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Bad Politicians

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ABSTRACT

We present a simple theory of the quality of elected officials. Quality has (at least) two dimensions: competence and honesty. Voters prefer competent and honest policymakers, so high-quality citizens have a greater chance of being elected to office. But low-quality citizens have a "comparative advantage" in pursuing elective office, because their market wages are lower than the market wages of high-quality citizens (competence), and/or because they reap higher returns from holding office (honesty). In the political equilibrium, the average quality of the elected body depends on the structure of rewards from holding public office. Under the assumption that the rewards from office are increasing in the average quality of office holders there can be multiple equilibria in quality. Under the assumption that incumbent policymakers set the rewards for future policymakers there can be path dependence in quality.

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The truth is that the city where those who rule are least eager to do so will be the best governed.

Plato.

1 Introduction

In democratic countries crucial economic-policy decisions are taken by elected officials, either directly, or indirectly through the appointment of top civil servants. The quality of the political elite can therefore have important repercussions on a country's welfare. This paper presents a simple theory of the quality of elected office holders.

There are at least two distinct – and possibly uncorrelated – dimensions to politicians' quality: competence and honesty. By competence we mean skilfulness at identifying the appropriate economic-policy objectives and achieving them at minimum costs for taxpayers. To make this notion concrete we will model competence as the ability to provide an indispensable public good with minimum tax revenues. We think competence in this sense is clearly desirable, and in our model voters prefer competent over incompetent office holders.[1] The lack of honesty manifests itself in the harassment of private citizens, who are forced to pay bribes or other kickbacks to office holders. A growing body of empirical work has shown that these forms of corruption negatively affect measures of economic performance, so in our model voters prefer honest over corrupt office holders.[2]

We take it as self-evident that both dimensions of quality vary enormously across countries. For honesty, this assertion is easily backed by a variety of data sources. For example, the *International Country Risk Guide* publishes a government corruption index for a sample

[1]Some readers familiar with Becker and Mulligan (1998) may see a potentially perverse indirect effect from politicians' competence, namely an incentive to expand the size of government. We assume the direct effect dominates from welfare's standpoint.

[2]See, among others, Mauro (1995), Hines (1995), Kaufman (1997), Tanzi (1997) and Wei (1997). Of course there is a tradition in economics arguing that in some circumstances corruption might allow attainment of a second-best outcome when the first-best is precluded by institutional constraints, but Myrdal (1968), Bardhan (1997), and Kaufman and Wei (1999) observe that the institutional constraints are themselves designed to suit the interests of a corrupt political elite. Kaufman and Wei (1999) also present empirical evidence against what they call the "efficient grease" hypothesis.

of 126 countries. The index takes values between 0 (highest corruption) and 10 (lowest), has a minimum of 0.18 and a maximum of 10, and a standard deviation of 2.3 (the mean is 5.7). For competence it is difficult to point to direct measures. Nevertheless, the recent empirical growth literature has uncovered and emphasized wide disparities in the quality of economic policy across countries. We think it is reasonable to suppose that these differences in the quality of policies reflect at least in part differences in the competence of the political leadership. A theory of the quality of politicians must therefore accommodate cross-country differences in outcomes.

We develop a simple but general setup for the study of democratic political representation, and apply this setup in turn to three models of politicians' quality. In the first model quality is identified with competence. In the second model quality is honesty. And in the third model we study the two-dimensional problem involving both competence and honesty, as possibly uncorrelated characters of citizens.

The basic mechanism at work in all three models is as follows. Voters prefer more over less competence, and more over less honesty. In other words, voters prefer quality. Candidates of higher quality have therefore higher chances of election than candidates of lower quality. On the other hand, low-quality citizens have a private *comparative advantage* in seeking office, as candidates of higher quality are the ones who have more to lose from giving up private life and/or less to gain from holding office. Competent citizens have more to lose because their private productivity is positively correlated with their competence in office, and honest citizens have less to gain because they will steal less if holding office. Hence, when the returns from holding office are sufficiently large, high-quality citizens run for and tend to win office. However, when these returns are low, high-quality citizens choose to lead private lives, and voters are forced to make do with low-quality candidates.

We find that the model can generate both multiple equilibria and path dependence in the average quality of the elected body. Multiple equilibria emerge when the payoffs from holding office are increasing in the average quality of office holders, for example because the social status enjoyed by politicians is influenced by the perceived quality of the political class. Thus, there are "good" equilibria in which – many office holders being of high quality – it pays for high-quality citizens to stand for election; and "bad" equilibria in which – many office holders being of low-quality – high-quality citizens are discouraged from running for office. "Interior" equilibria with various combinations of high- and low- quality citizens holding office are also possible. Differences across countries in the quality of elected officials could therefore be interpreted in terms of different countries being at different equilibria.

Path dependence emerges when we let the sitting elective body vote on a reward structure for elected office holders. High-quality office holders will generally vote for generous office-holder salaries, both to secure high-quality policymaking in the future (when they potentially return to the private sector), and to enjoy the higher rewards in case they are elected again. These incentives are shared by low-quality office holders, but in their case an additional concern is to affect their future chances of re-election. A relatively low office-holder salary will discourage high-quality citizens from seeking office, thereby making it easier for low-quality ones to win office. If this incentive is sufficiently strong, low-quality office-holders will vote for a relatively low salary. Hence path dependence: if historical accident delivers an initial high-quality majority, the high-quality will tend to persist. But if initially low-quality citizens are in a majority in the elective body, this low-quality will also tend to persist. Cross-country differences in quality could therefore stem from differences in initial luck.

There is extremely little previous work that applies formal economic methods to investigate the determinants of the quality of the political elite. Exceptions are represented by Myerson (1993), for corruption, and Besley and Coate (1997, 1998), for competence.[3] In these contributions low-quality candidates can be elected if voters who share their preferences cannot concentrate their votes on a higher-quality candidate, either because of coordination failures (band-wagon effect), or because preferences and ability are perfectly correlated. These arguments, therefore, focus on voting behavior. In our model, instead, no coordination failures or heterogeneity of preferences among voters need to be invoked: all voters prefer high-quality candidates, *and yet* low-quality candidates can be elected, simply because high-quality citizens have better things to do. The difference stems from the fact that, instead of voting behavior, our focus is on the self-selection of individuals of different quality into

[3] Our notion of an elected officials' competence is reminiscent of the one used in opportunistic models of the political cycle, such as Cukierman and Meltzer (1986), Rogoff and Sibert (1988), Rogoff (1990), and Persson and Tabellini (1990) (surveyed in Alesina, Roubini, and Cohen, 1997). However, these studies focus on a very different set of questions.

the pool of candidates.[4] For the same reason low-quality equilibria may exist even if voters have perfect information on the candidates' types – though our results are robust to the introduction of asymmetric information. Voters have no illusions as to the intrinsic qualities of the candidates, but may elect bad candidates because they are "rationed" in high-quality candidates.

Readers skeptical of multiple equilibria or path dependence might focus on differences in institutions. There are two possible versions of this argument. One is that the intrinsic quality of office holders is the same across countries, but different institutions lead to different structures of constraints and incentives in the policymaking process, and this in turn generates different outcomes. The other is that the quality of office holders itself varies because institutions, such as the electoral system, vary. We prefer our institution-free approach because we believe that the rules of the game are themselves endogenous and the political elite has the power to set or modify them. We think that bad rules are as likely to be the consequence, as the cause, of bad politicians. In a country in which a majority of office holders is high-quality we would expect institutions leading to bad policies, or to bad future quality, to be removed. As we show here, however, low-quality majorities might have incentives to keep "bad institutions" in place. We think these arguments apply to both competence and honesty.

A related point concerns our choice of modelling corruptibility as an intrinsic characteristic. It is common to assume that individuals are homogeneous in their propensity to act illegally, and that the extent of corruption depends on the institutional structure. But since institutions are designed by politicians, if politicians were homogeneous so would be institutions, and outcomes (at least in the long run) would be the same across countries. Perhaps more importantly, the homogeneity assumption is patently incorrect. The popular saying that "everyone has a price" over which he will accept or solicit a kickback implicitly acknowledges the fact that this price is generally different from individual to individual. We model this heterogeneity especially starkly, by making this price infinity for the "honest" citizens

[4] Dal Bó and Di Tella (1999) go to the opposite extreme and ask under what conditions a honest policymaker will pursue a corrupt policy. The answer is that he might be threathened with various forms of harassment by pressure groups. Another paper that is somewhat related is by La Porta et al. (1998), but it focuses on the quality of institutions rather than on the intrinsic quality of the members of the political leadership.

(those who will never take a bribe) and 0 for the "dishonest" ones, but it should be clear that all our qualitative results would go through if we had a smoother form of heterogeneity in the propensity to take illegal payments.[5]

Section 2 presents the general setup of the electoral game. Section 3 develops a model of office holders' competence. Section 4 focuses on office holders' honesty. Section 5 solves the two-dimensional model in which citizens differ both in competence and honesty. Section 6 concludes.

2 General Setup

The population is constituted by a continuum of individuals of measure $1 + p$. A measure p of the population holds public office, while the rest (of measure 1) are private citizens. Citizens in this economy play a citizen-candidate game, which is similar to the one proposed by Osborne and Slivinski (1996) and Besley and Coate (1997). The game has three stages. In the first stage, each citizen decides whether or not to run for public office. If yes, she makes her candidacy publicly known. Running for office requires the expenditure of a utility cost, ϕ. For most people ϕ is a finite constant. However, for technical reasons to be discussed below, there is a measure v ($v \in [p, 1]$) of citizens who have an infinite cost of running for office.[6] The campaigning cost ϕ is paid by a candidate only if a measure greater than p of citizens

[5]There is of course a literature on corruption, but this focuses mostly on corruption in the state bureaucracy. Instead, we study corruption of elected officials ("grand corruption"). In the literature on bureaucratic corruption higher salaries have generally an efficiency-wage interpretation: they discourage bribe taking by making it more costly to lose a public-sector job. In our framework, higher rewards from office are a way to induce the most honest citizens to run for office. An important contribution by Besley and McLaren (1993) analyzes both the efficiency-wage and the quality-selection effect of wages in the context of bureaucratic corruption. See Ades and Di Tella (1997) and Bardhan (1997) for surveys of the corruption literature. We think that corruption of elected officials is at least as important as corruption of civil servants. Elected officials are the ultimate depositary of power and – if honest – they can decide to minimize corruption in the civil service. We find it difficult to imagine a country in which elected officials are consistently of high quality and the civil servants are consistently of low quality. Indeed, other authors have argued that corruption of the bureaucracy is simply the system through which the kleptocratic political leader extracts his rents from the private sector (e.g. Charam and Harm, 1999).

[6]We discuss later the (straightforward) extension in which ϕ has a continuous distribution.

have made their candidacy publicly known (otherwise there is no point in campaigning).[7]

In the second stage all citizens vote for one of the candidates who campaigned, if any. Each citizen can vote for at most one candidate, and votes to non-candidates are void. The measure p of candidates receiving the most votes are elected to office. When necessary, ties are broken with a random draw. In the third stage elected office holders and private citizens (i.e., the non-candidates as well as the candidates who fail to win the election) collect payoffs, to be specified below. In some instances the payoffs depend on some further action to be taken after the election.

Citizens possess rational expectations at all times. Both the candidacy decision and the voting decision are taken so as to maximize expected payoffs. Strictly speaking, because there is a continuum of voters, each citizen has no chance of individually affecting the electoral outcome, and should therefore be indifferent as to whether and for which type she votes. This would obviously lead to a high degree of indeterminacy in the equilibrium analysis, but indeterminacy of this kind is hardly interesting. We assume, therefore, that voters behave *as if they were pivotal*. Namely, in an equilibrium no voter must have a deviation from his voting strategy that would lead her to receive a higher payoff were this deviation to have a decisive effect on the electoral outcome. If a voter is indifferent among candidates in this "as if pivotal" sense, we assume that she randomizes among them. The equilibrium is computed by backward induction, so that it is subgame perfect.[8]

[7] We think of p as the measure of all elective offices in the polity, including all levels (local, state, and national) and functions (judiciary, executive, and legislative) of government. Of course, there is a tremendous amount of simplification as we assume that all these offices confer the same rewards and are assigned in a unique electoral college.

[8] The formal definition of a political equilibrium is as follows. Denote by d_i (equal to r (run) or n (don't run)) the decision of citizen i at the candidacy stage and denote by d the profile of candidacy decisions. Let $C(d)$ be the set of candidates given the candidacy profile d. Let $\Omega_i(d) \subseteq C(d)$ denote the subset of the candidates' population within which player i picks the candidate she will vote for (with a uniform draw). A political equilibrium is a profile $\{d^*, \Omega^*(\cdot)\}$ such that

1. $\Omega_i^*(d)$ is a "conditionally sincere" response to $\Omega_{-i}^*(d)$, $\forall d$, $\forall i$;
2. d^* is Nash given $\Omega^*(\cdot)$;
3. weakly dominated strategies are eliminated.

A voting profile satisfies **conditional sincerity** if and only if no voter would prefer a decrease in the measure

3 Competence

In this and in the next section we assume that the population is heterogeneous in one (and only one) dimension, and in this section this dimension is ability (i.e., for now we abstract from corruption). A measure $s(1+p)$ of the population is of type s, or high ability, while a measure $(1-s)(1+p)$ is of type $\overline{s}$, or low ability. Hence, s is the fraction of the population of type s. We denote by p_s the fraction of office holders who has high ability (so the measure of high-ability office holders is $p_s p$). The measure v of citizens who never run for office is representative of the population, so sv of them are of type s. We assume $1-v > s(1+p-v) > p$ so that $p_s = 1$ and $p_s = 0$ are both feasible. For now we assume that there is perfect information: everyone knows everyone else's type. We show later that the results are robust to any reasonable introduction of asymmetric information. Our goal is a theory of the determination of p_s.

A private citizen's utility is linear in consumption. Consumption is market income less taxes. Market income depends on the citizen's type and on the provision of a public good. Specifically, if the public good is provided in the indispensable amount g^*, a private citizen of type i receives market income λ^i. In other words market income depends on ability and we accordingly assume that $\lambda^s = \lambda > 1 = \lambda^{\overline{s}}$. To simplify matters we also assume that taxes t are lump-sum, and identical for everyone. If the public good is not provided in the indispensable amount g^* no economic activity can take place, so all citizens' market income is 0 (think of g^* as contract enforcement). With no tax base there can be no taxes, and all citizens' utility is 0. These assumptions make sure that high-ability citizens have greater private returns than low-ability ones, and that all voters prefer any government to no government, even if the only feasible government is of very low quality.

A citizen who holds public office enjoys utility $\pi + w$. With w we denote the official salary (including pension) of an elected official. Since we know of no country in which prospective office holders face official wage schedules that are contingent on their market

of votes obtained by the candidate he has voted for in an electoral contest (Alesina and Rosenthal 1996). It is clear that this captures the informal "as if pivotal" criterion stated in the text. Alesina and Rosenthal (1996) show that when a voting equilibrium is conditionally sincere no coalition of voters can deviate and achieve a superior outcome for all of its members. It will be seen that in our two one-dimensional models conditionally sincere voting coincides with sincere voting. Conditional sincerity is only important in the two-dimensional model (Section 5).

wages, throughout the paper we constrain w to be the same for all office holders. By π we denote the consumption equivalent of all psychological rewards that accrue to a public-office holder, such as the social status that is conferred to people in power ("ego rents"). For now we treat π as independent of the office holder's type, but later we discuss the case in which π is different across types. Collection of the payoff $\pi + w$ is also contingent on the provision of the indispensable amount of public good. If g^* is not provided, office holders' utilities are again 0. This assumption makes sure that policy-makers will always choose to provide the indispensable public good in the indispensable amount. The reader can think of the consequences of not providing contract enforcement as so severe that it is impossible for office holders to collect any payoff, material or moral.

The key assumption of the model of competence is that, once in office, high-ability citizens are more competent than low-ability ones, in the sense that they are able to provide the indispensable public good at lower tax costs. In particular, we assume that the amount of taxes that need to be raised to finance the public good is decreasing in the percentage of high-ability office-holders, p_s. Formally, the government budget constraint can be written as $t = f(g^*, p_s)$, where $\partial f / \partial p_s < 0$. Since g^* is a constant, we can simply write $t = t(p_s)$, where $\partial t / \partial p_s < 0$. Private citizens, therefore, always prefer more high-ability office holders.[9] We explain later that our results hold even if private ability and public competence are less than perfectly correlated. In order to simplify things, without loss of generality, we assume that $\pi + w - \phi \geq 1 - t(0)$ always.

3.1 Properties of the Political Equilibrium

Some general properties of the model are immediately apparent. First, if a citizen is a candidate, she will always vote for herself. Candidacy requires an expenditure, and no citizen will find it optimal to sustain this cost if she does not want to be elected (because of the large number of positions to be filled, there is no scope in this model for strategic use of one's candidacy to affect other candidates' election prospects). Second, citizens who are not candidates (whatever their type) will always vote for a candidate of type s (high ability) if

[9] We have implicitly assumed that office holders do not pay taxes, so that the measure of tax payers is 1. Thus, t denotes the individual as well as the total tax. This assumption leads to no loss of generality.

given a chance. Denote by C_i the set and the measure of candidates of type i. As long as C_s is a non-empty set, each non-candidate will vote for a member of this set. Within this set each voter chooses randomly and uniformly, and each voters' choice is independent of the choice of other voters. Because low-quality policy-makers are better than no policy-makers at all, when C_s is empty non-candidates vote for a random member of $C_{\overline{s}}$.

Given the general properties of voting behavior, a prospective candidate of type i can compute her probability of election, should she decide to run. Call P_i the probability that a candidate of type i will succeed in being elected. The above discussion implies that any equilibrium in which some offices are filled by low-quality citizens, or such that $p_s < 1$, must also feature $P_s = 1$ and $C_s = p_s p$. Non-candidates will always choose to vote for a candidate of type s, so the measure of type-s candidates who receive strictly more votes than type-$\overline{s}$ candidates is the minimum between C_s and the measure of non-candidates. Since the latter are always in excess of p (because $v > p$) we can have $p_s < 1$ only if $C_s < p$, and in this case all type-s candidates are certain of election. By the same token, any equilibrium featuring $p_s = 1$ must imply $C_s \geq p$ and $P_{\overline{s}} = 0$. In other words, there can be equilibria in which unskilled candidates hold office if and only if voters are "rationed" in the number of high-quality candidates ($C_s < p$), in the sense that there are not enough candidates of high quality to fill all the elective offices.[10]

Call θ the net rewards from holding office, $\theta \equiv \pi + w - \phi$. Given election probabilities, an individual of type i will stand for office if and only if

$$P_i \theta \; + \; (1 - P_i)[\lambda^i - t(p_s) - \phi] \geq \lambda^i - t(p_s). \tag{1}$$

The left-hand side is the expected return from running for office, which takes into account the possibility of losing and having to return to private life, which pays off $\lambda^i - t(p_s)$ less the cost of running ϕ. The right-hand side is the (certain) return from not running.

The properties of the resulting equilibrium are best analyzed with the help of Figure 1.

[10]If one removes the assumption that a measure $v \in [p, 1]$ of citizens have infinite disutility from running, then, for very high values of π, an equilibrium where everybody runs and votes for herself would also exist, implying $p_s = s$. Also note that the fact that weakly dominated strategies are eliminated, together with the fact that ϕ is paid only if the measure of candidates is at least p, guarantees that "nobody runs" is not an equilibrium.

The horizontal axis measures p_s, which obviously cannot exceed 1. On the vertical axis we measure the net reward from holding office, θ, as well as the functions $\lambda - t(p_s)$ and $1 - t(p_s)$, which represent the payoffs for private citizens of high and low ability, respectively. Both payoff functions are increasing in p_s, as private citizens are better off if ruled by competent leaders who keep taxes low. Clearly the payoff function for type s citizens is everywhere above the payoff function for type $\overline{s}$ citizens. We assume $t(0) < 1$ to simplify the picture. In the figure we have also drawn the functions as straight lines and have assumed $\lambda - t(0) > 1 - t(1)$, but nothing hinges on these restrictions. Each value of θ is associated with one and only one equilibrium. Specifically, as θ varies along the vertical axis, the equilibrium level of p_s can be read (inversely) off the solid locus that connects the intercepts of the two private-payoff functions, the upward sloping part of the type-s private-payoff function, and the vertical line through $(1, 0)$ above the type-s private-payoff function. The rest of this section shows this result, and provides some further characterization of the equilibria corresponding to different values of θ. Let's start at the top.

If $\theta > \lambda - t(1)$, public life is more attractive than private life for everyone, irrespective of p_s. Here, the equilibrium cannot feature $p_s < 1$. Suppose it did. Then we know that $P_s = 1$ and $C_s = p_s p$, i.e., all the candidates of type s are being elected, and there are citizens of type s who are not candidate. But with $\theta > \lambda - t(1)$, and, a fortiori, $\theta > \lambda - t(p_s)$, any high-ability private citizen has an incentive to deviate and run for office with certainty of success. So, the equilibrium features $p_s = 1$. Since $p_s = 1$, $P_{\overline{s}} = 0$, and no low-skill candidate will waste ϕ on an election she has no chance of winning: $C_{\overline{s}} = 0$. High-skill citizens strictly prefer to be office holders, so the equilibrium will feature $C_s > p$.[11]

If $\lambda - t(1) > \theta$, $p_s = 1$ cannot be an equilibrium, as high-skill citizens would then strictly prefer private life, and deviate by not running for office. Consider first the range of values of θ between $\lambda - t(0)$ and $\lambda - t(1)$. An equilibrium in this range must feature $p_s < 1$, and consequently $P_s = 1$ and $C_s = p_s p$. In such an equilibrium high-ability agents must be

[11] In this equilibrium, $P_s = p/C_s$, and, if $C_s < s(1 + p)$, C_s is determined by the condition:

$$\frac{p}{C_s}(\theta) + \frac{C_s - p}{C_s}[\lambda - t(1) - \phi] = \lambda - t(1).$$

It is easy to check that C_s is increasing in θ.For $\theta = \lambda - t(1)$, $C_s = p$; as θ increases, C_s eventually reaches its maximum value, $s(1 + p)$, and remains at this value for any higher θ (and (??) holds as an inequality).

indifferent between public and private life. If public life was more attractive all high-ability citizens would want to deviate and be candidates, since they would be certain of election. Similarly, if private returns were higher than public rewards, citizens would rather not run for office. Hence, p_s is determined by the condition $\theta = \lambda - t(p_s)$, or,

$$p_s = t^{-1}(\lambda - \theta) \equiv p_s^*(\theta). \tag{2}$$

p_s^* monotonically declines as θ falls from the upper to the lower level.[12] For these values of θ, holding office pays off strictly better than being a low-skill private citizen, so that these equilibria feature an "excess supply" of candidates of type $\overline{s}$, or $C_{\overline{s}}(\theta) > (1 - p_s^*(\theta))p$. Contrary to standard intuition, in this range increases in the rewards from politics *discourage* low-quality citizens from participating into politics. What is happening is that low-quality citizens would always like to be in office, irrespective of the value of θ (as long as it is in this range). However, increases in θ increase the number of high-quality candidates, thereby lowering the chances that any one low-skill citizen will win office. This observation will be key to the path dependence result we derive below.[13]

Next, if $\lambda - t(0) > \theta \geq 1 - t(0)$, all high-quality citizens strictly prefer private life, so $C_s = 0$ and, necessarily, $p_s = 0$. With $p_s = 0$ all low-ability citizens continue to strictly prefer public office to private life, and are willing to compete to fill the p positions: $C_{\overline{s}} \geq p$. On this range the measure of candidates is increasing in θ. Increases in θ no longer affect the measure of high-skill candidates running (which remains constant at 0), but at the same time they affect the relative attractiveness of being in office relative to private life. At the bottom of the range of variation, i.e., at $\theta = 1 - t(0)$, $C_{\overline{s}} = p$.[14]

[12] Notice that $p_s^*(\lambda - t(1)) = 1$. At the other extreme of the range, $p_s^*(\lambda - t(0)) = 0$.

[13] The measure of low-skill candidates, $C_{\overline{s}}$, is determined by the condition

$$\frac{p - p_s^*(\theta)p}{C_{\overline{s}}}(\theta) + \frac{C_{\overline{s}} - (p - p_s^*(\theta)p)}{C_{\overline{s}}}[1 - t(p_s^*(\theta)) - \phi] = 1 - t(p_s^*(\theta)),$$

or $C_{\overline{s}} = p(1 - p_s^*(\theta))(\lambda - 1 + \phi)/\phi$, unless this solution exceeds the maximum number of potential candidates, in which case $C_{\overline{s}} = (1 - s)(1 + p - v)$. Hence $C_{\overline{s}}$ increases as θ falls, and ranges from 0 (when θ is at the top of this range of variation) to a maximum of $\min\{(1 - s)(1 + p - v), p(\lambda - 1 + \phi)/\phi\}$ for the lowest value of θ in this range.

[14] The measure of low-skill candidates, if interior, is determined by the condition

$$\frac{p}{C_{\overline{s}}}\theta + \frac{C_{\overline{s}} - p}{C_{\overline{s}}}[1 - t(0) - \phi] = 1 - t(0).$$

We summarize and complete the "comparative statics" implied by the discussion so far in the following

Results 1.i-1.iii. *The competence of the elected body p_s is*
(i) increasing in the official compensation w and the psychological reward π,
(ii) decreasing in the cost of campaigning ϕ,
(iii) decreasing in the opportunity cost λ;

Unlike quality, the composition of the population running for office is non-monotonic in the various parameters. For low values of θ the measure of low-skill candidates is (weakly) increasing in θ, and there are no high-skill candidates; the measure of low-skill candidates reaches a maximum that depends on the size of the cost of running (it can potentially coincide with the entire low-skill population with finite campaigning cost), and then decreases with θ when θ increases above $\lambda - t(0)$. This is because more and more high-skill candidates join the race in the latter range. Finally, for high enough θ there are only high-skill candidates.

We can further characterize the response of p_s to changes in parameters by considering the response of equilibrium quality to changes in the importance of quality itself. When $t(0)$ is very low, private life under incompetent rulers is quite hard, and this tends to encourage high-quality participation in politics. On the other hand, when t is very responsive to changes in quality, a small representation of high-quality citizens in the elected body assures sufficiently large private utility that high-quality citizens are content with private life. To turn these observations into a simple comparative static result we consider a simple special case:

Results 1.iv-1.v. *If $t(p_s) = \alpha e^{-\beta p_s}$ $(\alpha \in (0,1),\ \beta > 0)$, then it is also true that p_s is*
(iv) increasing in the incompetence of low-skill citizens $\alpha = t(0)$, and
(v) decreasing in the marginal effect of the competence of high-skill citizens β.

An additional comparative statics result follows from a straightforward extension in which the cost of campaigning ϕ (or, equivalently, the psychological benefits from office π) has a continuous (instead of dichotomous) distribution $G(\phi)$. In this model equilibrium is described by cut-off values ϕ^*_s, and $\phi^*_{\overline{s}}$, such that members of each of the two groups with campaigning costs less than the cut-off are candidates and the others are not. In an interior equilibrium,

From this $C_{\overline{s}} = \min\{(1-s)(1+p-v), p/\phi(\theta - 1 + t(0) + \phi)\}$.

where $0 < p_s < 1$, p_s and ϕ_s^* are jointly determined by the conditions

$$\pi + w - \phi_s^* = \lambda - t(p_s)$$

(the marginal individual is indifferent between private and public life), and

$$G(\phi_s^*) = \frac{p_s p}{s(1+p)}$$

(demand equals supply). It is then immediate to derive the following result:

Result 1.vi. *The competence of the elected body, p_s, is decreasing in the number of seats (per capita) p.*

Since the number of high-quality individuals seeking office is independent of the number of seats, a larger assembly implies that quality will be more diluted.[15] All the monotonicities implied by Result 1 are to be understood as weak.

Is this model successful at capturing the idea that otherwise-identical countries might experience different outcomes in the competence of their political leaders? It depends on the properties of the rewards from office. If $\pi + w$ is an exogenous constant, then the equilibrium is unique, and it is identified in Figure 1 by the intersection of the solid locus with a horizontal line through the point $(0, \theta)$. Countries with high-quality policymakers are countries that have "better" parameters, in the sense of Proposition ??. Some of these predictions are potentially testable (especially with regards to p), and we plan to pursue them in future work. We think these results are interesting in their own right, but in the remainder of this section we show that when θ is endogenous there can be multiple equilibrium levels of p_s, and that when w is endogenous there can be path dependence in the equilibrium value of p_s. Hence, countries that are identical in all respects may experience different levels of policymaking competence if they are at different equilibria or if they had different initial conditions.

3.2 Multiple Equilibria

We think it highly plausible that the psychological rewards from holding elective office depend positively on the average quality of the policymaking class, i.e., that π depends positively on

[15] A detailed treatment of this extension is available upon request. We have chosen to present the simpler model because it lends itself to the graphical representation of Figure 1.

p_s or $\pi = \pi(p_s)$. It is well known in sociology that one's social status is heavily influenced by one's profession. In turn, the social status enjoyed by a professional group depends on the *average* quality of the group itself. If a politician cares about his social status he must care about the average quality of his colleagues. An additional source of positive dependence springs from the highly collaborative (or at least interactive) nature of policymaking. Much as high-quality university professors derive direct utility benefits from interacting with good colleagues (aside from the indirect benefits associated with higher productivity from human-capital externalities), politicians might be presumed to prefer dealing with other politicians of similar type.[16]

Without loss of generality, assume that $w = \phi$, so that $\theta = \pi$. The analysis of the previous section readily implies that

Result 2. *If $\pi'(p_s) > 0$ multiple equilibria in the competence of the elected body p_s are possible.*

Essentially, there is an equilibrium for each intersection of the $\pi(p_s)$ function with the solid locus in Figure 1. Figure 2a provides an example in which $\pi(p_s)$ is linear ($\pi(p_s) = \pi_0 + \pi_1 p_s$). If $\pi_0 < \lambda - t(0)$ and $\lambda - t(1) < \pi_0 + \pi_1$, there are three equilibria. One equilibrium is $p_s = 1$, another is $p_s = 0$, and the third is given by the intersection between the $\pi(p_s)$ line and the $\lambda - t(p_s)$ curve. This last equilibrium is unstable. Figure 2b provides an example in which $\pi(p_s)$ is S-shaped, so that all three equilibria feature p_s strictly between 0 and 1. More generally, we have shown that with π endogenous there can be any (odd) number of equilibria.[17]

[16] There are also some material rewards that might be increasing in average quality. For example, many former office holders are invited to sit on corporate boards, become partners of law firms, or act as high-profile lobbyists. Again, if the political class is held in disrepute it is less likely for such practices to become widespread. On post-office financial rewards see also Alesina and Spear (1988).

[17] As we show below, our results are broadly robust to making π type-specific, i.e., to a generalization in which the rewards from office are $\pi_s(p_s)$ for type-s citizens and $\pi_{\overline{s}}(p_s)$ for type-$\overline{s}$ citizens. However, in this perfect-information world some readers might find it unappealing that the rewards depend on p_s at all: if types are perfectly observed, then financial and psychological rewards (though not "consumption" rewards) might conceivably be completely independent of other office holders' types. However, we also show below that all our basic results go through if we introduce asymmetric information on types. In this case all that voters know is p_s, while they only have a noisy signal on each individual politician's type. Hence, the dependence of

3.3 Path Dependence

Another step towards a more realistic model is to endogenize the wage component of the payoffs from holding elective office, w. We start by making explicit the cost and benefits of changes in w, and relating the model with variable w to the model of the previous sections. For simplicity, here we set $\pi = \phi$ so that $\theta = w$. Increases in w benefit office holders, whose payoff is w, but – abstracting from the indirect effect through the quality of the elective body – potentially hurt private citizens who have to pay higher taxes.[18] Denoting by $\tau(w)$ the amount of taxes that needs to be raised to pay the p office holders a salary of w, the payoff function for private citizens of type j becomes $\lambda^j - t(p_s) - \tau(w)$. Define $\theta(w)$ the function $w + \tau(w)$. It should be clear that everything we have said in the previous sub-sections about the equilibrium relationship between θ and p_s will apply now to the relationship between $\theta(w)$ and p_s. In particular, as $\theta(w)$ increases, the associated equilibrium value of p_s is unique, and it is identified by the solid locus in Figure 1, where we now measure $\theta(w)$ on the vertical axis. Clearly $\theta(w)$ is increasing in w, so as w varies the entire menu of potential equilibria is feasible.[19]

We now turn to the task of endogenizing w. The simplest way to do so is to make the model dynamic, and to assume that the wage of office holders at time t is decided – by majority voting – by the office holders at time $t-1$. The population of citizens is the same in every period, and all citizens are infinitely lived. In each period the citizen-candidate game is the one analyzed above, with the difference that agents maximize a present-discounted value of expected profits. The elective body decides on next period's wages at the end of its tenure, after the public good is provided and taxes are collected. Note that with this simple structure w_t is the only state variable. This insures that within each period – conditional on

π (or π_s) on p_s appears fully justified.

[18]We hasten to add that none of the results of this section depend on the preceived costs – in terms of higher taxes – of increasing office holders' salaries. While we model such costs explicitly for the sake of precision, everything would go through if $\tau(w) = 0$.

[19]The government-budget constraint is $taxes = f(g^*, w, p_s)$. The discussion above implies that we are assuming that f is separable: $f(g^*, w, p_s) = t(p_s) + \tau(w)$. This assumption makes the model tractable, but we think that the intuition for the conclusions of this subsection would be robust to a more general approach. Below we further assume that $\tau(0) = 0$.

w_t – the equilibrium outcome is determined exactly as indicated in the previous paragraph. In particular, higher choices for w_t lead (weakly) to higher equilibrium values of $p_{s,t}$. Hence, all that is required is to analyze the wage-setting game at the end of period t.

The elective body at time t is constituted by (at most) two types of citizens, s and $\overline{s}$. Individuals of the same type have identical expected payoff functions. Assuming away coordination problems all individuals of the same type will therefore vote for the same level of w_{t+1}. Hence, if high-ability types are in a majority in the elective body, i.e., if $p_{s,t} > \frac{1}{2}$, w_{t+1} will maximize the expected payoff of high-ability office holders. If low-ability individuals are in the majority, or $p_{s,t} < \frac{1}{2}$, the wage maximizes expected payoffs for type-$\overline{s}$ office holders. Furthermore, since tenure in office ends at the end of period t, the relevant payoff function for a time-t office holder of type j coincides with the payoff function of any citizen of type j.

It will be useful to denote by $\underline{w}$ the level below which *no* high-ability citizen is willing to run for office, i.e., the level at and below which $C_s = p_s = 0$. From the previous subsections this level is implicitly defined by $\theta(\underline{w}) = \lambda - t(0)$, or

$$\underline{w} = \lambda - t(0) - \tau(\underline{w}).$$

Similarly, define $\overline{w}$ the level of the wage at which exactly p high-ability citizens run for office, i.e., the case in which $C_s = p$ and $p_s = 1$. Again from the previous subsections $\overline{w}$ is implicitly defined by the condition

$$\overline{w} = \lambda - t(1) - \tau(\overline{w}).$$

Finally, define $\overline{\overline{w}}$ the level above which *all* high-ability citizens strictly prefer running for office, or at and above which $C_s = s(1 + p - v)$ and $p_s = 1$.[20] Clearly, $\overline{\overline{w}} > \overline{w} > \underline{w}$.

Starting with the case in which $p_{s,t} > \frac{1}{2}$, consider a choice of w_{t+1} such that $\underline{w} < w_{t+1} \leq \overline{w}$. This would imply $0 < p_{s,t+1} < 1$. We know that in this region high-ability citizens who run for office are assured of election and indifferent between holding public office and being private citizens, so the expected utility of a citizen of high ability is simply w_{t+1}. Since

[20]This is given by:

$$\frac{p}{s(1+p-v)}\overline{\overline{w}} + \left(1 - \frac{p}{s(1+p-v)}\right)(\lambda - t(1) - \tau(\overline{\overline{w}}) - \phi) = \lambda - t(1) - \tau(\overline{\overline{w}})$$

where the left-hand side is the expected payoff from being a candidate for office when every other high-ability citizen is a candidate for office, and the right-hand side is the payoff of being a private citizen.

this is increasing in w_{t+1}, $w_{t+1} < \overline{w}$ cannot be an optimal choice for next period's wage from the point of view of a high-ability majority. Now consider a choice of w_{t+1} such that $\overline{\overline{w}} \geq w_{t+1} > \overline{w}$, implying $p_{s,t+1} = 1$. Here high-ability citizens are indifferent between running for (as opposed to holding) office and being private citizens, so the expected utility of a high-ability citizen is $\lambda - t(1) - \tau(w_{t+1})$. Since this is decreasing in w_{t+1}, $w_{t+1} > \overline{w}$ cannot maximize the utility of high-ability citizens either. The perverse cases in which the preferred choice for w_{t+1} for high-ability policymakers is above $\overline{\overline{w}}$ or below $\underline{w}$ can be ruled out with mild parametric restrictions.[21]

Now suppose that $p_{s,t} < \frac{1}{2}$, so that w_{t+1} maximizes the expected utility of a low-ability citizen. Our goal is to show that low-ability citizens in the majority at time t may choose a w_{t+1} different from $\overline{w}$, the optimal choice for a high-ability majority. Hence, we limit ourselves to providing an example in which this does indeed happen. Suppose, then, that parameters are such that $C_{\overline{s}} = (1-s)(1-p-v)$ at $\underline{w}$. In other words, when the wage is $\underline{w}$, the entire low-ability population runs for office.[22] The expected utility of a low-ability citizen is then

$$\eta\underline{w} + (1-\eta)\left[1 - t(0) - \tau(\underline{w}) - \phi\right],$$

where $\eta = p/[(1-s)(1+p-v)]$ is the probability of election when all (and only) low-ability

[21]The restriction to rule out choices above $\overline{\overline{w}}$ is $\tau'(w) > p/[s(1+p-v)-p]$ for $w > \overline{\overline{w}}$ and simply says that the cost for tax payers of very high wages to politicians grows "fast enough" at high levels of the wage to more than offset the gains to the select few that make it into office. To eliminate choices below $\underline{w}$ first notice that in this range high-ability citizens' utility is maximized by setting $w = 0$. The condition for a global maximum at $\overline{w}$ is therefore $\lambda - t(1) - \tau(\overline{w}) > \lambda - t(0)$.

[22]It follows from the previous-subsections that $C_{\overline{s}}$ is (weakly) increasing in w for $w < \underline{w}$, and (weakly) decreasing for $w > \underline{w}$. Hence, if there are values of w such that $C_{\overline{s}}$ includes the entire population, $\underline{w}$ is one of these values. In terms of the parameter space, the restriction we are imposing is that $(1-s)(1+p-v) < p(\lambda - 1 + \phi)/\phi$ and use the fact that $p_s^*(\underline{w}) = 0$). If there are no such values of w, the optimal choice of w_{t+1} for low-ability citizens could still be different from $\overline{w}$, potentially leading to path dependence, although for different reasons: in that case utility at $\underline{w}$ is $1 - t(0) - \tau(\underline{w})$, which could be more than $1 - t(1) - \tau(\overline{w})$ if tax savings on wage payments are large enough. We do not emphasize this case because it has limited empirical relevance. It might appear disturbing that a (meaningful) path dependence result only emerges when all low-quality citizens run for office. We have verified, however, that in the more general model in which ϕ (or π) takes a continuum of values with distribution G the path dependence result easily emerges irrespective of whether all or only some of the low-quality citizens compete for office.

citizens run for office. None of the parametric assumptions we have imposed so far prevents this quantity from exceeding $1 - t(1) - \tau(\overline{w})$, which is a low-ability citizen's utility when elected officials' wages are set at $\overline{w}$. Hence, $\overline{w}$ cannot be an optimal choice of w_{t+1} for a low-ability majority at time t. Furthermore, choices above $\overline{w}$ are immediately ruled out by noting that in this region a low-ability citizen's utility is $1-t(1)-\tau(w)$. Hence, we conclude that the optimal wage for a low-ability majority, which we will denote by w_l, is strictly less than the optimal wage for a high-ability majority, $\overline{w}$. Finally, suppose that the equilibrium associated with w_l features a low-ability majority, i.e., $p_{s,t} < 1/2$ for $w_t = w_l$.[23]

To see how the model generates path dependence, imagine that at the time of birth of the polity, time 0, the initial wage, w_0, is selected randomly, before the first citizen-candidate game is played. It follows from the discussion above that if $p_s(w_0) > 1/2$ the first assembly will set $w_1 = \overline{w}$, with the consequence that $p_{s,1} = 1$. We would then have $w_t = \overline{w}$, $p_{s,t} = 1$ for every $t > 0$. Instead, if $p_s^*(w_0) < 1/2$, we will have $w_t = w_l$, $p_{s,t} < 1/2$ for every t. This is our

Result 3. *Path Dependence in the competence of the elected body, p_s, is possible. If there is path dependence, and $p_s(w_0) \leq 1/2$, then $p_s \in [0, 1/2]$ for every $t > 0$. If $p_s(w_0) > 1/2$, then $p_s = 1$ for every $t > 0$.*

Hence, when historical accident determines that a country's initial political leadership is composed by high-ability citizens, this "luck" tends to persist as the initial policymakers (and all their successors) set rewards so as to insure that subsequent participants in the political process continue to be of high quality. Instead, if initially policymakers are of low quality, then this bad luck tends to persist, as low-quality policymakers set rewards so as to discourage competition for office from high-quality ones. In Appendix 1 we study a special case in detail.

[23]Notice that w_l is not necessarily set to maximize the period $t+1$ payoff function of low-ability citizens. For, define the wage that maximizes one-period-ahead payoffs $\hat{w}$, and suppose that $p_s(\hat{w}) > 1/2$ (as it may well be, all we know so far is that $\hat{w} < \overline{w}$, and hence $p_s(\hat{w}) < p_s(\overline{w}) = 1$.) Then the low-quality majority faces a trade-off in which maximizing one-period-ahead payoffs leads to a permanent loss of majority – i.e., $w_\tau = \overline{w}$ for every $\tau \geq t+2$. In this case, they might choose to set $w_l < \hat{w}$ in order to preserve their majority. Of course, if $p_s(\hat{w}) \leq 1/2$ then they will set $w_l = \hat{w}$.

3.4 Extensions

One appealing feature of the framework developed above is that it does not invoke uncertainty or asymmetric information to generate equilibria in which voters elect low-ability politicians. Rather, voters have no illusions as to the intrinsic qualities of the candidates, but elect them because they are "rationed" in high-quality candidates. In this subsection, however, we briefly check that our results are robust to the addition of asymmetric information. Also, we have assumed that market skills and policy-making competence are perfectly correlated. We briefly discuss the case in which the correlation is imperfect. Finally, we analyze what happens when rewards from office are type specific. Our results are robust to all these extensions.

Assume that a candidate's type is imperfectly observable. Citizens receive a signal about other people's types. Specifically, assume that if a candidate is of type i a fraction $f > 0.5$ of the population believes that she is of type i, and the remaining $1 - f$ have the wrong belief. Consider then a situation in which $C_s > 0$, and $C_{\overline{s}} > 0$. As before, each candidate will vote for herself. How will non-candidates vote? Clearly each non-candidate will give her vote to a candidate chosen randomly from the set she believes to be of high quality. Each high-quality candidate is believed to be such by a fraction f of the non-candidates, and will therefore receive $f * 100$ percent of the votes. Each low-quality candidate will receive only $(1-f) * 100$ percent of the votes. Type-s candidates will therefore always receive more votes than $\overline{s}$ types. Hence, if $C_s \geq p$ we have $p_s = 1$ and $C_{\overline{s}} = 0$, and if $C_s < p$ all the high-quality candidates are elected for sure. This means that the analysis is identical to the one with perfect information.

Suppose now that market productivity λ^i and competence when making economic-policy decisions were only imperfectly correlated, so that there can be some individuals with low market potential but high return in office. Under perfect information this group of people – provided it is not too small – would form a perfect group of candidates: they require little incentive to seek office, and they perform well once there. A "Bad-Politicians" equilibrium would be difficult to sustain. However, if market and policy-making abilities are allowed to differ, the assumptions on information become crucial. To see this, consider the more realistic case in which voters observe the market productivity of a candidate (what she did before running for office) but do not observe – at the moment of voting – her policy-making ability. Then, as long as market and policy-making skills are positively correlated, voters will always choose candidates with high private ability over those with low private ability. This broadly restores the conclusions of the previous subsections, with the qualification that $p_s = 1$ can no longer occur, as a fraction of the elected body will always be constituted by high-private but low-public ability citizens.

Another robustness check involves the case in which the rewards from office differ according to the office holder's type. Specifically, suppose that competent office holders receive rewards π_s, while incompetent ones receive $\pi_{\overline{s}}$, with π_s and $\pi_{\overline{s}}$ both potentially functions of p_s. By a line of reasoning similar to the one developed above one sees that the locus of potential equilibria is once again limited to the solid collection of lines and segments in Figure 1, with the vertical coordinate to be interpreted as a value of π_s. Differently from the common-π case, however, not all intersections of the π_s function and the solid locus are equilibria. Specifically, for intersections involving $p_s < 1$, equilibrium obtains if and only if type-$\overline{s}$ citizens weakly prefer public office to private life, i.e., if $\pi_{\overline{s}}(p_s) \geq 1 - t(p_s)$. If not, the positions left available for office cannot be filled. Note that this requirement is always fulfilled if $\pi_{\overline{s}} \geq \pi_s$, but in general it can be fulfilled even if $\pi_{\overline{s}} < \pi_s$. We conclude that our basic results survive the extension in which rewards from office are type specific.

4 Corruption

A set of results analogous to the ones we have developed for the model of policy-making competence can be derived in the context of a model of corruption. As before, we assume that there are two types of citizens, honest, or h, and dishonest, or $\overline{h}$. Type h is present in the population with measure $h(1+p)$ and type $\overline{h}$ with measure $(1-h)(1+p)$. We denote by p_h the fraction of office holders who are of type h. As before, we assume $1-v > h(1+p-v) > p$. All citizens have the same ability. As long as a measure p of political offices are filled, and the office holders provide the indispensable public good, private citizens enjoy a gross income of λ. If the public good is not provided, private income is 0. Since competence is the same for all policymakers, we normalize the taxes required to pay for the public good to 0.

The basic difference from the model of competence is that with corruption the payoffs from holding public office are endogenous, and depend on a decentralized decision by each individual office holder. We assume that the payoff function for a politician i of type j is $\pi + w + \sigma^j b^i$. $\pi + w$ is – as before – the reward that is exogenous to the individual policymaker (collected as long as $g = g^*$). b^i measures the expected resources obtained by harassing citizens and requiring kickbacks and bribes. σ^j is the exogenous parameter by which we introduce heterogeneity in this model. Our assumption is that $\sigma^h = 0$, while $\sigma^{\overline{h}} = 1$. In other words, type-$h$ citizens are high-quality because they are *honest*: they derive no utility benefit from collecting bribes. Instead, office holders of type $\overline{h}$ are dishonest: they derive the same utility benefits from resources obtained by legitimate and illegitimate means.[24]

A tractable way to analyze the decentralized decision of politicians is to assume that each citizen i must interact with one office holder, and the office holder can exploit this interaction to extract bribes. If citizen i is required to pay a bribe b_i his utility is then: $\lambda - b_i$. Denote the maximum bribe a politician can collect from a citizen by $\bar{b}$. To interpret this maximum, one can think of a politician as facing a "Laffer curve" by which the returns from bribe-taking are first increasing and then decreasing. Once in office, the optimal bribe taking of a type h politician is 0.[25] As long as π does not depend on the bribe-taking activity of any individual office holder, instead, a dishonest office holder will always maximize her revenues, thereby setting $b_i = \bar{b}$ for each citizen i he gets to victimize. Then a private citizen always prefers to be paired with a honest politician, and since the chance of this happening is increasing in p_h, non-candidate voters will always give their preference, if given a chance, to honest candidates. We conclude that, as in the previous section, equilibria with $p_h < 1$ must be associated with $P_h = 1$ and $C_h = p_h p$, and equilibria with $p_h = 1$ must feature $P_{\overline{h}} = C_{\overline{h}} = 0$. Note that each politician expects to engage in $1/p$ interactions. Hence, $b^i = \overline{b}/p$.

The model is summarized by Figure 3. The upward sloping line is the function $p_h\lambda + (1 - p_h)(\lambda - \bar{b})$, which represents the (common) expected utility of private citizens as a function of the fraction of office holders who are honest.[26] On the vertical axis we measure the reward

[24] The qualitative results don't change if one changes the assumptions on the parameter σ^j, as long as $\sigma^h < \sigma^{\overline{h}}$.

[25] We are implicitly assuming that bribe collection involves a transaction cost ε to be borne by the politician.

[26] It is easy to extend this model to one in which dishonest citizens prefer dishonest office-holders. As long as the difference between a dishonest and a honest citizen's utilities is small relative to the difference between a dishonest and a honest office-holder's utility, nothing changes in our results. We do not emphasize this extension because we do not think it is very realistic. If the number of voters who would potentially prefer

$\theta = \pi + w - \phi$. The solid locus describes the equilibrium value of p_h as θ varies. If θ is above λ then honest citizens strictly prefer to be in office, so $p_h = 1$. If $\lambda - \bar{b} \leq \theta < \lambda$ the corresponding equilibrium value of p_h obtains when honest citizens are indifferent between private life and public office, namely when:

$$p_h = \frac{\theta + \bar{b} - \lambda}{\bar{b}} \equiv p_h^*(\theta). \tag{3}$$

Since all the non-candidates prefer to vote for a honest politician, all the honest citizens who are candidates get elected, so exactly $p_h p$ honest citizens are candidate. When θ falls below $\lambda - \bar{b}$ the equilibrium features $p_h = 0$.[27]

The structure of equilibria is therefore the same as in the model of competence, with a (weakly) monotone relationship between rewards from office θ and policymakers' quality p_h. If θ is an exogenous constant the equilibrium is unique. The relevant comparative statics are summarized by the following proposition.

Results 1'.i-1'.v. *The honesty of the elected body p_h is*
(i) increasing in the official compensation w and in the psychological reward π,
(ii) decreasing in the cost of campaigning ϕ,
(iii) decreasing in the opportunity cost λ,
(iv) increasing in the cost of corruption $\bar{b}$,
(v) decreasing in the number of seats (per capita) p.

Suppose now that the social status and "legitimate" private financial rewards from holding office depend on the perceived general honesty of politicians. Formally, call δ_h the fraction of office holders who *do not* ask bribes, and assume that $\pi = \pi(\delta_h)$, $\pi'(\delta_h) > 0$. Note that whatever the value of δ_h, a dishonest office holder will always set $b = \bar{b}$ (thereby confirming our conjecture), because her marginal impact on δ_h is 0. Hence, $\delta_h = p_h$, and we could represent π as an upward sloping function in Figure 3. Then we have

a dishonest office-holder is large enough to matter for electoral outcomes, then it is likely that competition among these dishonest citiznes will result in office-holders capturing all the rents from the corruption activity. But this contradicts the assumption that dishonest citizens prefer dishonest policymakers. For discussions of the industrial organization of corruption see Rose-Ackerman (1978) and Shleifer and Vishny (1993).

[27] In analogy with the previous section, we assume for simplicity that $\theta + \bar{b}/p \geq \lambda - \bar{b}$ always.

Result 2'. *Multiple equilibria in the honesty of the elected body p_h are possible.*

Equilibria correspond to intersections of the function $\pi(\cdot)$ with the function representing private payoffs. When the social status of politicians is low because most politicians are corrupt, then few honest individuals are willing to participate in politics.

One might have thought that an upward sloping π function would have been sufficient to obtain multiple equilibria in corruption even without heterogeneity in honesty. In this model this is not true. If politicians are all potentially corrupt, they will all individually set $b^i = \bar{b}/p$, irrespective of the amount of bribes being collected in the economy. The key insight is that honest behavior on the part of a large number of politicians induces free riding behavior in each individual member of the elite, and it therefore leads to underprovision of honesty. This is not to say that one cannot write models of multiplicity of equilibria in corruption in which there is no heterogeneity in honesty – in fact, we believe it can be done [28] – but simply that a reward function that is increasing in δ_h is not enough.

When the model is made dynamic and w_t is endogenous there is again an incentive for dishonest policymakers to set a low wage in order to discourage honest candidates from running for office. So let us again set $\pi = \phi$, and consequently $\theta = w$. Taking taxes into account, the payoff function for private citizens is $\lambda - \tau(w) - (1 - p_h)\bar{b}$. Continuing to define $\theta(w)$ the function $w + \tau(w)$, the locus of possible equilibria of the within-period game is still given by Figure 3, with $\theta(w)$ on the vertical axis. Once again, a high-quality majority will maximize the welfare of high-quality citizens, while a low-quality majority will care about low-quality citizens. We also re-define the threshold wages $\underline{w}$ and $\overline{w}$ appropriately for the corruption model:

$$\underline{w} = \lambda - \tau(\underline{w}) - \bar{b}.$$

$$\overline{w} = \lambda - \tau(\overline{w}).$$

It should be clear that a high-quality majority at time t will always set $w_{t+1} = \overline{w}$. The argument is the same used in Section 3.3. But again it is possible to construct an example in which a low-quality majority would choose a different value. In particular, if $C_{\bar{h}}^{-} = (1-h)(1+p-v)$ at $\underline{w}$, the expected payoff for low-quality citizens is $\eta(\underline{w}+\bar{b}/p) + (1-\eta)(\lambda-\bar{b}-\tau(\underline{w})-\phi)$,

[28] Cadot (1987), Andvig and Moene (1990), and Tirole (1996) (who provides an instance of path dependence) obtain multiple equilibria in models of bureaucratic corruption withn homogeneous agents.

which may well exceed $\lambda - \tau(\overline{w})$, i.e., the payoff associated with a choice of $\overline{w}$. Hence $\bar{w}$ is not the choice of a corrupt majority. This makes it possible for path dependence to set in, and allows us to state

Result 3'. *Path Dependence in the honesty of the elected body, p_h, is possible. If there is path dependence, and $p_h(w_0) \leq 1/2$, then $p_h \in [0, 1/2]$ for every $t > 0$. If $p_h(w_0) > 1/2$, then $p_h = 1$ for every $t > 0$.*

5 Competence and Honesty Together

This section extends the results of the previous two sections to the case in which the population is heterogeneous in both ability and honesty. We assume that ability and honesty are arbitrarily correlated in the population. The population continues to have measure $1 + p$, with p the measure holding office. A proportion s of the population has high ability and the rest has low ability, in the sense of Section 3. In each ability group, a fraction h is honest and the rest is dishonest, in the sense of Section 4. A fraction p_{hs} of the office holders has high ability and is honest. A fraction $p_{h\overline{s}}$ is honest but of low ability. A fraction $p_{\overline{h}s}$ is dishonest and skilled, and a fraction $p_{\overline{h}\overline{s}}$ is dishonest and has low ability. We assume $hs(1 + p) > p$, $(1-h)s(1+p) > p$, $h(1-s)(1+p) > p$, and $(1-h)(1-s)(1+p) > p$ so that $p_{hs} = 1$, $p_{h\overline{s}} = 1$, $p_{\overline{h}s} = 1$ and $p_{\overline{h}\overline{s}} = 1$ are all feasible.

Define $p_h \equiv p_{hs} + p_{h\overline{s}}$ the fraction of politicians who are honest and $p_s = p_{hs} + p_{\overline{h}s}$ the fraction with high skill. Clearly both of these quantities have a maximum at 1, and they are both 1 only when all politicians are of type hs. The utility experienced by a private citizen i is increasing in her ability λ^i, in the fraction of office holders who have high ability, and in the fraction who are honest:

$$U^i = \lambda^i - t(p_s) - (1 - p_h)\overline{b}. \tag{4}$$

The utility experienced by an elected public officer who is honest (i.e., of type hj) is $\theta = \pi + w - \phi$, which we treat as outside of her control, albeit potentially endogenous. Because π is likely to depend on (p_s, p_h), we will write $\theta(p_s, p_h)$. The utility experienced by an elected public officer who is dishonest (of type $\overline{h}j$) is $\theta + \overline{b}/p > \theta$.

Now consider the space (p_h, p_s). The utility functions U^i can be represented in this space by indifference curves, one set for each of the two skill types. These indifference curves are downward sloping and, if $t(p_s)$ is convex, they are convex too (the linear and concave cases lead to similar results). We also note that the indifference curves of skilled and honest citizens coincide with those of skilled and dishonest; so do the indifference curves of unskilled citizens. Notice that the indifference curves of skilled and unskilled are parallel. Honest citizens will be indifferent between public and private life if

$$\theta(p_h, p_s) = \lambda^i - t(p_s) - (1 - p_h)\bar{b}. \tag{5}$$

This equation defines, in the (p_h, p_s) space, a "occupational indifference curve" (henceforth OIC), which indicates the locus of pairs (p_h, p_s) such that citizen i is indifferent between private and political life. For now we impose no restrictions on these OICs. Note that, in the special case in which θ is a constant, the OICs exactly overlay the utility indifference curves described in the previous paragraph: i.e., for each level of θ the OIC exactly coincides with the utility indifference curve (UIC) corresponding to a level of utility θ. OICs for dishonest individuals can be analogously introduced as the locus satisfying:

$$\theta(p_h, p_s) + \bar{b} = \lambda^i - t(p_s) - (1 - p_h)\bar{b}. \tag{6}$$

For pairs (p_h, p_s) on one side of her OIC a citizen prefers to be a office holder, while for points on the other side she prefers to be a private citizen.

Clearly there are four OICs: for honest and competent citizens (hs), dishonest but competent $(\overline{h}s)$, honest but incompetent $(h\overline{s})$, and dishonest and incompetent $(\overline{hs})$. A crucial property of the two-dimensional model is that these OICs do not intersect. For by now familiar reasons, honest-skilled individuals have the most to lose and the least to gain from political careers, so the region of the space (p_h, p_s) in which they prefer private life must be the largest. Whenever (p_h, p_s) are such that an hs type (weakly) prefers to be in office, then all other types strictly prefer to be in office. The relative sizes of the regions in which types $\overline{h}s$ and $h\overline{s}$ prefer public office is in general ambiguous. Assume, to fix ideas, that $\bar{b}/p > \lambda - 1$ (very little changes in the alternative scenario). Then, whenever (p_h, p_s) is such that $h\overline{s}$ individuals (weakly) prefer to hold office then all $\overline{h}s$ and $\overline{hs}$ individuals strictly prefer to hold public office. Finally, whenever $\overline{h}s$ types prefer office, so do $\overline{hs}$. $\overline{hs}$ citizens prefer private life for the smallest set of values of (p_h, p_s).

Some equilibrium properties are immediate. First, non-candidate voters strictly prefer candidates of type hs to all other types. Hence, in any equilibrium featuring $p_{hs} < 1$ we must have (extending the notation from the previous sections) $P_{hs} = 1$ and $C_{hs} = p_{hs}p$. Similarly, if $p_{hs} = 1$ we must have $P_{ij} = C_{ij} = 0$, $\forall ij \neq hs$. Also, candidates of type $\overline{hs}$ will receive only their own vote whenever candidates of other types are in the running.

Figure 4 depicts the (p_h, p_s) plane. The vertical and horizontal lines through the point $(1, 1)$ delimit the feasible set (the point $(1, 1)$ is reached when $p_{hs} = 1$). The figure also depicts the line $p_s + p_h = 1$, to which we will refer to as the "diagonal." The interpretation of this line is to characterize the feasible set when $p_{hs} = 0$, i.e., when any increase in honesty must be "paid" with a loss of competence. In other words, the line shows the best the economy can do when its best citizens are not in politics. The figure also shows a map of indifference curves, under the assumption that these have slope steeper than 45 degrees when they hit the top side of the feasible set and slope less than 45 degrees when they hit the right side of the set (the two alternative cases can be easily dealt with along the same lines we'll use here). Then each UIC has one point at which its slope is -45 degrees. Figure 4 shows the curve that connects all these points, called the 45 curve. The 45 curve is continuous and upward sloping. We claim that the set of potential equilibria is restricted to the solid locus in the figure, namely the point $(1, 1)$, the part of the 45 curve to the right of the diagonal, the part of the diagonal to the left of the 45 curve, and the vertical axis.[29] We prove this result in Appendix 2.

More specifically, we prove that the model features an equilibrium for any intersection of the hs OIC with the 45 curve above the diagonal, any intersection of the $h\overline{s}$ OIC with the diagonal above the 45 curve, and any intersection of the $\overline{h}s$ OIC with the vertical axis. In addition, there is an equilibrium at $(1, 1)$ if this point lies "below" the hs OIC. Also $(0, 0)$ is an equilibrium if it lies "above" the $\overline{h}s$ OIC – i.e., if at this point these individuals strictly prefer private life to public office – and "below" the OIC for citizens of type $\overline{hs}$.

[29] If $\bar{b}/p < \lambda - 1$ then the set of potential equilibira is given by the point $(1, 1)$, the part of the 45 curve to the right of the diagonal, the part of the diagonal to the right of the 45 curve, and the horizontal axis.

Given the above characterization the model is consistent with any number of equilibria, from 0 to infinity, depending on the shape and position of the OICs of the various types. As in the previous two models, if θ is an exogenous constant the equilibrium is always unique. For, each of the OICs of the three types endowed with quality intersects the relevant portion of the solid locus in Figure 4 at most once, and intersection by one precludes intersection by the other two. Furthermore, whenever there is an equilibrium strictly within the feasible set, the points $(1, 1)$ and $(0, 0)$ cannot be equilibria.

The comparative statics are completely in line with Results 1 and 1' in the upward sloping part of the equilibrium locus. Here honesty and competence are positively correlated. Interestingly, on the other hand, in the downward sloping segment we obtain some new predictions. In this region a local increase in θ leads to an increase in honesty (p_h), but a *fall* in competence (p_s). The intuition is that in such equilibria voters are constrained in honesty, but not in competence. The convexity of the indifference curve says that voters would prefer to move down and to the right on the diagonal. Citizens of type $s\overline{h}$ are certain of election and indifferent between public and private life, and citizens of type sh strictly prefer private life. An increase in θ increases the measure of $h\overline{s}$ (but not hs) candidates, allowing voters to replace some $\overline{h}s$ with $h\overline{s}$ office holders. Similarly, in this region an increase in $\overline{b}$ will bring about increased honesty accompanied by reduced competence. Always in this region, a paradoxical result is that an increase in the incompetence of low-ability citizens, as measured by $t(0)$, leads to a decline in competence. The intuition is that increased incompetence increases type $h\overline{s}$ citizens' desire to be in office (to avoid the consequences of their own ineptitude), and this shifts their OIC to the right, leading once again to an increase in p_h accompanied by a fall in p_s. By a similar paradox, always in this downward sloping region, equilibrium competence increases if the skilfulness of high-ability citizens at lowering taxes increases. More generally, along this downward sloping segment honesty and competence are negatively correlated.

On the vertical segment of the equilibrium locus the elected body is formed exclusively by citizens of types $\overline{hs}$ and $\overline{h}s$. Here local increases in θ have the standard effect of increasing quality (p_s goes up, p_h is unchanged). Changes in λ or in the parameters of $t(\cdot)$ have the same effects as in Result 1. More interestingly, an increase in the cost of corruption $\overline{b}$ makes holding office more appealing to $\overline{h}s$ and shifts their OIC upward. As a result, voters can replace some $\overline{hs}$ with some $\overline{h}s$ policymaker, so that p_s increases while p_h does not change (though the "corruption bill" increases due to the increase in $\overline{b}$). In this region competence and honesty are uncorrelated.

Even in the two-dimensional case multiplicity of equilibria requires that θ is endogenous, and an increasing function of p_h and p_s. Recall that in this case it is no longer true that the OICs exactly lie over some UICs. In fact, there is no restriction whatsoever on the shape of the OICs: they could be decreasing, increasing, non-monotonic, and even backward bending. In this case, if the OIC for the hs has upward sloping portions, it might well intersect the segment of the 45 curve above the diagonal more than once. If the OIC for the $h\overline{s}$ has downward sloping portions, it might well intersect the segment of the diagonal above the 45 curve more than once. The OIC for the $\overline{h}s$ might well hit the vertical axis more than once also. The key conclusion is, therefore, that it is perfectly possible for otherwise identical countries to be on different equilibria and to find no cross-country correlation between honesty and ability.[30]

6 Conclusions

We have investigated the mechanisms that lead to the selection of citizens of varying quality into political life. Countries may find themselves stuck in bad equilibria such that high-quality citizens avoid public office because so do other high-quality citizens. Also, countries may experience persistent low quality of the policymaking class, whereby low-quality policymakers in one period set up next period's incentives so as to keep high-quality ones from seeking office. As a result, otherwise identical countries can experience different average levels of competence and/or honesty of the political class.

[30] We have not formally investigated the case of endogenous w, but it seems to us that – once again – policymakers with relatively lower quality have an incentive to discourage participation by candidates of relatively higher quality. Hence, path dependence should again be a possibility. Additional sources of path dependence may arise if, as seems realistic, corruption costs are higher for rich (high-ability) citizens than for poor (low-ability) ones. In particular, low-skill citizens will be extremely averse to paying high salaries to office holders (since they are not affected by corruption) whereas high-skill citizens will be willing to pay high salaries to stem corruption. Low- (high-) ability majorities would then choose low (high) wages.

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Appendix 1: Path Dependence in the Linear Case

This section studies in greater detail the example of path dependence of Section 3.3 for the special case in which

$$t(p_s) = \beta - \gamma p_s \tag{7}$$

and

$$\tau(w) = \delta w. \tag{8}$$

In this case we have (recall that we have normalized $\pi = \phi$)

$$\overline{w} = \lambda - (\beta - \gamma) - \delta \overline{w} = \frac{\lambda - \beta + \gamma}{1 + \delta}$$

and

$$\underline{w} = \lambda - \beta - \delta \underline{w} = \frac{\lambda - \beta}{1 + \delta}$$

low-ability citizens' expected utility when $w = \overline{w}$ is

$$U_{\overline{s}}(\overline{w}) = 1 - \beta + \gamma - \delta \frac{\lambda - \beta + \gamma}{1 + \delta} = \frac{1 + \delta(1 - \lambda) - \beta + \gamma}{1 + \delta}.$$

As discussed in Section 3.3, under the assumption that $\eta(\lambda - 1 + \phi)/\phi > 1$ all low-ability citizens run for office at $\underline{w}$. Hence, their expected utility is

$$\begin{aligned} U_{\overline{s}}(\underline{w}) &= \eta \frac{\lambda - \beta}{1 + \delta} + (1 - \eta) \left(1 - \beta - \delta \frac{\lambda - \beta}{1 + \delta} - \phi \right) \\ &= \frac{1 + \delta(1 - \lambda) - \beta + \eta(1 + \delta)(\lambda - 1 + \phi) - (1 + \delta)\phi}{1 + \delta}. \end{aligned}$$

Now suppose that $U_{\overline{s}}(\overline{w}) < U_{\overline{s}}(\underline{w})$, or

$$\eta(1 + \delta)(\lambda - 1 + \phi) - (1 + \delta)\phi > \gamma \tag{9}$$

which is certainly possible. Notice that the condition is more likely to be satisfied if η is large (a large probability of election when competing with only low-skill candidates makes the competition more worthwhile), if λ is large (a large λ implies a large $\underline{w}$, so being in office is more valuable – we are assuming that δ is small, which is likely), and if ϕ is small (obvious). It is less likely to be satisfied if γ is large (as in this case it is very valuable to have good politicians in office in case of defeat at the election).

Suppose then that the above condition is satisfied, and suppose that the wage is set to maximize the per-period utility of low-ability citizens. We can show that – if δ is sufficiently small – the wage will then be (permanently) set at $\underline{w}$. To the left of $\underline{w}$ low-skill citizens' utility is $\eta w + (1-\eta)(1-\beta-\delta w)$, which is increasing in w for δ small. To the right of $\overline{w}$ their utility is $1-\beta+\gamma-\delta w$, which is decreasing in w. Hence, the optimal choice is in the interval $[\underline{w},\overline{w})$. On this interval, expected utility *as long as all are running* is

$$U_{\overline{s}}(w) = \eta(1-p_s)w + [1-\eta(1-p_s)]\,[1-\beta+\gamma p_s-\delta w-\phi].$$

Now notice that on this interval we have $w = \lambda - t(p_s) - \tau(w)$, which becomes (using (7) and (8))

$$p_s = \frac{1}{\gamma}[(1+\delta)w+\beta-\lambda].$$

Substituting and simplifying we then have

$$U_{\overline{s}}(w) = w - \left[1-\eta+\eta\frac{1}{\gamma}[(1+\delta)w+\beta-\lambda]\right](\lambda-1+\phi)$$

which is linear in w. The slope of this function is:

$$1-\eta\frac{1}{\gamma}(1+\delta)(\lambda-1+\phi)$$

which has the same sign as

$$\gamma-\eta(1+\delta)(\lambda-1+\phi)$$

which is negative because of restriction (9).

Intuitively, restriction (9) says that low-ability citizens prefer the equilibrium associated with $\underline{w}$ to the one associated with $\overline{w}$. In turn, the latter must be strictly better than the situation in which the wage is $\overline{w}$ and all low-quality citizens run for office. But since utility – conditional on everybody running – is linear, if the slope was positive we would have a contradiction.

Since the slope of the objective function is negative on $[\underline{w},\overline{w})$ the optimal choice is $\underline{w}$. Since here $p_s = 0$, we have path dependence.

Appendix 2: Analysis of two-dimensional case.

Let us first discuss candidate equilibria above the diagonal, such as, for example, point (p_h^*, p_s^*) in Figure 4. First, for this to be an equilibrium it must necessarily feature $p_{hs} > 0$, as points in this region are unattainable without hs types in office. Then, the OIC for hs types would pass for this point, as an equilibrium (other than $(1,1)$) in this region requires these types to be certain of election and therefore indifferent between public and private jobs. But if the hs types are indifferent between private and public jobs then all other types strictly prefer being office holders. Given this strict preference, the point under consideration can be an equilibrium only if such types are uncertain of election. In particular, the measure of candidates of these two types will be determined by a condition stating that – given the probability of being elected (itself a function of the measure of candidates) and the cost of running ϕ – such individuals strictly prefer or are indifferent between running for office or not. In other words, there is "excess supply" of $h\overline{s}$ and $\overline{h}s$ types. In turn, this implies that there cannot be citizens of type $\overline{hs}$ holding office. Given our assumption of conditionally sincere voting, non-candidates will always vote in a way that all positions are filled by candidates with *at least* one quality. For example, there cannot be an equilibrium in which all non-candidates vote for types hs, and all other types have therefore equal probability of being elected. For, in this case, some of the non-candidates have a dominating voting deviation in which instead of voting for an hs type they vote for a $\overline{h}s$ or a $h\overline{s}$ type.

In summary, any candidate equilibrium above the diagonal features $p_{\overline{hs}} = P_{\overline{hs}} = C_{\overline{hs}} = 0$. Then, point (p_h^*, p_s^*) is supported by a unique combination of shares of citizens of the various types holding office. For a point (p_h^*, p_s^*) this combination is the solution to the system of three equations in three unknowns $p_{hs} + p_{h\overline{s}} = p_h^*$, $p_{hs} + p_{\overline{h}s} = p_s^*$, and $p_{hs} + p_{h\overline{s}} + p_{\overline{h}s} = 1$.

We can now argue that if (p_h^*, p_s^*) is outside of the 45 curve it cannot be part of an equilibrium. Recall that outside of the 45 curve the UICs have slope different from -45 degrees. Suppose it is steeper. Then there must necessarily be at least one non-candidate who could deviate from his voting strategy and transfer his vote from a winning candidate of type $\overline{h}s$ to a losing candidate of type $h\overline{s}$. Should this deviation prove pivotal, this voter would have moved the equilibrium down and to the right along a -45 degree line. But such a move would determine an increase in utility for the voter, as it would take him to a higher indifference curve. Hence, this voting deviation is profitable (in the conditionally sincere sense) and the equilibrium is broken. Of course, if at a point above the diagonal the indifference curve is flatter than -45 degrees, the equilibrium breaking deviation is to vote for a candidate of type $h\overline{s}$ over a candidate of type $\overline{h}s$.

Now let us focus on candidate equilibria below the diagonal. For such a point to be an equilibrium, at least one of the three types having at least one quality must strictly prefer to hold office. If none did, then types hs and $h\overline{s}$ would for sure strictly prefer private life. But then no point with $p_h > 0$ would be feasible. This strict preference for office implies that at least one of the three desirable types is in "excess supply," in the sense that some of the candidates of this type do not get elected. But at the same time we have $p_h + p_s < 1$, as we are below the diagonal, so there must be some $\overline{hs}$ types in office. This is inconsistent with our equilibrium concept as voters would then deviate in such a way to replace some of the $\overline{hs}$ office holders with candidates of more desirable type.

Next, we consider points on the diagonal to the right of the 45 line. If a point in this region were an equilibrium, and it featured hs types in office, then it would also have to feature some $\overline{hs}$ in office, otherwise the shares of the four types holding office could not add up to 1. But if some hs citizen is in office then types $\overline{h}s$ and $h\overline{s}$ must strictly prefer to hold office, so voters once again have a dominating conditionally sincere deviation. Hence, this equilibrium could never feature $p_{hs} > 0$, and since we must have $p_h + p_s = 1$ this means there can be no $\overline{hs}$ types in office. Next note that for this to be an equilibrium, citizens of type $h\overline{s}$ must weakly prefer being office holders (otherwise $p_h = 0$), which implies that citizens of type $\overline{h}s$ strictly prefer to hold public office (recall our assumption on the ranking of OICs). Hence, candidates of type $\overline{h}s$ are in excess supply, and voters have access to a voting deviation moving up and to the left on the diagonal. By definition of the 45 curve such a deviation dominates in "as if pivotal" sense the point under consideration, and this cannot be an equilibrium. A very similar argument can be used to rule out points on the horizontal axis, where we have $p_s = 0$, the $\overline{h}s$ types have a strict preference for holding office, and the UIC has slope less than 45 degrees.

Up to now we have eliminated all points not on the solid locus in Figure 4. We now discuss the conditions under which points on the solid locus are equilibria. Points on the 45 curve above the diagonal are equilibria if and only if they also lie on the OIC of hs types. If they do not (only if) then either the hs types strictly prefer office (in which case we would jump to $(1,1)$), or they strictly prefer private life (in which case the point is unfeasible). If they do (if) citizens of type hs are indifferent between holding office and living private lives, and those who are candidates are all elected and have no incentive to deviate. The other two "one-quality" types strictly prefer office and are in excess supply: their participation to the elections determined by the condition that – given the probability of election and the cost of running – they weakly prefer to be candidates. Citizens of type $\overline{hs}$ are non-candidates. And non-candidates have no dominating conditionally sincere voting deviation as the indifference curve lies entirely above the 45 degree line through this point.

Consider now the diagonal above the 45 curve. The claim is that points in this region are equilibria if and only if they also lie on the OIC of type $h\overline{s}$ citizens. By the same argument used for the section of the diagonal below the 45 curve, equilibria on this locus must feature $p_{hs} = p_{\overline{hs}} = 0$. Then we must have that citizens $h\overline{s}$ weakly prefer being in office (otherwise $p_h = 0$), which implies that citizens $\overline{h}s$ have a strict preference for public service. Now if the $h\overline{s}$'s preference were strict, so that candidates of this type were in excess supply, then a voting deviation down and to the right on the diagonal would be feasible. But by definition of the 45 curve such a deviation weakly dominates the point under consideration. This shows that $h\overline{s}$ citizens must be indifferent between private and public life, i.e., the only if part of our claim. Now if the $h\overline{s}$ are exactly indifferent between private and public life the number of candidates is equal to the number of elected individuals of this type, and a voting deviation down and to the right (the only one attractive) is unfeasible. This proves the if part of the claim.

We are left with the vertical axis. Points on the vertical axis are equilibria if and only if they also lie on the OIC of citizens of type $\overline{h}s$. If they are above it they are unfeasible, as no person of high ability would agree to stay in office. If they are below it, then $\overline{h}s$ candidates would be in excess supply, and it would be possible to replace some of the $\overline{h}s$ office holders (who necessarily hold office in this region). On points on the $\overline{h}s$'s OIC, instead, the number of $\overline{h}s$ candidates is equal to the number of $\overline{h}s$ winners. The other types with at least one quality strictly prefer private life (and are not candidate) and the types with no quality are rationed on political jobs. No dominating conditionally sincere voting deviation exists.

Figure 1

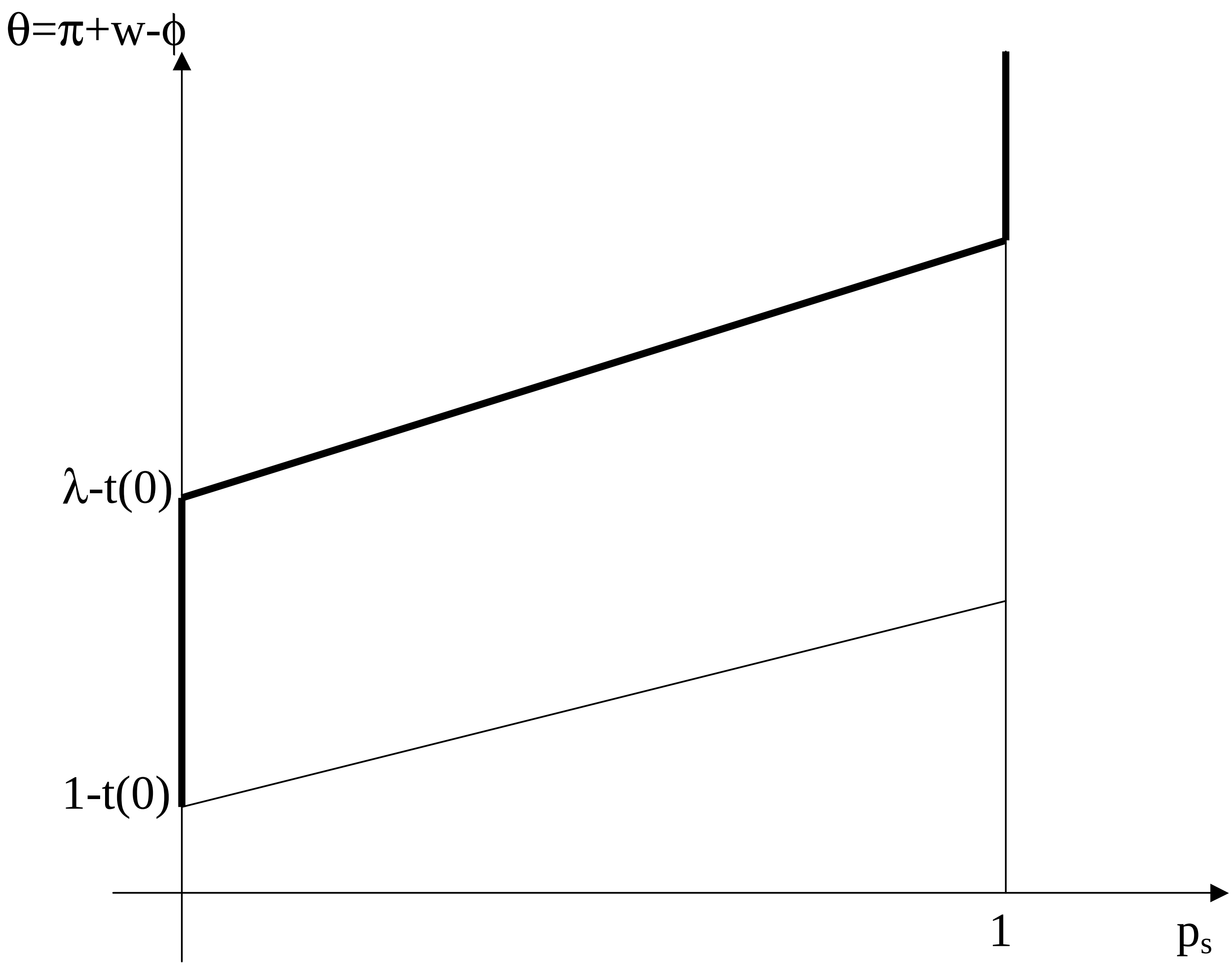


Figure 2a

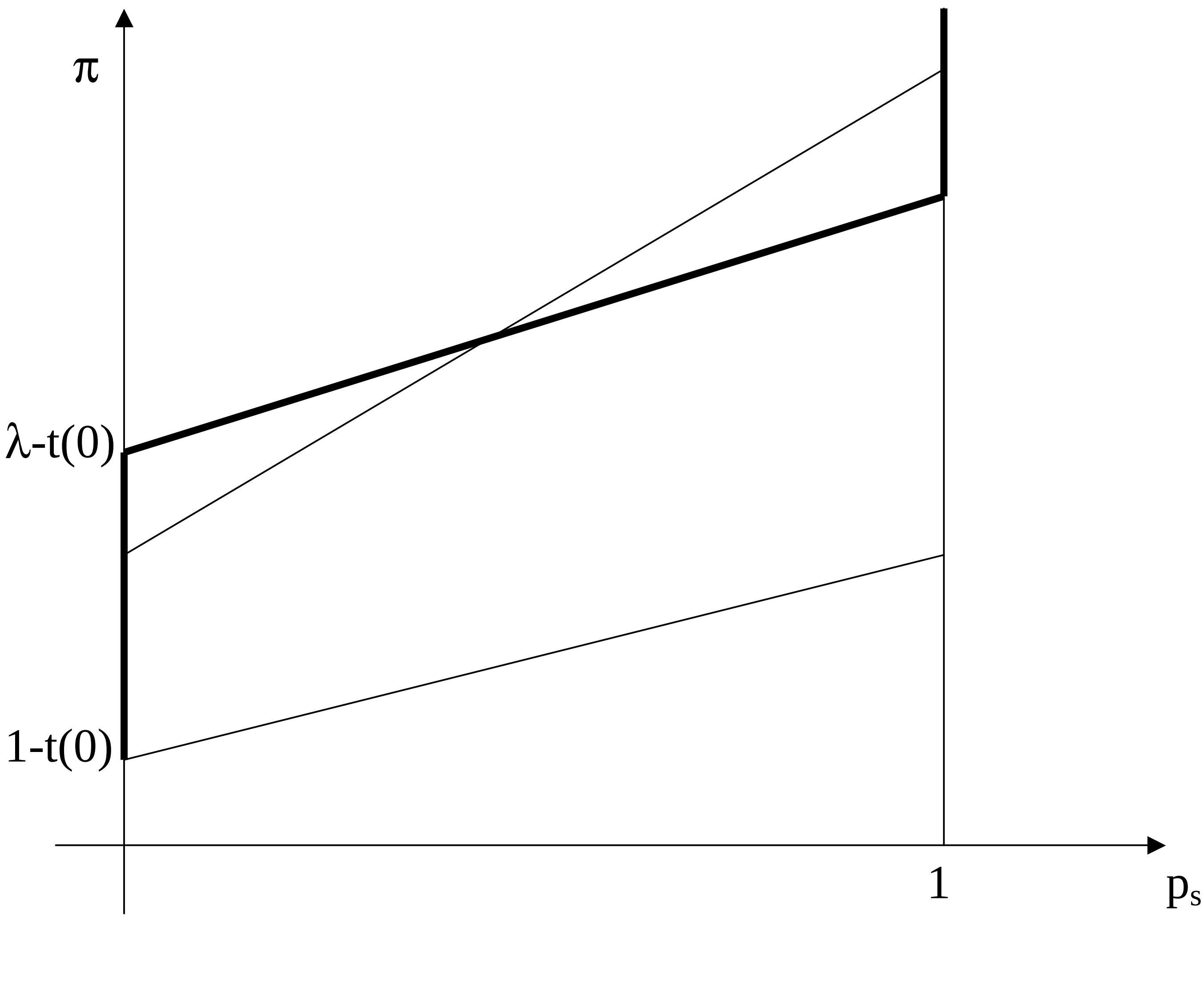


Figure 2b

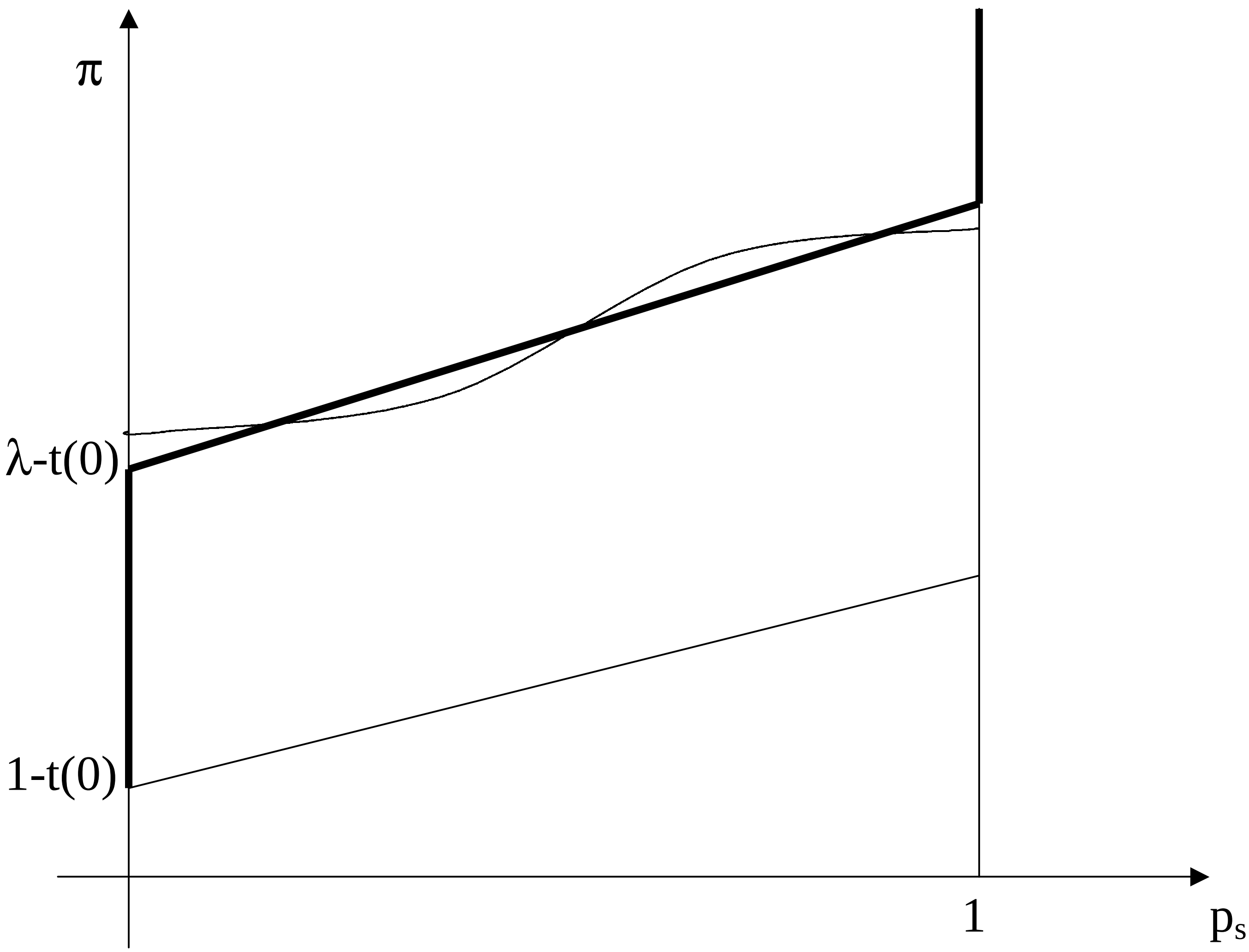
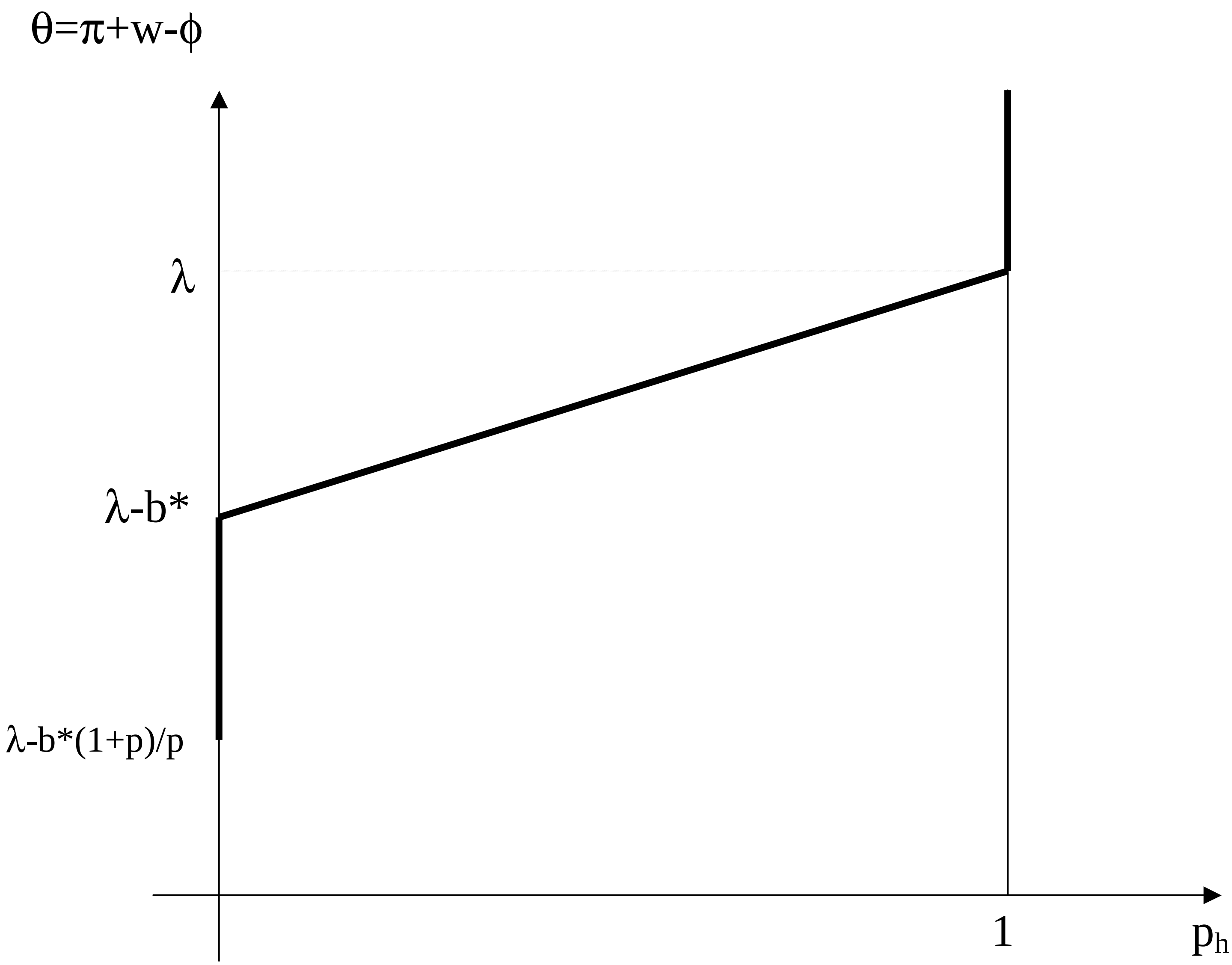


Figure 3



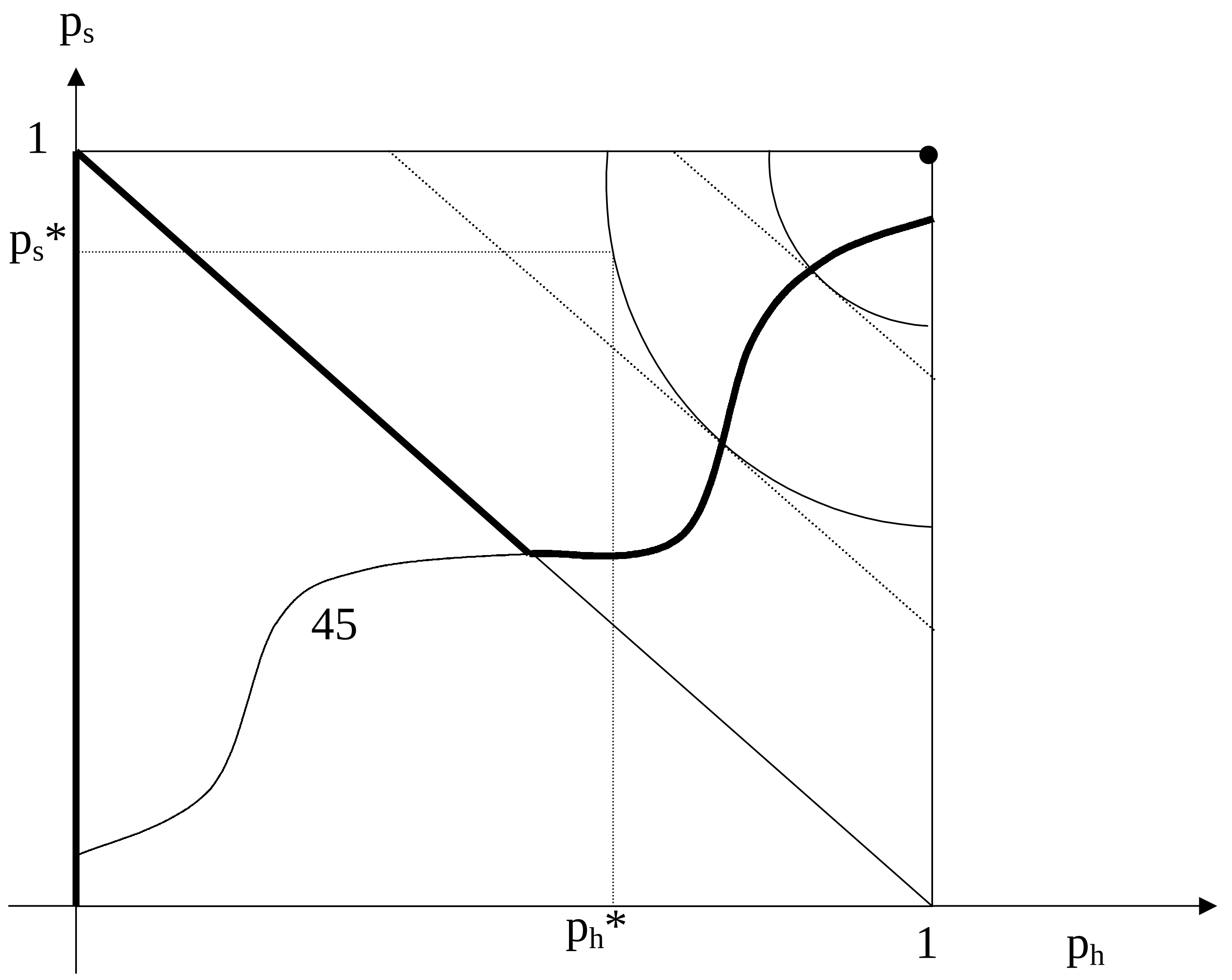


Figure 4