# Policy restrictions, democratic deficit and redistribution

## Working paper

# Policy Restrictions, Democratic Deficit and Redistribution

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**Abstract**

Restrictions to the range of policies available to governments are often recommended as a solution to coordination failures or time inconsistency problems. However, policy restrictions can have important drawbacks that have been generally ignored so far. When the hands of governments are tied, citizens have lower incentives to be informed on political matters and to participate in collective decision-making processes, since private returns from political information are lower. This mechanism provides a micro-foundation for the idea that the so-called "democratic deficit" induces low participation in political life. Moreover, a fiscal policy restriction tends to reduce redistribution by inducing lower political information acquisition by part of poorer voters.We show that an exogenous restriction on the amount of public good that a government can supply (or on the taxes that can charge) may induce less public good supply (less taxation) with respect to its no-restriction level, independently of whether the restriction imposes a maximum amount, a minimum, or both. Perversely, the equilibrium outcome can be very different from what the restriction intended to achieve.

**Keywords:** democratic deficit, median voter, political information, rules vs discretion, redistribution.

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# 1 Introduction

Restrictions to the range of policy choices that sovereign state-nations can implement are increasingly common. Supranational institutions like the European Union (EU), for example, are responsible for a wide range of policy issues delegated to them by the individual member states. The Stability and Growth Pact imposes limits to the type of fiscal policy that the members of the Euro area can implement, and particularly to the debt and the level of public deficit that they can run, and establishes a system of sanctions for violators. Organizations like the International Monetary Fund (IMF) or the World Bank often require national states to comply with specific policy requirements in exchange for the benefit of accessing their lending system. The World Trade Organization (WTO) limits the barriers to trade that individual member countries can impose on foreign goods and services. National states sometime choose to self-impose restrictions on the spectrum of policies that their governments can implement, for example by delegating the choice to non-elected bodies (like in the case of central banks), by requiring super-majorities for changes to the status quo, by including some policy dimensions directly into the constitution, or by adopting authomatic rules to replace the discretion of elected representatives.

Policy restrictions are especially common in the realm of monetary policy. The last decades have witnessed the emergence of a consensus on the idea that independent central banks are better at keeping inflation under control, and most countries have chosen to entirely delegate monetary policy to a non-elected body. Restrictions to fiscal policy are less common but certainly not a rarity. Apart from the restrictions imposed by the previosuly mentioned Stability and Growth Pact, many countries have laws specifically designed to avoid running public budget deficits or to limit their size. One of the first cases of fiscal rule was represented by the Gramm-Rudman-Holling Act introduced in the US in 1985. The Swiss constitution requires the budget to be structurally balanced (i.e. balanced over a business cycle). In Chile a minimum structural surplus of 1% is required in each fiscal year, while in Brasil the government is committed to a primary budget balance. Multiannual spending limits of various form exist or have recently been introduced in the Netherlands, New Zealand,

Sweden, the UK and the US.

Policy restrictions may be imposed for various reasons. In the case of supranational institutions, restricting and coordinating the action of the member states is often the very reason of their existence: the benefit is to overcome coordination failures thus helping to reach more desirable outcomes for all members  A monetary union like the euro area, for example, can be subject to free riding (exporting inflation) by individual member states if fiscal policies are not restrained. A similar argument applies to the gains from international trade and the role of the WTO. Another reason, often claimed in favor of policy restrictions, is that they help solving time-inconsistency problems on the part of policy-makers, thus generating credible commitments[1] and higher levels of general welfare by reducing political business cycles.[2] In the case of organizations like the IMF, the World Bank and the WTO, there is a clear presumption that some economic policies are better than others, but that fully discretionary policy-making procedures can often lead to suboptimal outcomes.

Little attention has instead been devoted to the potential problems that can be generated by restricting the range of admittable public policies. One of the most dangerous drawbacks of policy restrictions, especially when they are imposed from external bodies, is that they may generate a "democratic deficit", whereby policies are not chosen by citizens through a process of democratic deliberation and decision-making.[3] The existence and consequences of a democratic deficit have been particularly debated in the case of the EU.[4] However, it is hard to "think of a single application of democratic standards to an international organization – whether the European Union, the International Monetary Fund (IMF), the World Trade Organization (WTO), or even the United Nations – that does not conclude with a serious criticism of the organization".[5] Independent central banks have also been criticized for concentrating vast powers "in a body free from any kind of direct, effective political control".[6]

[1] See Kydland and Prescott (1977), Persson and Svensson (1989), Alesina and Tabellini (1990).
[2] Nordhaus (1975)
[3] See Dahl (1999).
[4] See for example Hix (1997), Moravcsik (2004) and Follesdal and Hix (2005).
[5] Moravcsik (2004), p. 337.
[6] Friedman (1968), p. 188.

One potentially important consequence of restricting the policy space available to governments is to induce lower interest in the political process among the citizens, therefore reducing political participation. This is particularly evident in the case of the EU parliamentary elections, which typically display a much lower turnout than national elections in individual member states. Numerous scholars have argued that this is a symptom of democratic deficit, since most of the decision-making power in the EU lies outside its parliament. The potential consequences of low interest and participation in the political process are not negligible. To remove certain issues from the public debate by delegating them to experts, or by reducing the range of decisions that can be taken by elected representatives, is likely to reduce their salience, the public debating of opposite views and the overall quality of collective deliberation. Moreover, reduced public interest and participation may have an impact on the incentives of policy-makers and therefore on the policies they choose to implement, which can be different, and even opposite, to those that the policy restrictions intended to achieve. This paper illustrates this mechanism by focussing on the redistributive implications of a restriction on the range of fiscal policies that a government can implement.

Our argument can be summarized as follows. First, we will argue that an important, and so far neglected, reason for citizens to be informed on politics is private decision-making. When voters are considered also as economic agents, it becomes clear that they have an interest in forming accurate expectations on public policy. What the political agents decide, through the mechanism of collective decision-making, becomes a given parameter for the choices that economic agents have to make. However, in a democracy, political agents (i.e. voters) and economic agents should, at least to a certain extent, coincide. Hence, forming accurate expectations by becoming informed about political matters should be considered part of standard economic optimization. When the range of possibilities open to policy-makers is reduced, so it is the value of forming accurate expectations: potential deviations from optimal behaviour become less costly, provided the voter is informed of the existence of the policy restriction itself. Therefore, policy restrictions reduce the private value of political information. This is, in our context, the "democratic deficit".

Our second step is to show that the democratic deficit generates asymmetric responses

across income groups. The asymmetry derives from the increasing returns of information, whereby an informed decision delivers higher expected returns to richer agents (who have more at stake) while the loss of deviating from the optimal decision is lower for poorer agents. Hence, when the value of an informed decision falls, poorer voters will be more likely to find that the costs of collecting political information are higher than its benefits. Therefore, poorer voters will rationally reduce their information acquisition disproportionately more than rich voters. The consequence is that policy restrictions will generally reduce awareness of political matters particularly among the poor.

The third and final step in our argument looks at the implications of the democratic deficit for electoral competition and the policy implemented in equilibrium. Changing the patterns of political knowledge across income groups affects equilibrium policies because office-seeking candidates target groups that are more responsive to their policy proposals. Hence, since the democratic deficit has a more severe impact on the political awareness of the poor, a restriction to the range of fiscal policies that a government can implement leads to a reduction in income redistribution. This process can lead to equilibria that are quite far from the initial aim of the policy restriction. We will illustrate an example that shows how a policy restriction introduced to help the poor may eventually reduce pro-poor redistribution.

It is important to stress that policy restrictions can serve some very important purposes in democratic constitutions. Apart from the aforementioned ones, they can also be used to prevent the expropriation of minorities, therefore both protecting some fundamental individual rights and ensuring that long term gains from social cooperation prevail over those from immediate appropriation.[7] When looking at the disadvantages of fiscal policy restrictions, these considerations should not be forgotten. However, while the literature that highlights the advantages of the restrictions is relatively abundant,[8] the drawbacks have rarely been analysed. Hence, the purpose of this paper is not to claim that restrictions are always a bad idea but, rather, that they might have undesired consequences that are worth considering.

[7] Rodrick (2000).

[8] For a recent example, see Wyplosz (2005), who proposes the creation of independent Fiscal Policy Committees, with a clear target in terms of debt level, similarly to what happens in the UK with the Monetary Policy Committee.

The paper is organized as follows. The next two sections illustrate why political information can be a valuable private good and discuss some of the related literature, while the rest of the paper illustrates our argument by using a formal game-theoretical model. Section 4 provides the set up of the model and Section 5 formally defines the private value of political information. Sections 6 and 7 derive the solutions of the model, respectively without and with a policy restriction in place. Section 8 provides an example of the perverse consequences of an apparently pro-poor policy restriction. Finally section 9 discusses the results and draws some conclusions.

# 2 Political information as a private good

Our point of departure is the idea that knowledge of platforms and candidates can be useful for private decision-making and not just for voting. In his classic work *An Economic Theory of Democracy* Anthony Downs (1957) illustrates four reasons why a rational citizen can become well informed about politics: "1) he may enjoy being informed for its own sake, so that information as such provides him with utility; 2) he may believe the election is going to be so close that the probability of his casting the decisive vote is relatively high; 3) he may need information to influence the votes of others (...); 4) he may need information to influence the formation of government policy as a lobbyist. Nevertheless, since the odds are that no election will be close enough to render decisive the vote of any one person, or the votes of all those he can persuade to agree with him, the rational course of action for most citizens is to remain politically uninformed".

The literature on the so-called "rational ignorance" hypothesis, separates the *homo oeconomicus* from the *homo politicus*, neglecting that many pieces of information that may be relevant for voting decisions are acquired for other purposes. For example, information about tax rates can be used to determine one's optimal labour supply and investments; information on the quality of public services can be useful to decide whether it is worthwhile using privately available alternatives. At the same time, being informed on these matters, and on the reforms that are being discussed and/or implemented, generates awareness of current

policy-making, and helps evaluating the performance of current administrators. Political information can also be acquired before elections to form more accurate expectations on future taxes, spending, regulations etc. Sometimes the decisions taken by politicians may reveal the superior information they have about variables that are relevant to private decision making, for example the probability of an imminent economic recession. Professional political agents have incentives to collect such information for career purposes: hence, an accurate observation of their choices can convey information on many variables that are unobservable (or too costly to observe) for the common citizen. In brief, the collective action problem behind the "rational ignorance" paradox does not need to be as severe as envisaged by Anthony Downs because political information is, to a certain extent, a private good.

Re-formulating a list of motivations that can induce ordinary citizens to be informed on political matters, we can identify essentially three reasons: 1) they may enjoy political information as a consumption good (motivation 1 in Downs); 2) political information can be useful for political decision-making (motivations 2, 3, 4 in Downs); 3) political information can be useful for private decision-making (e.g. market interactions). The existing literature, both theoretical and empirical, has widely considered and analysed the second motive and, to a less extent, the first. Because of an artificial modeling separation between the political and the economic worlds, the third motivation, which is the focus of this paper, has instead been completely neglected. In reality it is arguable that motivation 3 carries more implications than the other two for political equilibria in large elections. A taste for political information as a consumption good (motivation 1) has an idiosincratic component that should make it of limited relevance under majority rule. For what concerns motivation 2, in a large electorate the probability that any vote is pivotal is negligible and cannot provide strong motivation to information acquisition. Private decision-making represents instead a robust incentive to acquire information and, as we will see, its consideration in electoral models carries important political implications.[9]

[9] Asymmetric learning can also occur if information is a normal good. This, however, depends on the shape of the utility function. The results derived here are of a more general nature and do not rely on normality. More importantly, a policy restriction should have little or no consequences for the acquisition of information as a consumption good. For what concerns the probability to be decisive in an election, empirical research consistently shows that perceived and actual probabilities can be very different. However, there is

The implications analysed in this paper stem from the fact that information has increasing returns, in the sense that a relevant piece of information applies equally well to small and large-stake decisions. The cost of acquiring a given piece of information is instead, *ceteris paribus*, equal for everyone. To use a metaphor, learning that the tax rate on a particular asset has changed costs the same, *ceteris paribus*, to a person that can invest 1,000 dollars and to a person that can invest one million: the expected returns from investing in an alternative asset with lower taxation, however, are obviously rather different. Hence, the person with a million to invest will probably put more effort into gathering information both on tax rates and on the potential returns of alternative investments. This tension between the increasing returns and the fixed costs of information generates an asymmetric distribution of political knowledge whereby richer agents can be expected, *ceteris paribus*, to be better informed. Empirical studies support this claim: income is an important explanatory variable for political knowledge, even controlling for age, education and other variables that are positively correlated with it.[10] A standard interpretation of this result would be that the availability of resources induces more information acquisition: this would be the case, for example, if political information was, as it is reasonable to expect, a normal consumption good. The analysis provided here shows that not just the constraints, but also the motivation to acquire information varies as a function of the resources available to an individual. More importantly, the asymmetric distribution of motivation has important consequences in terms of implemented policies.

# 3 Related literature

The argument put forward in this paper combines a variety of ideas and results both from political science and economics. To start with, the idea of increasing returns of information, applied to financial markets, is certainly not new. Arrow (1986), for example, provides a

no a priori reason to expect this "error" to generate asymmetric awareness in the population. If anything, this should induce more sophisticated (and therefore better educated and richer) citizens to vote less, which runs contrary to empirical evidence.

[10] See for example the book of Delli Carpini and Keeter (1996) on American voters and the article by Larcinese (2007a) on British voters.

model where heterogeneous incentives to acquire information lead to an increase in income inequality via portfolio allocation choices. In Verrecchia (1982) agents may acquire private signals about the returns of stocks on top of what equilibrium prices already reveal. The idea that increasing returns to information can alter political equilibria has been introduced by Larcinese (2005), who derives some novel theoretical results on the politics of redistribution and, in particular, that increases in inequality do not necessarily lead to increases in redistribution because they induce more dispersion in political awareness and responsiveness.

The electoral competition model presented here is related to the work of Ledyard (1984), who presents a model of spatial electoral competition where each voter is uncertain about the preferences and cost of voting of other voters, and where abstention is admitted. Voters play a Bayesian game for given candidates' positions; this gives positive turnout when candidates' positions are differentiated. Candidates, however, are lead to convergence by competition for votes and this drives the equilibrium turnout to zero. In McKelvey and Ordeshook (1984) some voters are uninformed about the candidates' positions, but they know the preferences of the various subgroups in the population; hence, uninformed voters can make inferences using interest-group endorsement and opinion polls. Under certain assumptions about preferences and their distribution, voters choose as if they all had perfect information. McKelvey and Ordeshook conclude that perfect information is not a necessary condition to apply the median voter theorem. Stromberg (2004) introduces mass media as information sources in a probabilistic voting model: since some voters are more valuable than others to advertisers they will get better coverage of the issues that interest them. Electoral competition between office-seeking candidates will then translate the mass media bias into a policy bias.

Another important building block for the argument presented here is that the extent of political participation affects public policy. While I focus on information and responsiveness to platforms, most previous research has been dedicated to turnout and consistently finds a relationship between turnout patterns and public policy. Starting with the seminal study of Wolfinger and Rosenstone (1980), a vast empirical literature consistently finds positive correlations between turnout and individual characteristics such as income and education. Hence, low voter turnout is likely to imply a socioeconomically biased turnout (Rosenstone

and Hansen, 1993; Lijphart, 1997) which, in turn, can influence the identity and responsiveness of public policy-makers. Evidence in support of this hypothesis has been found by numerous scholars who have shown, for example, that social spending is positively affected by aggregate turnout (Peterson and Rom,1989; Hicks and Swank, 1992; Levitt and Snyder, 1995; Lindert, 1996; Strömberg, 2004, Larcinese, 2007b), by lower-class mobilization (Hill and Leighley, 1992, and Hill, Leighley and Hinton-Andersson, 1995), and by the extension of the voting franchise (Husted and Kenny, 1997). Recent empirical research also establishes a causal link between political knowledge and turnout, hence lending further credit and providing empirical support to the mechanism illustrated in this paper (Lassen, 2005; Larcinese, 2007a).

Finally, this paper relates to the vast literature that debates the nature and consequences of the so-called democratic deficit. Some authors argue that most international organizations and supranational institutions are insulated from democratic control and therefore suffer from a democratic deficit.[11] In the case of the EU, for example, "the power of the European Council, the council of Ministers and the Commission, on the one hand, and the comparative weakness of the European Parliament on the other, does make, as many have observed, for a democratic deficit in the Community".[12] The same can be said of independent agencies and independent central banks, which tend to be insulated from direct democratic control. Without entering in this debate, it is worth noting that a restriction in the policy space is only a special case of democratic deficit, where national governments cannot choose their policy in the full set of technically available options. In its prevalent meaning, a democratic deficit can arise independently of whether the policy space available to policy-makers is restricted or not, and refers to a general lack of accountability and public scrutiny. However, the model presented here provides a microfoundation for a phenomenon often observed in the presence of a democratic deficit of any sort: a lack of interest and participation which, for example, is reflected in the low turnout observed in some elections (like those for the EU parliament).[13]

[11] For different points of view about the existence of a democratic deficit and about its relevance see Dahl (1999), Moravcsik (2002), Majone (2005).

[12] Nugent (1991), p. 309.

[13] See Reif and Schmitt (1980) and Marsh (1998).

# 4 The setup of the model

Consider a polity composed of a large number of agents, who act both in the economy, by supplying labour, and as citizens, by electing their political representatives. Agents have identical utility functions $U(c, l, g)$, where $c$ is consumption, $l$ is leisure and $g$ is a public good. We assume $U(.)$ is quasi-concave and homogeneous of degree 1. These are fairly standard assumptions and include the most common specifications used in formal analysis of consumer theory. An agent with wage rate $w$ generates gross income and net income (consumption) respectively according to the functions

$$m = w(1-l) \tag{1}$$

$$c = m(1-t) \tag{2}$$

where $(1-l)$ is labour supply (with total time normalized to 1) and $t$ is a flat tax rate. Agents choose their optimal supply of labour given their wage rate and the tax. The indirect utility function is therefore $V(w(1-t), g)$.

The public good is produced with constant returns at unitary cost and, assuming that the budget of the public sector is balanced, we have

$$g = t \int w(1-l) f(w) dw \tag{3}$$

where $f(w)$ is the density function of the wage rate in the population.

The assumption of balanced budget implies that the policy space is uni-dimensional, since each level of $g$ corresponds to a unique tax rate and vice-versa. The preferred tax rate implicit in the function $V$ is decreasing in the wage rate. Assuming that $V$ satisfies the single-crossing property[14], the policy space admits a Condorcet winner $t_m$, which is the tax rate preferred

[14]Roberts (1977) shows that if the redistributive preferences of voters are monotonically related to their wage rate (which is the case if total pre-tax incomes are monotonically related to productivity), then a Condorcet winner exists and it is the redistributive tax preferred by the voter with median wage rate. Roberts calls this monotonicity condition "hierarchical adherence". Gans and Smart (1996) have shown that Robert's condition is substantially equivalent to the Spence-Mirrlees condition of single-crossing indifference curves.

by the agent with median wage.

We assume that there are two possible wage rate distributions, $f_1$ with probability $p$ and $f_2$ with probability $(1-p)$. Agents know their own $w$ but can only form expectations on the wage rate distribution. After observing her own wage rate each agent updates the probability of distribution $f_1$ to $p^u$. We will show later that describing the updating process used by the voters is not important for our results. However, trying to predict the wage distribution is important because the equilibrium tax rate depends on the distribution of preferences over taxes and therefore on the wage distribution.

The amount of public good is determined by majority voting. There are two parties ($L$ and $R$) competing for office. They can commit to their platforms and maximize expected plurality. Parties' platforms, $g_L$ and $g_R$ respectively, are announced publicly but are only observable at a cost $k$. This is not necessarily a monetary cost, and can reflect the time and effort, as well as the money, required to acquire information. Parties know the distribution of the wage rate (and therefore the distribution of preferences).

The timing of the model is represented in Figure 1: first of all Nature selects one of the two wage distributions, and this choice is only observed by the political parties. The citizens observe their own wage realization and update their beliefs on the wage distribution. In period 1 the two parties simultaneously announce their platforms. The citizens decide whether they want to learn the announcements at a cost $k$. Afterwards, the citizens supply labour and cast their votes on the basis of the information they have. We assume that uninformed voters either abstain or vote randomly. Finally the announced policy of the winner party is implemented and the payoffs are realized for all citizens.

< FIGURE 1 >

# 5 The private value of political information

In solving backward the individual decision problem of an agent, the central question is to compare the utility of an informed citizen with that of an uninformed one. The difference is

that an informed citizen can make her labour supply contingent on $t$.

We indicate the utility of an agent who observes the platform announcements when the wage distribution is $i$ with $V^*(w(1-t_i), g_i)$. Since this model retains all the classic assumptions of Downsian electoral competition, it should not be surprising, as will be shown later, that the platforms in equilibrium are identical. Hence, voters who observe the platforms can perfectly predict the tax rate and the level of public good, and can optimally supply labour. If platforms have not been observed instead, labour supply cannot be made contingent on the equilibrium tax rate. In such case the indirect utility function corresponding to the wage distribution $i$ is $\widetilde{V}(w(1-t_i), g_i)$ which, by definition of maximum value function, and since labour supply cannot be chosen optimally, cannot be greater than $V^*(w(1-t_i), g_i)$. Each voter can rationally anticipate the electoral competition mechanism and therefore predict where the platforms converge under any wage distribution. However, there remains uncertainty about the wage distribution itself. The expected utility in such case is therefore

$$\widetilde{V} = p^u \widetilde{V}(w(1-t_1), g_1) + (1-p^u)\widetilde{V}(w(1-t_2), g_2) \tag{4}$$

We can now define the private value of political information and show that it is increasing in the initial endowment (i.e. the wage rate) of each agent.

**Definition 1** *The expected value of observing the platform announcements is given by*

$$\Delta(w) = p^u[V^*(w(1-t_1), g_1) - \widetilde{V}(w(1-t_1), g_1)] + (1-p^u)[V^*(w(1-t_2), g_2) - \widetilde{V}(w(1-t_2), g_2)]$$

The notation $\Delta(w)$ indicates that the relevant heterogeneity in the value of information arises as a function of the wage rate.

**Proposition 1** *The value of information on platforms is increasing in the initial endowment, i.e.* $\frac{\partial \Delta}{\partial w} > 0$.

*Proof:*

By homogeneity of $U(.)$, we derive that

$$\Delta(w) = p^u[w(1-t_1)V^*(g_i) - w(1-t_1)\widetilde{V}(g_i)] + (1-p^u)[w(1-t_2)V^*(g_2) - w(1-t_2)\widetilde{V}(g_2)]$$

This can be re-written as

$$\Delta(w) = w[p^u(1-t_1)(V^*(g_1) - \widetilde{V}(g_1)) + (1-p^u)(1-t_2)(V^*(g_2) - \widetilde{V}(g_2))]$$

By the definition of maximum value function we have $V^*(g_i) - \widetilde{V}(g_i) \geq 0 \; \forall i$, which implies $\frac{\partial \Delta}{\partial w} > 0$.■

The proof of proposition 1 shows that the result does not depend on limiting the possible wage distributions to two. By using the homogeneity of degree 1 of the utility function, the relevant equations turn out to be linear and any number of possible wage distributions can be introduced with no alteration to our conclusions.

At this point it is straightforward to notice that the voters are informed if and only if $\Delta(w) > k$. This implies that there exists a threshold level of $w$, that we indicate with $\widehat{w}$, which separates the uninformed ($w < \widehat{w}$) from the informed ($w > \widehat{w}$).

# 6 Equilibrium with an unrestricted policy space

This section analyses the political competition game and the citizens' private and public decisions. The game is solved by backward induction, deriving agents' best responses and the political equilibrium. In this section there are no ex ante restrictions on the policy that can be implemented, apart from condition (3).

**Public Policy.** With full commitment to platforms, the policy proposed by the winning party ($g^*$) is implemented after the election; if the two parties get an equal share of votes then each policy is implemented with probability equal to $\frac{1}{2}$. At the end of this period the realized utility for each agent is given by $V^*(w(1-t^*), g^*) - k$ for the informed voters and $\widetilde{V}(w(1-t^*), g^*)$ for the uninformed.

**Voting.** With two parties, agents always have a weakly dominant strategy and their optimal voting strategy is

$$P^*(w, g_L, g_R) = \left\{ \begin{array}{c} L \text{ if } V(g_L|w) - V(g_R|w) > 0 \\ R \text{ if } V(g_L|m) - V(g_R|m) < 0 \\ \text{abstain if } V(g_L|m) - V(g_R|m) = 0 \end{array} \right\} \tag{5}$$

**Information acquisition.** Agents decide whether they intend to learn the platform announcements, at a cost $k$, or not. As we know from the previous section, information acquisition occurs if and only if $\Delta(w) > k$, which implies the existence of a threshold wage rate $\widehat{w}$ which separates the informed from the uninformed.

**Equilibrium.** Parties announce their platforms simultaneously. At the beginning of the game they both observed the realization of the wage distribution $f_i$. The assumptions we made on the utility function, and particularly the single-crossing condition on $V(.)$, imply the existence of a Condorcet winner. The Condorcet winner is the platform preferred by the voter who is median in the set of the informed voters. Thus, office-seeking parties converge on the Condorcet winner.

**Proposition 2** *The unique political equilibrium is given by* $g^*$ *s.t.* $g = \arg\max w^*(1 - t(g^*))V(g^*)$ *with*

$$\int_0^{w^*} f(w|w > \widehat{w})dw = \int_{w^*}^{\infty} f(w|w > \widehat{w})dw.$$

*Hence, the political parties converge on the platform preferred by the median informed voter.*

The argument for convergence is identical to the standard Downsian argument, the only difference being that the relevant population distribution is limited to the informed voters. Given that the preferred tax rate is inversely related to the wage rate of each agent, two conclusions follow immediately from Proposition 2. The first is that *full information equivalence does not occur*: the equilibrium tax rate is lower than the tax that would be chosen by a fully informed electorate. The second is that an increase in the cost of information $k$

decreases the tax rate, by reducing the share of informed voters. Hence, obstacles to the free circulation of information that increase its acquisition costs, will induce lower redistribution.

# 7 Equilibrium with a policy restriction

A policy restriction can be interpreted as a reduction in the range of feasible policies, i.e. in the choice set of policy-makers. In this section we assume that, for any two levels of the public good $g_a$ and $g_b$ (or of the corresponding tax rates $t_a$ and $t_b$), the quantity $[V^*(w(1-t),g) - \widetilde{V}(w(1-t),g)]$ is increasing in the distance $|g_a - g_b|$. This simple monotonicity condition is illustrated in Fig. 1, which also shows how, under this assumption, a policy restriction (i.e. a reduction in the admittable range of either $g$ or $t$) implies a reduction in the value of information.

< FIGURE 2 >

In Fig. 1 the initial policy range is $[g_1, g_2]$ (corresponding to tax rates of, respectively, $t_1$ and $t_2$) where $g_i$ represents the equilibrium public good supply with the wage distribution $f_i(w)$. Knowing $g$, an informed voter can optimally supply labour as a function of $t$ and therefore reach $V^*$. An uninformed voter is instead not responsive to the realization of $t$ and only reaches utility $\widetilde{V}$. By using a continuity argument it is easy to show that, for each given $p^u$, there exists a level of $g$ ($g_x$ in Fig. 2) such that[15]

$$V^*(w(1-t_x), g_x) = \widetilde{V}(w(1-t_x), g_x)$$

The value of information is then a weighted average of the difference between $V^*$ and $\widetilde{V}$ in correspondence of $g_1$ and $g_2$, where the weights are $p^u$ and $(1-p^u)$.[16]

[15] The problem satisfies all the conditions to apply the weighted mean value theorem for integrals (theorem 5.5 in Apostol (1967), p. 219), which ensures that the two quantities must be equal for some $g$.

[16] Again, it would be easy to gereralise to any number of wage distributions. Suppose that each wage distribution generates a different equilibrium $g$, then the value of information would be represented by the integral of the difference between $V^*$ and $\widetilde{V}$ weighted by the probability of each distribution to be selected by the Nature.

Now consider a restriction of the policy range to $[g_{\rho 1}, g_{\rho 2}]$ (or, equivalently, to $[t_{\rho 1}, t_{\rho 2}]$). Assuming that $\widetilde{V}$ remains unaffected by such restriction, the value of information is now a weighted average of the difference between $V^*$ and $\widetilde{V}$ in correspondence of $g_{\rho 1}$ and $g_{\rho 2}$. Since

$$\begin{aligned} V^*(g_{\rho 1}) - \widetilde{V}(g_{\rho 1}) &\leq V^*(g_1) - \widetilde{V}(g_1) \\ V^*(g_{\rho 2}) - \widetilde{V}(g_{\rho 2}) &\leq V^*(g_2) - \widetilde{V}(g_2) \end{aligned}$$

it must follow that, independently of the weight used[17], a weighted average of the difference between $V^*$ and $\widetilde{V}$ in correspondence of $g_1$ and $g_2$ must be higher than a weighted average of the difference between $V^*$ and $\widetilde{V}$ in correspondence of $g_{\rho 1}$ and $g_{\rho 2}$.[18] Hence, restricting the policy space reduces the value of political information. The intuition is clear: since political information is used for individual maximization, a reduction in the policy range reduces the potential gains and losses of deviations from the optimum. In the limit, if the policy restriction imposes a given level of $g$ (and therefore $t$), the value of political information would be zero since the policy is determined outside the political mechanism and would be known before and without the election. There would be no need to acquire political information to make policy-contingent private choices.

Indicating with $\Delta_\rho$ the value of information on platforms under a policy restriction, we have that $\Delta_\rho < \Delta$ for any level of $w$. Therefore, for a given $k$, the policy restriction reduces the size of the informed population by moving upward the threshold $\widehat{w}$ that separates the informed from the uninformed. Although the value of information with a policy restriction is lower for everybody, the consequences are mainly felt at the lower end of the wage distribution: an increase in the threshold $\widehat{w}$ means that more low-wage citizens will choose to remain uninformed. This changes the equilibrium corresponding to any realization of the wage distribution.

**Proposition 3** *The unique political equilibrium with a restriction in the policy space is given*

[17] This implies that we do not need to worry about the updating process.

[18] If we had many wage distributions then the policy restriction would rule out the distributions that generate larger differences between $V^*$ and $\widetilde{V}$. The integral over the admittable policy space would again deliver a lower value of information when a restriction is introduced.

*by* $g_\rho$ *s.t.* $g_\rho = \arg\max w^*_\rho(1 - t(g_\rho))V(g_\rho)$ *with*

$$\int_0^{w^*_\rho} f(w|w > \widehat{w}_\rho)dw = \int_{w^*_\rho}^{\infty} f(w|w > \widehat{w}_\rho)dw.$$

*with* $\widehat{w}_\rho$ *indicating the threshold wage level between informed and unformed citizens with a policy restriction. Since* $\widehat{w}_\rho > \widehat{w}$ *it must be that, everything else equal,* $g_\rho < g^*$.

In practice, a restriction in the policy space is equivalent to either a decrease in the value of information or an increase in the cost of information. Any given policy outcome can be induced either by changing $k$ or by appropriately changing the set of feasible policy choices.

# 8 An example

The following example illustrates an extreme case: a restriction can have perverse consequences and induce the policy-makers to propose policies that are just the opposite of what the restriction intended to achieve. Hence, a restriction that is introduced to benefit the poor can eventually lead to policy choices that are instead favourable to the rich.

Let us consider a population divided into two groups, rich and poor, where the number of rich is $N_R$, the number of poor is $N_P$ and $N_P > N_R$. Rich and poor are endowed with different wage rates $w_R$ and $w_P$. Both are independent random variables: $w_R$ can assume value $\overline{w}_R$ (high) with probability $\alpha$ and value $\underline{w}_R$ (low) with probability $1 - \alpha$, while $w_P$ can assume value $\overline{w}_P$ with probability $\beta$ and $\underline{w}_P$ with probability $(1 - \beta)$. We also have that $\overline{w}_R > \underline{w}_R > \overline{w}_P > \underline{w}_P$. Assume that the value of information $\Delta(\cdot)$ is such that $\Delta(\overline{w}_R) > \Delta(\underline{w}_R) > \Delta(\overline{w}_P) > k > \Delta(\underline{w}_P)$.

Now consider two regimes: in regime *(a)* a linear tax is levied on the entire population and the revenue is used to produce the public good. In regime *(b)* an exogenous restriction prevents taxation below a threshold level of gross income, such that the poor are not taxed if their wage rate is low. Indicating this threshold with $\widehat{m}$, we have therefore $m_R(w_R, t) > m_P(\overline{w}_P, t) > \widehat{m} > m_P(\underline{w}_P, t)\ \forall t$.

**Case (a): no restrictions**. With full information $t$ is known to everybody. Therefore

each agent performs an individual optimization over labour supply, given her own wage rate and the tax. The poor prefer higher taxes than the rich, i.e. $t_P > t_R$ (and $g_P > g_R$). They also prefer higher taxes when they are poorer and when the rich are richer. Hence:

$$\begin{aligned} t_P(\underline{w}_P, \overline{w}_R) &> t_P(\underline{w}_P, \underline{w}_R) > t_P(\overline{w}_P, \overline{w}_R) > t_P(\overline{w}_P, \underline{w}_R) > \\ t_R(\overline{w}_P, \underline{w}_R) &> t_R(\overline{w}_P, \overline{w}_R) > t_R(\underline{w}_P, \underline{w}_R) > t_R(\underline{w}_P, \overline{w}_R) \end{aligned}$$

The Condorcet winner in each possible state of the world is $t^* = t_P$, and competing political parties converge on $t^*$. The expected tax rate with no restrictions and perfect information is therefore:

$$E(t^*) = \alpha(1-\beta)t_P(\underline{w}_P, \overline{w}_R) + (1-\alpha)(1-\beta)t_P(\underline{w}_P, \underline{w}_R) + \alpha\beta t_P(\overline{w}_P, \overline{w}_R) + (1-\alpha)\beta t_P(\overline{w}_P, \underline{w}_R)$$

With imperfect information, if $w_P = \overline{w}_P$ then the poor are informed and the tax rate is $t_P$. If $w_P = \underline{w}_P$ then the poor remain uninformed and do not influence the choice of the tax rate. The expected tax rate is now:

$$E^u(t^*) = \alpha\beta t_P(\overline{w}_P, \overline{w}_R) + (1-\alpha)\beta t_P(\overline{w}_P, \underline{w}_R) + (1-\alpha)(1-\beta)t_R(\underline{w}_P, \underline{w}_R) + \alpha(1-\beta)t_R(\underline{w}_P, \overline{w}_R)$$

It is not surprising to observe that $E^u(t^*) < E(t^*)$.

**Case (b): exogenous restriction.** Now an exogenous restriction of the policy space prevents the poor from being taxed if their wage rate is low. The preferred tax levels change accordingly. Indicating with $t_P^\rho(\underline{w}_P)$ the tax rate preferred by the poor when their wage rate is low under the restriction, we have $t_P^\rho(\underline{w}_P, \overline{w}_R) > t_P^\rho(\underline{w}_P, \underline{w}_R) > t_P(\underline{w}_P, \cdot)$. If the wage rate of the poor is high then their preferred tax rate is not affected by the restriction, so $t_P^\rho(\overline{w}_P, \cdot) = t_P(\overline{w}_P, \cdot)$.

The preferred tax rate of the rich also changes. If the poor's wage is high then again the restriction has no effect: $t_R^\rho(\overline{w}_P, \cdot) = t_R(\overline{w}_P, \cdot)$. But if $w_P = \underline{w}_P$ then $t_R^\rho(\underline{w}_P, \cdot) < t_R(\underline{w}_P, \cdot)$ (assuming that the substitution effect dominates the income effect) since the rich have to pay for the public good with no contribution of the poor.

With full information the exogenous restriction is clearly favourable to the poor since the new Condorcet winner follows the preferences of the poor and the expected tax becomes

$$E^{\rho}(t^*) = \alpha(1-\beta)t_P^{\rho}(\underline{w}_P, \overline{w}_R)+(1-\alpha)(1-\beta)t_P^{\rho}(\underline{w}_P, \underline{w}_R)+\alpha\beta t_P(\overline{w}_P, \overline{w}_R)+(1-\alpha)\beta t_P(\overline{w}_P, \underline{w}_R).$$

With imperfect information, if the poor's wage is low they have no uncertainty over their own tax rate, which is going to be zero independently of the collective choice. The poor can perform their preferred labour supply choice without information gathering and the value of information for them becomes zero. The Condorcet winner is $t_R^{\rho}(\underline{w}_P, \cdot)$ which is lower than $t_R(\underline{w}_P, \cdot)$. The expected tax rate is

$$E^{\rho u}(t^*) = \alpha(1-\beta)t_R^{\rho}(\underline{w}_P, \overline{w}_R)+(1-\alpha)(1-\beta)t_R^{\rho}(\underline{w}_P, \underline{w}_R)+\alpha\beta t_P(\overline{w}_P, \overline{w}_R)+(1-\alpha)\beta t_P(\overline{w}_P, \underline{w}_R).$$

The situation, considering asymmetric information, has been reversed and the exogenous restriction proves to actually be harmful for the poor. The magnitude of expected tax rates can be ranked as

$$E^{\rho}(t^*) > E(t^*) > E^{u}(t^*) > E^{\rho u}(t^*)$$

A restriction which has been introduced to increase income redistribution and public good supply has reduced them.

# 9 Discussion

Whether externally imposed by international organizations and supranational institutions, or self-imposed by laws and constitutions, the democratic deficit induced by policy restrictions can have perverse consequences. This paper illustrates how a policy restriction can induce lower information acquisition and reduced participation by voters, with relevant consequences for social spending and income redistribution. The argument is based on an analysis of the incentives to acquire political information and highlights the importance of political awareness for private decision-making.

Like for other goods, rational agents acquire political information only as long as its marginal benefit is larger than its marginal cost. Restrictions to the range of policies that governments can implement reduce the decision-making value of political information while leaving unaffected its cost. Hence, when governments' hands are tied, citizens have lower incentives to be informed on political matters.[19] This mechanism provides a microfoundation for the idea that the so-called "democratic deficit" induces low participation in political life. The model presented in this paper shows that an exogenous restriction on the amount of public good that a government can supply (or on the taxes that can charge) may induce less public good supply (less taxation) with respect to its no-restriction equilibrium level, independently of whether the restriction imposes a maximum amount, a minimum, or both.

This paper focuses on taxation and redistribution, but the mechanism illustrated can operate in other dimensions too. When citizens's interest in politics is reduced, it is legitimate to expect that also the responsiveness and the accountability of public officials can be affected. In fact, although to establish results in this direction goes beyond the purpose of this paper, a democratic deficit could affect the overall quality of deliberation and collective decision-making in a polity. As noticed by Hix (2007) with respect to the EU, there is a risk to get "closer to a form of enlightened despotism than a genuine democracy".[20]

It should be obvious that the model only highlights a theoretical possibility and certainly cannot induce us to conclude that policy restrictions are a bad idea in general. Their merits and drawbacks should be considered case by case. Current research, however, has devoted no attention to such potential drawbacks and tends, therefore, to be biased in favour of rules, independent agencies, constitutional restrictions and, in general, limitations to the range of policies that governments can implement at their discretion. Although a vast literature has established that there are many good reasons to tie a government's hands under some

[19] In a sense, while political information has the characteristics of a public good, private decision-making constitutes, in Olson's terminology, a "selective incentive" towards its acquisition. Therefore, removing or reducing the private motivation increases the collective action problem.

[20] Hix (2007) notices that "the representative structures and the checks-and-balances of decision-making ensure that EU policies are relatively centrist, and hence close to the views of most European citizens. However, without a genuine debate about and competition over the exercise of political authority at the European level, most people do not know what their views are about major policy issues on the EU agenda and have no way of influencing the direction of the EU policy agenda even if they did" (Hix, 2007, pp. 8-9).

circumstances, mainly to solve coordination and time inconsistency problems, it is important to give adequate consideration to the drawbacks and possibly perverse consequences of certain choices. Having in place fully empowered governments has some important advantages that have been ignored for too long in the literature on "rules versus discretion". Particularly important is the possibility for citizens to be involved in public deliberation and decision-making, with the added benefit of a public discussion of policy-issues that, when delegated to technocrats, are instead often removed from public attention. The framework presented in this paper shifts the terms of this trade-off more in favour of having empowered governments and of limiting the use of policy restrictions and technocracy.

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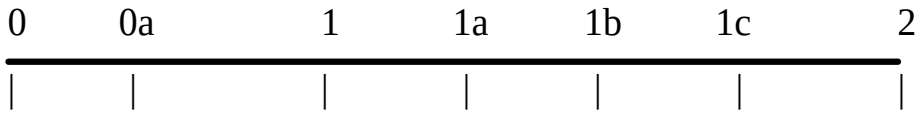


Figure 1: Time Line

0: Nature selects $f_1$ with probability $p$ and $f_2$ with probability $(1-p)$ and assigns a wage rate to each citizen.

0a: Political parties learn the wage distribution, citizens learn their own wage and update their beliefs on the wage distribution.

1: Political parties simultaneously and independently announce their platforms.

1a: Citizens decide if they want to gather information on platforms at a cost $k$.

1b: Labour supply.

1c: Voting.

2: Winning platform is implemented. Payoffs are realized.

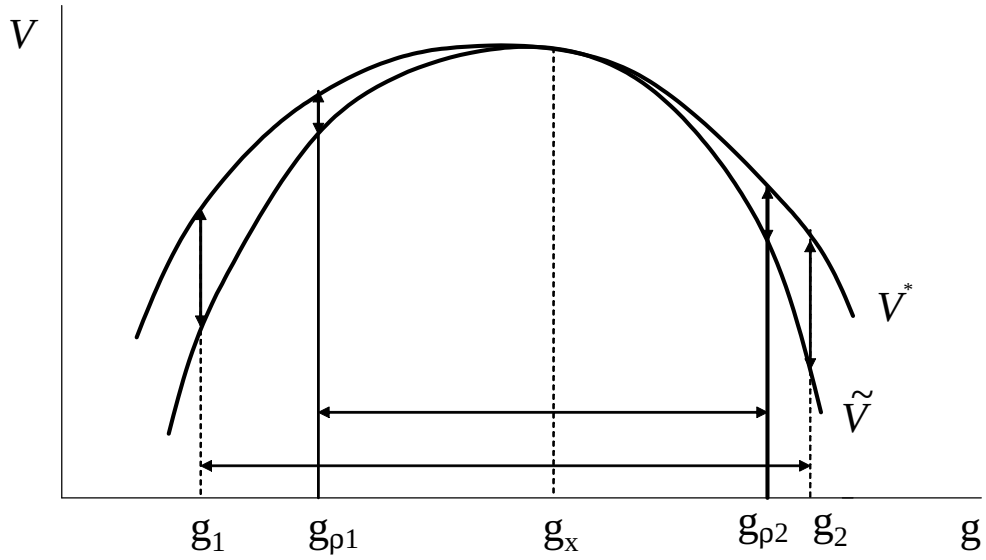


Figure 2: Policy restrictions and the value of information