_{\sigma_1} + t\mu_1\right\}.$$

It is the fact that period one policy does not affect private investment that differentiates this example from those above.

We now consider whether this example constitutes a government failure and in what sense. Since government policy in this case is purely redistributive, any $t_s > 0$ constitutes a government failure in Wicksell's sense. This could be achieved either by passing a constitutional restriction that $t_s = 0$ or providing some form of guarantee that a high income citizen will always be in office. Social surplus will also be maximized in this example where redistributive taxation is zero in period two.

Turning now to Pareto efficiency. We will show that the outcome described may constitute a political failure. Consider the outcome where $t_2 = \bar{t}$ so that mobile citizens do not invest. Suppose that the tax rate is cut to:

$$\tilde{t} = \frac{\left(y_H - y_L\right) - \kappa}{\left(y_H - y_L\right)}.$$

This is the highest tax rate at which mobile citizens are willing to invest (they are indifferent between investing and not investing). We need to show that the low income citizens are better off at $\tilde{t}$ than at $\bar{t}$. This is true if:

$$\bar{t}\frac{\gamma_H}{\left(1 - \gamma_L\right)} < \left(y_H - y_L\right) - \kappa.$$

This requires that the gain from investing be large enough and that be sufficiently many mobile citizens. This implies that transfers to the low income groups are small when the mobile do not invest and increase substantially when they do. This shows that the example that we are studying here is a political failure.

This example is an instance of a general phenomenon whereby private decision making affects policy outcomes. This general class of policy distortions includes the example studied by Coate and Morris (1999) who emphasize the fact that policies can persist due to individuals making private investment decisions to benefit from them. The endogeniety of groups affecting political support is also at the heart of the mechanism in Acemoglu and Robinson (2001) sustaining inefficient transfer policies.[30]

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[29]This assumes that either κ is a purely non-financial (i.e. utility) cost or else that $\kappa < y_L$. Otherwise government redistributive policy could lead to an increase in investment.

[30]Krusell and Rios-Rull (1996) is also related although in their model current policy

7 Implications

It seems harsh to call something a failure unless it can be shown that there is something better. The theory of market failure provides a framework for shaping the case for government to improve what the market can achieve. Indeed, many of the textbook functions of government – to provide public goods, regulate externalities and regulate monopolies are rooted in the theory of market failure.

How to react to government failure is less clear-cut. One widespread view is that identifying government failures should primarily provide a basis for constitution design. This view is often identified with the public choice approach, especially the work on Buchanan.[31] The idea is that the rules of the political game are codified ex ante, possibly behind a veil of ignorance, and that political resource allocation is shaped by these rules. The rules take on normative significance in responding to the kinds of difficulties that might arise in the operation of politics.

Buchanan (1967) divides constitutions into two parts. One of them is a set of rules laid down for the conduct of the policy process. He refers to this as a *procedural constitution*. This might include designation of specific policy authority, separation of powers, the electoral system and rules government who may vote or hold political office. The other part of the constitution may refer to policies directly. Buchanan calls this a *fiscal constitution*. However, it is clear that the slightly broader term *policy constitution* might be more apt.

There are opportunities, particularly when new nations are founded, to specify the political architecture from the ground up. However, more commonly the focus is on more modest, piecemeal reforms. There are three main categories of democratic constitutional reform that are debated: Democratic Structure, Government Architecture and Policy Rules. We discuss the main elements of each in brief.

1. Democratic Structure: There are many facets of a constitution which shape the conduct of democratic politics. These include

   (a) Voting Rules: First, there are rules about who is eligible to vote and how they can register. The nineteenth and twentieth centuries saw a significant extension of the franchise, notably with women securing the right to vote. Second, there are the rules for aggregating votes and determining the

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(rather than just anticipated future policy) influences investment and hence future policy. Thus, it also has elements of the policy linkages studied in the previous section.

[31] See, for example, Frey (1983) and Mueller (1996) for development of these ideas.

spatial pattern of representation. There are countless alternatives which vary between a straight majoritarian system with single-member districts through to list systems with proportional representation.

(b) Electoral Conduct: Along with opening of the franchise came a decline in rules restricting who could hold public office. That said, most democratic systems still limit access to political office more than they limit the right to vote. Also important are rules about the conduct of campaigns which affect how elections are fought.

(c) Legislative Structure: There are many aspects of rules within a legislature that can affect how politics is conducted post-election. This category also includes the possibility of directly elected authority as in the case of a president. Also important is the choice between unicameral and bi-cameral systems.

(d) Direct democracy: How and whether there should remain a direct voice for citizens remains open to debate. Some countries, notably Switzerland, allow a significant role for citizens' initiatives while most others rely very little on this.

2. Government Architecture: This mainly includes the rules that determine who has policy authority and on what basis.

(a) Independent agencies: Even in democracies, there are may agencies that have direct policy authority. These include independent central banks to determine monetary policy which operate alongside democratic legislatures. The role of the judiciary is also important in many polities. In common law countries, in particular, the judiciary plays a key role in shaping many policies through establishing precedent. The judiciary in the form of constitutional courts may also have the authority to limit the power of elected representatives.

(b) Decentralization: Most countries have multi-tiered governments and the degree of policy authority delegated below the central government level is an important policy parameter. This has been an extremely active policy area of late and includes some non-democratic polities such as China.[32]

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[32]See, for example, Qian and Roland (1998).

(c) Structure of the Executive: The way in which government agencies are structured within government and how this is accountable to legislative authorities varies greatly across democratic systems. Parliamentary systems typically have ministers who are members of the legislature whereas some systems have appointed cabinet members.

3. Policy rules: There are also many legal rules that have a direct impact on policy outcomes. It is unclear, in some cases, how far these should be viewed as constitutional provisions of merely policies that are subject to change. Nonetheless, they clearly have great practical force. They include:

(a) Fiscal deficit regulations: Many countries use means to limit the ability of governments to run deficits. This is interesting in view of the large literature – which we referred to above – which looks at why deficit finance can be subject to political failure. We discuss this further in chapter four.

(b) Private property: Many countries have evolved systems for the protection of property which place limits on the power of government to tax and regulate its citizens.

(c) Civil liberties: Policy rules also have to function in the context of evolved rules for the protection of individual freedom. Policy choices that conflict with human rights provisions often require amendment to prevent inconsistencies between policies. Freedom of information provisions may also have a direct impact on the kinds of policies that can be implemented if their provisions are deemed to transcend those of particular policy provisions. These are areas where the role of courts is crucial.

This book will not be able to do justice to this rich array of constitutional issues. However, the welfare economic framework that we have developed here around the notion of government failure should be helpful for thinking about some of these issues. A general intellectual approach suggests itself.

- **Step 1:** Develop a theoretical and empirical model of the effect of a particular constitutional rule.[33]

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[33]See Besley and Case (2003), and Persson and Tabellini (2003) for progress in this area. Acemoglu (2005) discusses more broadly the idea of political equilibrium inducing preferences over institutions.

- **Step 2:** Use Step 1 to identify who gains and who loses.

- **Step 3:** Use Step 2 to inform a process of discussion/aggregation to make a social decisions.

The ideas of government failure that we have discussed are implicit in the step from 2 to 3 where our different ideas of government failure corresponded to ways of weighting gainers and losers.

This procedure is, of course, a highly idealized process and real debates about constitutional reform are messy and may appear to be influenced by idiosyncratic events rather than reasoned debate. Just as special interests may influence policy so they frequently try to influence constitutional reform and the idea of founding fathers reasoning behind a veil ignorance is far fetched. But this makes the influence of social scientists even more crucial. It is imperative to have a space for structured and scientific reasoning, however slight that impact may sometimes appear to be.

But modesty too is needed. Economists have a comparative advantage in discussing many policies – especially those that involve the commitment of public resources. However, our competence in the field of human rights and calculating the value of freedom is more limited.[34] The Wicksellian approach that we discussed above is the only approach to government failure which gives a direct role for such concerns. But in discussing policies such as abortion rights, the decision to go to war or the incarceration of terror suspects, we should acknowledge that our welfare economic framework is limited. But that still leaves a vast domain in which the ideas discussed here are relevant and one that may be at the heart of many constitutional reform discussions.

The subsequent chapters will discuss some of the constitutional choice issues raised above. However, this will mainly be done through the lens of a specific approach to politics – political agency models. This is a class of dynamic models which take imperfect information issues in politics seriously. They also provide a vehicle for weighing the selection and incentives issues emphasized in the last chapter. We will use these models to explore issues concerning the quality of economic policy choices and politicians.

Reflecting on institution design in this way, makes it cleat that the reasoning of this chapter could also apply to institutions more broadly, i.e. to have a theory of institutional faliure. This project is anticipated in Buchanan (1967) when he says:

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[34]See Cooter (2000) for an attempt to tackle issues of rights in constitutional choices more directly.

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"Theoretical welfare economics enables us to define the necessary marginal conditions that must be satisfied for an allocation of economic resources to be efficient. Straightforward extension of this analysis to "theoretical institutional economics" should enable us to define a similar set of conditions that would have to be met if an institutional arrangement or rule is to be classified as "efficient." It now seems quite possible that future developments will in fact allow for general statements of such conditions." http://www.econlib.org/library/Buchanan/buchCv4C 4.19.36.

Nearly forty years on, the future developments that Buchanan refers are not yet a reality. However, much progress is being made.[35]

8 Concluding Comments

The main purpose of this chapter has been to identify sources of government failure. We have introduced three criteria by which such failures can be defined. We have also shown that they are distinct. Defining government failure in terms of Pareto efficiency – to parallel the classic definition of market failure – has little bite in static settings with unitary political actors. It can, however, be important when multiple actors are engaged in policy making. It is also non-trivial in dynamic models of government resource allocation.

Bator (1958) argued that non-appropriability, non-convexity and public goods are the main sources of market failure defined as a Pareto efficiency. The parallel list suggested by the discussion here is non-Coasian legislative institutions, poor selection of policy makers, costly rent seeking, and intertemporal investment, policy and political linkages.

This discussion of government failure serves as a useful background to the specific discussion that follows, but also to more general debates about the achievement of government. In criticizing government intervention it pays to be specific about the sense in which government is failing and the remedy that is needed. To do this in a rich economic policy model is by no means straightforward. But the desiderata as laid out above are useful as an intellectual structure. Economists have benefited enormously from having a rigorous notion of market failure and there is every reason to think that putting government failure on a similarly firm intellectual footing should also pay off.

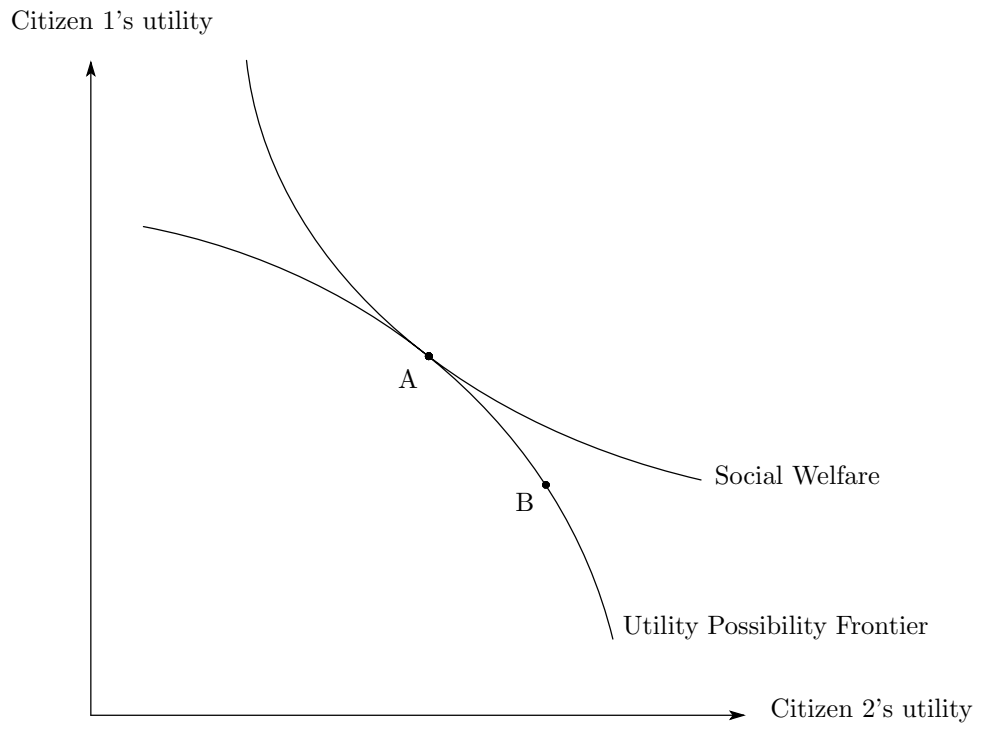[35]See Acemoglu (2005) for further discussion.

Citizen 1's utility

A

Social Welfare

B

Utility Possibility Frontier

Citizen 2's utility

Figure 1: Pareto Inefficiency and Distributional Failures

Citizen 1's utility
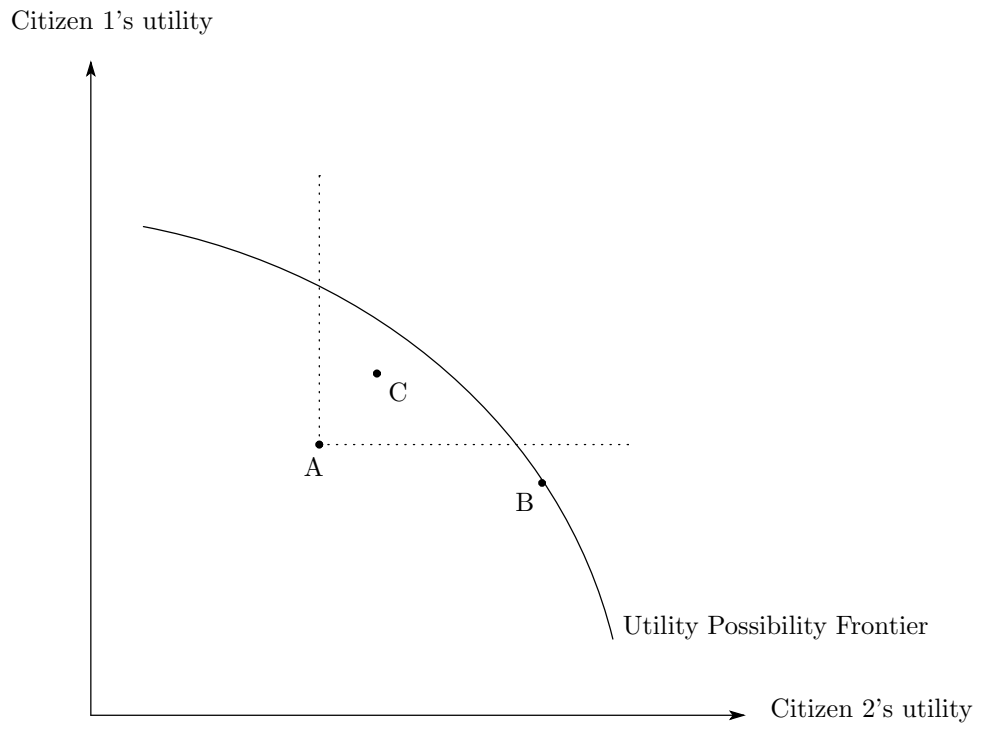
C

A

B

Utility Possibility Frontier

Citizen 2's utility

Figure 2: Wicksellian Failures and Pareto Inefficiency