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BAD POLITICIANS

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ABSTRACT

We present a simple theory of the quality (competence and honesty) of elected officials. Our theory offers four main insights. Low-quality citizens have a “comparative advantage” in pursuing elective office, because their market wages are lower than those of high-quality citizens (competence), and/or because they reap higher returns from holding office (honesty). Hence, voters may find themselves supply constrained of high-quality candidates. Second, bad politicians generate negative externalities for good ones, making their rewards from office increasing in the average quality of office holders. This leads to multiple equilibria in quality. Third, incumbent policymakers can influence the rewards of future policymakers, leading to path dependence in quality: bad governments sow the seeds for more bad governments. Fourth, quality-constrained voters look for the optimal mix of honesty and ability, and this may lead to a negative correlation between these two qualities across political entities.

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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

This is a study of the quality of elected public officials. The quality of public officials has at least two dimensions: competence and honesty. Competence is the skill to identify the appropriate policy objectives and achieving them at minimum social cost. To make this notion concrete we will model competence as the ability to provide an indispensable public good with minimum tax revenues. Honesty is the character trait that leads an official to perform his duties without harassing private citizens for bribes or other kickbacks.

We take it as self-evident that both dimensions of quality vary enormously across countries, and that indeed in some countries quality is dismally low. 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 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.

So why are some countries' politicians so much better than those of other countries? And, in particular, how can it be that democracy – a system that allows citizens maximum choice and control over their public decision makers – sometimes generates such bad politicians? We use a simple model of democratic political representation to illustrate four ideas that we hope may shed light on these questions. The first idea is that low-quality citizens have a *comparative advantage* in seeking office. Under the reasonable assumption that policy-making competence is correlated with market skills, incompetent citizens have a lower opportunity cost of choosing a life in politics. And dishonest citizens will steal more, so they will extract greater rewards from public office. Conversely 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. This comparative advantage tends to lower the quality of the pool of candidates from which voters can choose.

Low-quality citizens' comparative advantage for politics is partially counter-balanced, however, by the fact that voters prefer good and clean policies, so candidates of higher quality have higher chances of election than candidates of lower quality. The degree of goodness or badness of politicians will then depend on the relative strength of these two effects. In particular, when the (legitimate) returns from holding office are sufficiently large, the comparative-advantage effect is weak, and 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. In other words, bad politicians win because rewards from office are too low to induce potentially good politicians to run.

As we detail below, the rewards from elective office are a composite package of financial *and* psychological rewards (ego rents). Both these components are in part endogenous to the political process itself, so it would be unsatisfactory to leave things at that. This observation leads us to advance our second idea: there can be *multiple equilibria* in the quality of the governing class. This is because low-quality office holders generate a negative externality for high-quality ones. For example, the social status enjoyed by politicians is influenced by the perceived quality of the political class as a whole, so individual ego rents are negatively affected by a preponderance of low-quality office holders. Because of this externality there can be “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. Besides social status, we discuss additional sources of multiplicity-inducing externalities, such as opportunities for financial gain after leaving office, which may depend on the expected (and hence average) quality of the office holders who are stepping down, and the collegial nature of policymaking, which implies that bad politicians reduce the effectiveness of good ones.

Endogenizing the rewards from office also leads to our third idea: there can be *path dependence* in the quality of elected office holders. Here the key observation is that today's politicians can manipulate the rewards of tomorrow's ones. Most simply, the current elected

body may determine the compensation package received by the next. More subtly, they can take policy actions, such as hiring more or less able bureaucrats, that will affect the performance, and hence, possibly, the utility, of future office holders. High-quality office holders will generally vote for policies that maximize the effectiveness and the rewards of future policymakers. But low-quality office holders are concerned with the effect such policies will have on their future chances of re-election. Relatively low rewards from holding office will discourage high-quality citizens from seeking office, thereby making it easier for low-quality ones to be elected. If this incentive is sufficiently strong, low-quality office-holders will keep future political payoffs low. 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.

The discussion so far may suggest that increases in the rewards from holding office should be accompanied by increases in quality in all dimensions, so that, in particular, honesty and competence should be positively correlated across polities. However, the fourth idea we set out in the paper is that – under certain circumstances – increases in average honesty may require declines in average competence (and vice versa), so that it may be possible to observe a *negative correlation* between honesty and competence. In particular, if rewards for office are low enough, citizens who are both competent and honest – the ones who need the greatest inducement to embrace a life of public service – will all shun politics, and voters must choose between candidates who are honest but incompetent or competent but dishonest. Local increases in rewards may help achieving a better balance between these two groups, but they do imply that as one desirable quality increases the other must fall. Instead, for sufficiently high levels of the rewards from office, further increases trigger the entry into politics of additional citizens who are both honest and competent, so that in this range the two qualities increase in tandem.

Since the rewards from elective office play a key role in the paper, it is important to be clear about the nature of such rewards. These are both psychological and financial. There can be little doubt of the importance of psychological gratification in motivating individuals to seek public office. Elected public officials have power over other people, they are famous, and they feel that they can shape the World (their country, their city) more to resemble their ideal.

To most people, at least one of these conditions (and often all three) is appealing in itself, and it often plays a crucial role in motivating a candidacy. But political careers also afford several sources of financial reward. First there is the official compensation (current salary plus pension benefits), inclusive of perks of various kinds in the form of free or discounted transportation and lodgings, official trips, ceremonies and receptions, etc. Second there are the improved earning opportunities after leaving office. Former elected officials have heightened access to careers in lobbying, public speaking, teaching, diplomacy, and law, or at any rate they can be more effective at any of these activities thanks to the contacts developed during their time in office. When we talk about the (legitimate) rewards from office, therefore, we have in mind the combined utility value of all these gains, psychological and financial.¹ We stress that *none of the results in the paper depends on whether the former or the latter is the main motivation for seeking office*. To be clear: all our results go through even if ego rents are the *only* motivation for seeking office.²

There is extremely little previous work that applies formal economic methods to investigating 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. 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 choose to stay out of politics.³ Rather than voting behavior, our focus is on the self-selection of individuals of different quality into the pool of candidates.⁴

¹Adam Smith thought that men seeking public “distinction” were driven by a combination of “avarice” and “ambition.” Max Weber spoke of politicians living “off politics” as well as “for politics.”

²Or, more precisely, the only “legitimate” motivation. Of course, dishonest citizens must be motivated by the possibility of collecting bribes.

³Heterogeneous policy preferences are perfectly admissible, though, as we discuss below.

⁴Dal 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 threatened 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

For the same reason, *low-quality equilibria may exist even if voters have perfect information on the candidates' types*. Voters have no illusions as to the intrinsic qualities of the candidates, but may elect bad candidates because they are “rationed” in high-quality ones. In this sense, our paper offers a rebuttal to Wittman (1989), who states that “behind every model of government failure is an assumption of extreme voter stupidity, serious lack of competition, or excessively high negotiation/transfer costs” (p. 1421), and argues that none of these assumptions is more likely to apply to democratic governments than to markets. Our model shows, in sharp contrast, that lack of competition can arise in the political arena in a way that it does not in the market – namely, rewards do not adjust to elicit an increased supply of the scarce resource (high-quality politicians). Indeed, rewards may be manipulated by bad politicians exactly with the purpose of keeping good citizens out of politics.⁵

Section 2 presents the general setup of the electoral game. We then present three models of politicians' quality: a model of competence (Section 3), a model of honesty (Section 4), and a model where quality varies along both dimensions (Section 5). In Section 6 we tackle a number of questions of generality, robustness, and empirical relevance. Section 7 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 as in Osborne and Slivinski (1996) and Besley

quality of institutions rather than on the intrinsic quality of the members of the political leadership.

⁵This is also the key difference between our contribution and the large literature on corruption in public bureaucracies, and particularly Besley and McLaren (1993), who, like us, examine the selection effect of rewards on quality but, unlike us, assume that such rewards are set by a benevolent politician who aims for the second best. We think that corruption of elected officials (the principal) is at least as important as corruption of civil servants (the agents). 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). See Ades and Di Tella (1997) and Bardhan (1997) for surveys of the corruption literature.

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 . In the second stage all citizens vote. Each citizen can vote for at most one candidate, and the 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.⁶

For most people ϕ is a finite constant. However, in order to eliminate a trivial equilibrium where the entire population runs for office, we assume that there is a measure v ($v \in [p, 1]$) of citizens who have an infinite cost of candidacy. Similarly, to eliminate equilibria in which some offices go unfilled, we assume that ϕ is paid by a candidate only if the measure of candidates is greater than p (otherwise there is no competition, and hence no point in campaigning).

Citizens possess rational expectations at all times. Individuals take candidacy and policy-making decisions so as to maximize their own expected utility. For voting behavior we adopt Alesina and Rosenthal's (1995) notion of conditional sincerity: in an equilibrium there must be no voter who would be better off if the measure of votes obtained by the candidate he has voted for declined. In other words voters vote as if they were pivotal. If a voter is indifferent among candidates in this conditionally-sincere sense, we assume that she randomizes among them.⁷ The equilibrium is computed by backward induction, so that it is subgame perfect.⁸

⁶We 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 elective offices confer the same rewards and are assigned in a unique election.

⁷The assumption of conditional sincerity gets us around the well-known problem that, because of the large number 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. Solving the long-standing puzzle of why people bother to vote is beyond the scope of this paper.

⁸The 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 within which player i picks the candidate she will vote for (with a uniform draw). A political

3 Competence

In this section we assume that the population is heterogeneous in ability (i.e., for now we abstract from corruption). A fraction s of the population is of type s , or high ability, while a fraction $(1 - s)$ is of type \bar{s} , or low ability. The fraction of office holders who have high ability is p_s . The role of office holders is to provide an indispensable public good, without which society could not function (say, the rule of law). The key assumption 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 . Denoting by t the per-capita tax burden, we have $t = t(p_s)$, where $\partial t / \partial p_s < 0$. Our goal in this section is a theory of the determination of p_s .⁹

A private citizen's utility is his consumption. Consumption is market income less taxes, if the citizen has not run for election, and the same, less campaigning costs, if he run for office but lost. Market income depends on the citizen's type: high ability citizens receive income $y^s = \lambda$, while low-ability citizens receive income $y^{\bar{s}} = 1$, where $\lambda > 1$.¹⁰ To simplify matters we also assume that taxes are lump-sum, so that each citizen's tax burden is $t(p_s)$. Hence a private citizen of type i 's utility is $y^i - t(p_s)$ if he did not run for office, and $y^i - t(p_s) - \phi$ if he did but lost. It is clear, then, that private citizens always prefer more high-ability office holders.

equilibrium is a profile $\{d^*, \Omega^*(\cdot)\}$ such that

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

⁹Our 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.

¹⁰Hence we assume perfect correlation between market income and policymaking skills. We argue in Section 6 that all the results go through if the correlation is imperfect, as long as it is positive.

A citizen who holds public office receives a payoff of π , which summarizes the utility value of all rewards from public office, both financial and psychological. Hence, an office-holding citizen's utility is $\pi - t(p_s) - \phi$.¹¹ In order to insure that office holders always choose to provide the public good (and collect the corresponding taxes) we assume that collection of the payoff π is contingent on such provision, and that office holders' utilities are 0 if they don't provide the good. The reader can think of the consequences of not enforcing the rule of law as so severe that it is impossible for office holders to collect any payoff, material or moral. In order to simplify things, without loss of generality, we assume that $\pi - \phi \geq 1$ always.

Voters have incomplete information on the types of the various candidates. They observe a signal, s or \bar{s} , for each of the candidates. The unconditional probability that the signal is "correct" is $\sigma > 0.5$, i.e., a fraction σ of the citizens of type i will emit signal i if they run for office. All citizens observe the same signal about each of the candidates. Candidates have no control over the signal they emit, but know in advance what it will be if they run for office. The interpretation is that it is difficult, but not impossible, to use the electoral campaign to "fool" voters. In particular, a fraction $(1 - \sigma)$ of type- \bar{s} citizens have the ability to convince the electorate that they are, in fact, type s .¹² Candidates know in advance their own campaigning skills. In order to avoid trivial results we assume, realistically, that for either type and for any σ the measure of potential candidates whose signal reveals the true type is greater than the measure of offices. Defining $\mu = (1 + p - v)$, this can be insured by requiring that $s\mu > 2p$ and $(1 - s)\mu > 2p$.¹³ For brevity, in what follows we will occasionally refer to candidates who emit signal- s (\bar{s}) as high-signal (low-signal) candidates.

3.1 Comparative Advantage and Occupational Choice

Under the assumptions stated above we obtain

¹¹We treat π as independent of the office holder's type, but we should point out that all our results still go through if π is type dependent, as long as $\pi_s - \pi_{\bar{s}} < \lambda - 1$, which seems entirely realistic. Also, none of the substantive results in the paper is altered if we assume that office holders do not pay taxes.

¹²Conversely, a fraction $(1 - \sigma)$ of type- s citizens are such lousy campaigners that they are mistakenly taken to be type \bar{s} . σ could differ among the two types with no change in results.

¹³Implicit in this statement is the further assumption that the measure v of citizens who never run for office is representative of the population.

Result 1. *The competence of the elected body p_s is (weakly)*

- (i) increasing in the political rewards π ,*
- (ii) decreasing in the opportunity cost λ ,*
- (iii) decreasing in the cost of campaigning ϕ ,*
- (iv) increasing in the information content of the signal σ ,*
- (v) increasing in the quality of the population s ,*
- (vi) increasing in the size of the elective body p .*

The formal proof is in Appendix 1. Here we provide an informal overview.

As discussed in the Introduction, there are two key forces. Voters prefer high-ability politicians, and in this economy they manifest this preference by always voting for candidates who emit a high signal, since these are the ones who are more likely to be of type s . One implication is that, whenever the measure of high-signal candidates exceeds the number of offices p , low-signal candidates have no chances of being elected. Another implication is that, since some low-ability candidates emit signal s , there is a group of low-ability citizens who enjoy the same probability of election as the citizens who are of high-ability (and emit a high signal). Define P_s such a probability, and consider now the candidacy decision. A high-signal individual of type s will stand for office if and only if

$$P_s [\pi - t(p_s) - \phi] + (1 - P_s) [\lambda - t(p_s) - \phi] \geq \lambda - t(p_s) \quad (1)$$

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. The right-hand side is the (certain) return from not running. This equation can be rearranged to yield

$$P_s [\pi - \lambda] \geq \phi, \quad (2)$$

which says that the (probability-weighted) premium from public life over private life must at least pay for the cost of campaigning. A low-quality individual with a high-quality signal shares the same probability of election P_s , but has a lower opportunity cost (1 instead of λ). This is the comparative advantage we referred to. Hence, a key observation is that whenever high-quality individuals (weakly) prefer to run for office, all the members of the low-quality, high-signal group strictly prefer to do so as well.

Result 1 can then be illustrated with the help of Figure 1, which plots the equilibrium value of p_s against the quantity $\theta = (\pi - \lambda)/\phi$. The "running condition" is then $P_s\theta = 1$. The flat portion of p_s to the right corresponds to values of the premium from politics so high that all citizens who have a high signal – and hence a nonzero chance of election – decide to run. When this happens the fraction of skilled citizens in the elected body is at its maximum, $p_s^{\max} \equiv \frac{\mu_s}{(\mu_s + \mu_{\bar{s}})}$, where μ_i denotes the measure of high-signal citizens of type i in the population. At the same time, the probability of election is at its minimum value, $P_s^{\min} \equiv \frac{p}{(\mu_s + \mu_{\bar{s}})}$.¹⁴

Moving to the left, there is an intermediate set of values of θ that are not high enough to induce all high-ability, high-signal citizens to simultaneously run for office – $P_s^{\min}\theta < 1$ – but high enough that they are willing to run if there is a reasonable chance P_s of being elected. Clearly this implies that in equilibrium high-ability, high-signal citizens are indifferent between running and not running, or $P_s\theta = 1$. It also implies that low-quality, high-signal citizens all run. Defining C_s as the number of high-quality candidates we therefore have $P_s = \frac{p}{(C_s + \mu_{\bar{s}})}$, and C_s must fall with θ . Declines in the relative rewards from office are therefore compensated by increases in the probability of winning office brought about by declines in the number of (high-quality) candidates. Hence, $p_s = \frac{C_s}{(C_s + \mu_{\bar{s}})}$ also falls as θ falls.

For $\theta = 1$ high-ability, high-signal citizens can be induced to run as long as $P_s = 1$, i.e., as long as there are fewer high-signal candidates than offices. In that case $\mu_{\bar{s}}$ offices are "taken" by low-ability, high-signal candidates, and high-ability candidates will be certain of election as long as their number C_s is less than $p - \mu_{\bar{s}}$. We therefore have a continuum of equilibria, one for every number of type- s candidates C_s in this range. Finally, for $\theta < 1$ no high-quality candidate can be induced to run for office, and $p_s = 0$.¹⁵

The above discussion illustrates parts (i)-(iii) of Result 1, but Figure 1 can also be used to comment on parts (iv)-(vi). An increase in the informativeness of the signal, σ , shifts up the flat portion as well as the upward sloping part of the p_s curve. The first effect captures the fact that, with larger σ , when all high-signal candidates run for office the proportion of truly good types in the candidate pool increases ($\mu_{\bar{s}}$ falls so p_s^{\max} increases). The second effect

¹⁴ $\mu_s = \sigma s\mu$ and $\mu_{\bar{s}} = (1 - \sigma)(1 - s)\mu$.

¹⁵Figure 1, and the associated commentary, change somewhat if $\mu_{\bar{s}} > p$, instead of $<$, as here we implicitly assume. See the Appendix.

is because a larger σ implies that there are fewer low-ability candidates “stealing” votes, so that the probability of election for a high-quality candidate increases. For any given θ , this encourages high-quality candidates to run for office in greater numbers. In the limit case $\sigma = 1$ the upward sloping part of the p_s function becomes vertical through $\theta = 1$, i.e. we have $p_s = 0$ if $\theta < 1$ and $p_s = 1$ if $\theta > 1$ (and a continuum between 0 and 1 if $\theta = 1$). Hence, parts (i)-(iii) of Result 1 still apply if there is perfect information.

An increase in the quality of the population, s , is formally, graphically and intuitively isomorphic to an increase in σ . An increase in p shifts up the sloping part of p_s , and shifts to the left the value of θ such that p_s takes its maximum value. The intuition is that – given the size of the pool of low-ability citizens who take away votes from the high-ability ones – a larger p allows to better dilute them, and increases the chance of election for high-ability types.

If we stopped here we would be attributing differences in policy-making quality among countries to exogenous differences in parameters. Countries with high-quality policymakers are countries that have “better” parameters, in the sense of Result 1. We think these results are interesting in their own right, but they naturally beg the question of why these parameters vary across countries. In particular, one suspects that the rewards from office, π , are themselves endogenous to the political process. In the remainder of this section, therefore, we explore this question, and show that when π is endogenous there can be multiple equilibrium levels of p_s , as well as 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.¹⁶

3.2 Multiple Equilibria

In this sub-section we argue that the rewards from office depend positively on the average quality of the policy-making class. Formally, we make the case that π is an increasing function of p_s . Given this, we show that there are multiple equilibria in the quality of elective-office holders, p_s .

¹⁶Technically, for $\theta = 1$ we have multiple equilibria even with exogenous π . But with exogenous parameters this is a “measure zero” case.

There are many reasons why π is increasing in p_s . First, suppose that people derive utility from their social status. A person's social standing depends on other people's assessment of their quality. In the context of the present model, a politician's social prestige clearly depends on the public's assessment of the probability that she is of type s . How do members of the public assess this probability? Simple: the higher is p_s , the higher the probability that a member of the political class is of type s .¹⁷

Second, after-office earnings opportunities are likely to depend on the average quality of the political class. Politicians have to worry about their sources of income after their political career ends. Expected rewards from office are obviously higher if they can count on being hired as partners, directors, public speakers, college professors, etc. Their chances of obtaining such appointments obviously depend on prospective employers' assessment of their likely abilities, and hence once again on p_s .

Third, ego rents will probably also derive from the gratification of serving one's country, and from the satisfaction for doing a good job at it. Being part of an incompetent policy-making body must be frustrating and must lead one to feel that one's talents are not well spent. This is because of the highly inter-dependent nature of the policymaking process, where checks and balances and the need for compromise generate large production externalities. By a similar token, in highly collaborative activities – such as policymaking – there is a consumption externality to interacting with high quality colleagues, which also would tend to confer a positive slope to the relationship between π and p_s . Note that this third set of arguments for a positive dependence of π on p_s does not depend on the existence of uncertainty.

We summarize the discussion above by stating that π is an increasing function of p_s , $\pi(p_s)$. Then, the analysis of the previous section readily implies

Result 2. *There can be multiple equilibrium values of the competence of the elected body, p_s .*

To see this, simply notice that we can plot the (inverted) function $\theta(p_s) = [\pi(p_s) - \lambda] / \phi$ in Figure 1. Essentially, there is an equilibrium for each intersection of the $\theta(p_s)$ function with

¹⁷Formally, if the political class is constituted exclusively by high-signal people, then the probability that an elected officer is of type s is exactly p_s . If there are low-signal citizens in office, then the probability that a politician with a high-signal is of type s is $pp_s / [pp_s + \mu_s]$.

the curve describing p_s as a function of θ , which we derived in the previous sub-section. Figure 2 provides a set of examples, all of which assume, probably realistically, that $\theta(p_s)$ satisfies the Inada conditions $\theta'(0) = \infty$, $\theta'(1) = 0$, and $\theta''(p_s) < 0$. In the example corresponding to curve A, $\theta(p_s)$ is always quite low, and the unique equilibrium has $p_s = 0$. Curve C shows a case in which public office is always quite rewarding. The only equilibrium features p_s at its maximum possible value. The most interesting case is the intermediate one corresponding to curve B, where there are three equilibria, with $p_s = 0$, p_s at its maximum, and an interior one. It should be clear that, depending on how one draws the curves, interior equilibria can lie both on the vertical and on the upward sloping part of p_s , and that there can be more than one interior equilibrium. Finally, it should be clear that, as long as $\pi(p_s)$ is upward sloping, there can be multiple equilibria even if there is certainty.

3.3 Path Dependence

The current policy-making class has the power to affect the rewards of future office holders, i.e., π is in part determined by decisions taken by the elective body in office in the previous term. Since p_s depends, in turn, on π , this gives the initial policymaking body influence over the composition of subsequent elective assemblies. Since policymakers of different types have different preferences over the composition of future elective bodies, we reach a path-dependence result whereby p_s today depends on p_s yesterday.

There are several ways in which current office holders affect future office holders' utilities. The obvious way is that they set their financial compensation. Assuming that wages, pensions, and perks for a newly elected political body are set by the outgoing chamber before it leaves office, and before elections take place, seems to broadly reflect standard practice around the World. More subtly, the outgoing elective-body can influence the incoming one's performance, thereby affecting the utility they derive from their achievements (or lack thereof) while in office. Ways in which the current government affects the future government's performance are countless. Examples include the quality of the bureaucracy it bequeaths to its successors; the size of the public debt; the constraints imposed on the government's actions inscribed in the laws and in the constitution, etc.

To formalize these dynamic interactions we add one stage at the beginning of the citizen-

candidate game we have studied so far. In this initial stage, the outgoing assembly sets (by majority rule) the incoming one's payoff, π . It should be clear that the results carry over to the case in which they influence π indirectly, for example by hiring more or less able bureaucrats. The composition of the outgoing chamber is exogenously given and determined by historical accident. We denote the proportion of competent officials in this body as p_{s0} . Once the outgoing body has set π , the rest of the game is played exactly as before, with the three remaining stages of candidacy, voting, and policy-making. We are interested in the dependence of the quality of the newly-elected body – which we continue to label p_s – on the quality of the outgoing body, p_{s0} .

The subgame comprising the three stages after the choice of π is clearly identical to the game analyzed in the previous sections. In particular, the equilibrium level of p_s as a function of $\theta = (\pi - \lambda)/\phi$ can still be read from Figure 1. We treat λ and ϕ as constants, so choosing π is equivalent to choosing θ . Since θ is set by majority rule it will reflect the preferences of the median voter in the initial policy-making body. That body is constituted by (at most) four groups of citizens, depending on signal and type. Officials of the same group have identical payoff functions and will, therefore, all vote for the same level of θ . Furthermore, since tenure in office for those voting on θ is at an end, the payoff function that an office-holder seeks to maximize coincides with the payoff function of any citizen who shares the same characteristics of type and signal.¹⁸ The preferred choice of θ could differ, however, between the various groups.

Define $\bar{\theta}$ the highest feasible level of θ .¹⁹ In Appendix 3 we construct an example in which all high-competence members of the initial elective body, as well as all low-signal, low-competence members, prefer to set $\theta = \bar{\theta}$, while high-signal, low-competence members prefer $\theta < \bar{\theta}$. It follows that, if the initial policymaking body has a majority of high-signal, low-competence citizens, the median voter chooses $\theta < \bar{\theta}$, while if these citizens are a minority

¹⁸It is also possible to enrich the model to provide an incumbency advantage to the members of the outgoing chamber, in running for re-election. Examples (available upon request) can still be constructed that feature path dependence in p_s . However, the model becomes much more complicated.

¹⁹ $\bar{\theta}$ could easily be endogenized, for example by taking into explicit consideration the direct tax costs of raising policy-makers' salaries. Incidentally, in developing this section we have chosen to ignore such costs mainly in order to be able to continue to refer to Figure 1.

we will have $\theta = \bar{\theta}$. Because p_s is increasing in θ , it follows that p_s is lower if low-type citizens were in a majority in the previous period's assembly than if they were in a minority.²⁰ This is our

Result 3. *The competence of the elected body, p_s , can be increasing in the competence of the outgoing body, p_{s0} .*

Hence, when historical accident determines that a country's initial political leadership is composed of 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.

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 \bar{h} . Type h is present in the population with measure $h(1+p)$ and type \bar{h} with measure $(1-h)(1+p)$. We denote by p_h the fraction of office holders who are of type h . All citizens have the same ability, so that their market income is always λ . As before, when a citizen runs for office, voters have a probability $\sigma > 0.5$ to discern his true type. Again we assume $h\mu > 2p$ and $(1-h)\mu > 2p$. Since competence is the same for all policymakers, we normalize taxes to 0.

Relative to the model of competence one slight complication 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 $\pi + \eta^j b^i$. π continues to represent the rewards – material or psychological – that

²⁰This is not the only admissible scenario with path dependence. As we show in the Appendix, in another scenario low-skill, low-signal members also prefer to set $\theta < \bar{\theta}$, though typically not at the same level as the low-skill, high-signal members. In particular, they may choose $\theta = 1 - \varepsilon$, in which case $p_s = 0$. Hence, if these low-skill, low-signal members are in a majority, again we have that a low-quality majority is followed by a low-quality assembly.

the individual policymaker takes as exogenous. b^i represents the gains obtained by harassing citizens and requiring kickbacks and bribes. η^j is the exogenous parameter by which we introduce heterogeneity in this model. Our assumption is that $\eta^h = 0$, while $\eta^{\bar{h}} = 1$. 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 \bar{h} are dishonest: they derive the same utility benefits from resources obtained by legitimate and illegitimate means.²¹ This gives them a comparative advantage and means that, whenever some signal- h honest citizens run for office, all signal- h dishonest ones do so too.

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 kickback k_i his utility is then: $\lambda - k_i$. Denote the maximum bribe a politician can collect from a citizen by \bar{k} . 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 0.²² As long as π does not depend on the bribe-taking activity of any individual office holder, on the other hand, a dishonest office holder will always maximize her revenues by setting $k_i = \bar{k}$ for each citizen i he gets to victimize – and her illegal gains will amount to $\frac{\bar{k}}{p}$. 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-looking candidates.²³ We conclude that, as in the previous section, high-signal candidates have an electoral advantage.²⁴

²¹The qualitative results don’t change if one changes the assumptions on the parameter η^j , as long as $\eta^h < \eta^{\bar{h}}$.

²²We are implicitly assuming that bribe collection involves a transaction cost ε to be borne by the politician.

²³It 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 a dishonest office-holder is large enough to matter for electoral outcomes, then it is likely that competition among these dishonest citizens 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).

²⁴In a dynamic version of this model, wouldn’t there be an incentive for dishonest politicians to behave

Appendix 2 proves the following

Result 1' *The honesty of the elected body p_h is*

- (i) increasing in the political rewards π ,*
- (ii) decreasing in the opportunity cost λ ,*
- (iii) decreasing in the cost of campaigning ϕ ,*
- (iv) increasing in the information content of the signal σ ,*
- (v) increasing in the quality of the population h ,*
- (vi) increasing in the size of the elective body p ,*
- (vii) increasing in the cost of corruption \bar{k} .*

The result lends itself to being illustrated with the help of a figure analogous to Figure 1. We omit the discussion because it would closely follow the lines of the discussion in the previous section. The intuition for parts (i)-(vi) also follows closely the intuition for the corresponding parts of Result 1. The new result in part (vii) has a straightforward intuition: an increase in the size of bribes lowers private utilities, thereby reducing the opportunity cost of running for office for honest citizens. Similarly, we omit to reiterate – because it closely follows the corresponding ones in the previous section – the reasoning that leads to

Result 2'. *There can be multiple equilibrium values of the honesty of the elected body, p_h .*

and

Result 3'. *The honesty of the elected body, p_h , can be increasing in the honesty of the outgoing body, p_{h0} .*

5 Competence and Honesty Together

In this section we extend the analysis to the case in which the population is heterogeneous in both ability and honesty. 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 honesty in order to insure re-election? No, because behaving honestly brings their utility down to the level of honest politicians, and these are indifferent between public and private life. In other words, insuring re-election is never worth it if it requires giving up the bribes.

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 $p_{h\bar{s}}$ is honest but of low ability. A fraction $p_{\bar{h}s}$ is dishonest and skilled, and a fraction $p_{\bar{h}\bar{s}}$ is dishonest and has low ability. The full model with uncertainty takes unmanageable proportions: we would have to study the decisions of 16 types of people, one for each combination of true type and signal. Hence, here we limit ourselves to the case in which voters have perfect information on candidates' types, or $\sigma = 1$. We assume that $p_{hs} = 1$, $p_{h\bar{s}} = 1$, $p_{\bar{h}s} = 1$ and $p_{\bar{h}\bar{s}} = 1$ are all feasible.²⁵

Define $p_h \equiv p_{hs} + p_{h\bar{s}}$ the fraction of politicians who are honest and $p_s = p_{hs} + p_{\bar{h}s}$ the fraction with high ability. Under the restriction that $\frac{\bar{k}}{p} > \lambda - 1$, in Appendix 4 we prove

Result 1'': *The competence of the elected body, p_s , is*

- (i) *increasing in the political rewards π for low and high values of π , but decreasing in π in an intermediate range,*
- (ii) *decreasing in the opportunity cost λ ,*
- (iii) *decreasing in the cost of campaigning ϕ for low and high values of π , but increasing in ϕ in an intermediate range,*
- (iv) *increasing in the cost of corruption \bar{k} for low and high values of \bar{k} , but decreasing in \bar{k} in an intermediate range.*

The honesty of the elected body, p_h is

- (i) *increasing in the political rewards π ,*
- (ii) *decreasing in the opportunity cost λ ,*
- (iii) *decreasing in the cost of campaigning ϕ ,*
- (iv) *increasing in the cost of corruption \bar{k} .*

The “box” in Figure 3 represents the feasible values of the pair (p_h, p_s) . Clearly both p_h and p_s have a maximum at 1, and they are both 1 only when all politicians are of type hs . The figure also depicts the line $p_s + p_h = 1$, to which we will refer to as the “diagonal.” The significance of this line is that points above the diagonal can only be reached if there are office holders of type hs . In other words, the line shows the best the economy can do when its best citizens are not in politics. Conversely, points below the diagonal can only be

²⁵Formally, this requires $hs(1+p) > p$, $(1-h)s(1+p) > p$, $h(1-s)(1+p) > p$, and $(1-h)(1-s)(1+p) > p$.

reached if there are in office some citizens of type $\bar{h}\bar{s}$.

Within the box, we can also draw a family of indifference curves, representing voters' preferences vis-a-vis honesty and ability. Higher indifference curves (more honesty and more competence) correspond to higher levels of utility. Finally, we plot the curve that connects all points at which the indifference curves have a slope of -45 degrees, which we call the 45 curve. We show that if in equilibrium (p_h, p_s) is above the diagonal, then it must necessarily lie on this 45 curve. The intuition is as follows. Because we are above the diagonal, some competent and honest citizens are holding office, and are therefore at least indifferent between public and private life. But, then, all other types of citizens must strictly prefer to hold office, so honest but incompetent, and competent but dishonest citizens are in "excess supply". Holding constant p_{hs} , voters can therefore choose the optimal combination of $p_{h\bar{s}}$ and $p_{\bar{h}s}$, by moving along a "budget constraint", which has slope of -45 degrees: a unit increase in p_h (the election of a $p_{h\bar{s}}$ type) "costs" a unit decrease in p_s (the non-election of a $p_{\bar{h}s}$ type). Clearly this optimal choice will lie on the highest indifference curve consistent with this constraint, i.e. where the indifference curve has slope -45 degrees.

For π large enough, the best citizens, of type hs , are induced to run for election in sufficiently large numbers that they fill all offices, so that the economy achieves $p_h = 1$ and $p_s = 1$. As π falls, fewer and fewer positions are filled by hs citizens, and more and more are taken by honest, but incompetent, and competent, but dishonest: we move down along the 45 line. When π has fallen enough that all hs types have dropped out of politics, we have reached the intersection between the 45 line and the diagonal. There is then a range of values of π such that the equilibrium "remains" at this point, as both "not-so-bad" types still strictly prefer to run for office, and are therefore plentiful. Eventually, π is low enough that some of the honest, but competent citizens (type $h\bar{s}$) start dropping out of politics, and voters start being rationed in this particular type of candidate. When this happens the equilibrium starts moving up and to the left along the diagonal, with p_h gradually falling, and p_s increasing. As p_h falls due to increased rationing of $h\bar{s}$ candidates, voters substitute by electing more $\bar{h}s$ candidates, who occupy the seats "vacated" by the $h\bar{s}$ ones. When all honest types have dropped out we have reached point $(0, 1)$. Again, there is next a range of values of π such that there are no changes in the equilibrium composition of the elected

body, but as π continues to fall we then see the retreat of the last “not so bad” holdouts: the equilibrium moves down to the point $(0, 0)$, at which politics is entirely dominated by “all bad” types.

The other comparative static results can be understood along similar lines. We don’t have results concerning variations in σ , s , and p because there is no uncertainty. The significance of the assumption $\frac{\bar{k}}{p} > \lambda - 1$ is that honesty becomes “scarce” before competence. This is the source of the non-monotonicities in p_s in Result 1’’. Had we assumed the opposite, then voters would have become rationed in competence first, and the non-monotonicities would have concerned p_h .²⁶

As usual, we next consider endogenizing π , and making it a function of quality, $\pi = \pi(p_s, p_h)$. With generic $\pi(p_s, p_h)$ there can be any number of equilibria on the locus constituted by the 45 line, the diagonal, and the vertical axis. However, the Inada conditions $\pi_1(0, p_h) = \pi_2(p_s, 0) = \infty$ and $\pi_1(1, p_h) = \pi_2(p_s, 1) = 0$, which seem reasonable, allow to reduce somewhat the indeterminacy, because they imply that there can be at most one equilibrium on the 45 line, one on the diagonal, and one on the vertical axis. We therefore state

Result 2’’. *There is a maximum of three equilibria in the quality of the elected body, (p_h, p_s) . Across different equilibria, p_h and p_s can be both positively and negatively correlated.*

The second part of the result is perhaps the most surprising, as introspection would lead one to expect that – across equilibria – quality and honesty fall or raise together. This is indeed possible, and the intuition is that a higher degree of honesty increases job satisfaction for every high quality politician, both honest and competent, thereby attracting to political life all types of good politicians. However, recall that in any “interior” equilibrium there are some high quality politicians who must be indifferent between being in office and not. Suppose that we increase honesty in the political class from a very low level. For the Inada

²⁶Note also that $\frac{\bar{k}}{p} > \lambda - 1$ is an assumption about who has a greater comparative advantage for politics among $h\bar{s}$ and $\bar{h}s$ citizens: $\lambda - 1$ is a measure of the comparative advantage – through lower opportunity cost – of low-competence citizens over high-competence citizens, while $\frac{\bar{k}}{p}$ – the rewards from stealing – is a measure of the comparative advantage of dishonest citizens. We are assuming that the extra benefits a dishonest citizen can reap from office relative to a honest one exceed the extra market compensation a competent individual receives over an incompetent one. This seems realistic to us.

conditions this increases π by a lot, and indeed it might increase π more than it increases the utility of private citizens. In order to keep quality citizens indifferent between the two occupations it is then necessary to lower p_s , so as to moderate the increase in π .

Finally, we state without proving

Result 3’. *There can be path dependence in the quality of the elected body, (p_h, p_s) .*

It should by now be obvious that an example proving this can easily be developed.

6 Frequently Asked Questions

In this section we tie a number of loose ends.

6.1 Are Bad Politicians a Bad Thing?

We have essentially assumed that competence and honesty are both desirable characteristics of the policymaking class. 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. However, there is by now a large body of empirical work that unambiguously documents that corruption has large negative effects on economic performance. See, among others, Mauro (1995), Hines (1995), Kaufman (1997), Tanzi (1997) and Wei (1997). Furthermore, Myrdal (1968), Bardhan (1997), and Kaufman and Wei (1999) point out that the institutional constraints that make corruption possible 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.

6.2 Quality: People or Institutions?

We have conceived of quality in terms of the characteristics of the individuals who run the polity. Alternative approaches to explain cross-country differences in outcomes 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 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 approach because 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 of high-quality, we would expect institutions leading to bad policies, or to bad future quality, to be removed. As we have shown here, however, low-quality majorities might have incentives to keep “bad institutions” in place.

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” at 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 (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.

6.3 Do Cooperation and Political Parties Solve the Problem?

One might expect cooperation among high-quality types to allow the polity to escape “bad politician” equilibria. In the static framework we work with, the following scheme may work: a number of high-quality citizens agree to run for office despite low π , and a large number of high-ability citizens pledge side payments to these volunteers. It seems to us that this scenario is easily dismissed by noting the enormous incentives to free ride on the side payments. A somewhat more realistic role for cooperation would emerge, however, in a multi-period version of the model with endogenous rewards. Here we could envision a group of high-quality citizens coordinating on a joint run for office despite a low initial wage, with the goal of sizing a majority and set a new high payoff for future policymaking bodies,

thereby permanently shifting the economy to a “good politician” equilibrium. This scenario is more realistic because it does not necessarily require side payments from private citizens. It requires, however, time discount rates that may be unrealistically low. It also still requires low coordination costs (note that the scheme only works if at least $p/2$ individuals take part).

Political parties may perhaps be seen as mechanisms to reduce such coordination costs. Note, however, that the effect of political parties is potentially ambiguous. For, parties come (usually) in numbers greater than one. It would seem, therefore, that the scenario in which coordination eliminates the bad equilibrium requires *each party* to come up with at least $p/2$ high-quality candidates. In other words, parties may lower coordination costs per-candidate, but they might increase the total number of high-quality citizens required to implement the coordination scheme. Their effect is therefore ambiguous.

On a related note, we emphasize that our results do not depend at all on the assumption that all citizens prefer the same policy. Imagine that there were several different preferred policies in the population, say as to the size of the public sector. There would then be lists of candidates (parties!) representing each of the policy positions. But *within* each of these lists and parties the question of the quality of candidates would re-present itself all over again: the same size of the public sector can be pursued competently or incompetently, honestly or dishonestly. Our model would then be a model of within-party candidacy, and would lead to the exact same insights on the overall quality of the political elite.

6.4 What if Competence and Ability are Imperfectly Correlated?

We have assumed in the paper that there is a perfect correlation between a citizen’s productivity in the market, y^i , and his competence in office. What if the correlation is imperfect, and some low opportunity-cost citizens are potentially good politicians, capable of delivering low taxes despite their modest market potential? The following reinterpretation of the model allows for such imperfect correlation, showing that the results do not depend at all on our simplifying assumption. Reinterpret what we have called a citizen’s true type as his competence as a policymaker. Further, reinterpret what we have called the signal as the citizen’s market income. Then, most high-income citizens would make good politicians, and most low-income ones would make bad ones, but there are minorities in the two groups who

would perform relatively worse (better) in politics than in the market. Finally, suppose that market incomes are observable by everyone. This reproduces the basic tension that drives the model: high-income individuals, a majority of which has high competence, have an electoral advantage, as voters use their market incomes as a signal of their competence. But low-income citizens, a majority of which has low competence, have greater incentives to seek office. While the details change, all our results follow.

6.5 Do Financial Rewards Matter?

Are salaries and other financial incentives important in a citizen's choice to join the political arena? For the purposes of this paper this question is not crucial, as all of our results apply even if ego rents are the only (legal) motivation to seek office. However, since the question keeps coming up, here is a review of some empirical evidence. To anticipate, the answer is: yes.

The relative importance of ego rents and financial incentives may well change depending on the level of government. One would probably expect financial incentives to play their smallest relative role at the national-government level – which undoubtedly provides very large ego rents – and a larger relative role at the local level. However, the evidence is that compensation is quite important a determinant of candidacy even in the US congress, probably one of the places in the World where one would less expect it to matter, so it should *a fortiori* be important at all other levels of government as well.

There is of course no systematic citizen-level evidence on the determinants of candidacy decisions. But direct evidence on the role of the prospects for financial gain can be gleaned at the level of the elected officials from the decision that is exactly symmetric to the decision of running for office, namely the decision to retire. Groseclose and Krehbiel (1994) and Hall and Houweling (1995) do just that, exploiting two natural experiments that occurred in the 1992 congressional election. First, in 1990, the outgoing congress approved a 35% pay increase to be phased in over the next three years (38% over five years). Because of the mechanism that determines congressmen's pension benefits, this provision implied a median 45% increase in the present value of pensions, but only for those members who were still in office at the

end of 1992.²⁷ Hall and Houweling estimate that a significant number of congressmen who would otherwise have retired in 1990 decided instead to re-run for office (and postpone their retirement to 1992) in order to make themselves eligible for the pension windfall. This shows that salaries and pensions are an important determinant of candidacy decisions. Second, 1992 was the last year in which congressmen were allowed to convert campaign war chests into personal wealth upon retirement, implying that a congressman who run for re-election in 1992 would face a substantial financial loss (some of these warchests run in the millions of dollars). Groseclose and Krehbiel estimate that this opportunity cost of seeking re-election accounts for more than one third of retirements from congress in 1992.²⁸ This shows that the opportunity cost of candidacy (λ) is also an important determinant of candidacy decisions. Finally, both sets of authors provide ample evidence that the decision to re-run was affected by the probability of election, as our model implies, and of course by indicators of the power and prestige congressmen were likely to enjoy if re-elected.

Additional evidence on the role of compensation and opportunity cost in the candidacy decision at the level of US state lower houses is provided by Fiorina (1994). He notes that in post-World War II America there has been a marked long-term decline in the electoral fortunes of the Republican party at the level of lower house State assemblies,²⁹ and shows the process of *professionalization* of state legislatures to be one leading cause of this phenomenon. At the beginning of the period he considers, most legislatures met for only a handful of days per year (and several of them only biannually), and legislators were awarded token compensation. By the end of the period, almost all legislatures had switched to a model requiring a full time commitment by legislators, with a corresponding vast increase in compensation.³⁰ To see how this explains the decline of the Republican party in state houses note that Republican elected officials are usually recruited from categories (businessman, lawyer, farmer,

²⁷This is because congressmen pensions depend on a member's three highest annual salaries, so it is necessary to be in office for at least three years after 1990 in order to collect the full present value of benefits from the pay increase.

²⁸This might be somewhat overstated, though, since these authors do not control for the role of the pay/pension increase. On this episode, see also Groseclose and Milyo (1999).

²⁹Republicans have lost legislatures in the non-South at a rate of almost 2% per election.

³⁰Average compensation of state legislators was well below national per capita disposable income in 1946, and well above by 1990.

the independently wealthy...) that allow considerable flexibility in the allocation of time, while the bulk of Democratic officials are predominantly salaried employees with essentially no flexibility in their work schedule.³¹ Hence, the argument goes, if being a state legislator is an *amateur* job, flexible Republican businessmen and lawyers face little opportunity cost of attending a handful of sessions, while inflexible Democratic workers would have to forego wage income, if not their jobs altogether, leading to a large opportunity cost. When being a state legislator becomes a full time job, on the other hand, the opportunity cost for the average Republican skyrockets. For Democrats the opportunity cost is unchanged (giving up their salaried jobs), but – because of the vast increase in compensation – the returns from office increase, making them much more willing to stand for election. The upshot is that the professionalization of state legislatures made it relatively harder (easier) for the Republican (Democratic) Party to recruit high quality candidates to run for state legislative office.^{32,33}

Less systematic but more direct evidence comes from McClure and Fowler (1989)'s gripping tale of the candidacy game that took place in New York state's 30th congressional district upon the announcement of long-standing incumbent Barber Conable's retirement in 1984. McClure and Fowler identify a large cast of individuals (state legislators, local administrators, party officials, businesspeople and professionals) who could credibly have mounted a run for the vacant seat. One by one, however, these mainstream "invisible candidates" decided to forgo a run, leaving the seat wide open to an extremist candidate whom they would probably have beaten, had they decided to run. McClure and Fowler's interviews uncover a wide range of reasons why these high-quality might-have-beens renounced congressional office, and in some of the cases the low levels of congressional salaries (relative of course to opportunity cost), combined with the high costs of life in Washington, seem to have played a significant role. This study is especially notable for our purposes because it shows not only specific cases of individuals who decide to forego a run to congress based on a comparison of rewards from office and market opportunities but also because this self-selection out of the

³¹These occupational patterns of Democrats and Republicans are extremely robustly established in the political science literature. Fiorina's paper provides ample citations.

³²Of course, this argument makes a relative statement within each party, while nothing can be inferred about the "absolute" quality comparison between the candidates of the two parties.

³³No similar decline in Republican electoral fortunes can be seen at the level of governorships, where the job has remained full time throughout, and no large pay increase took place.

race seems to have led to a relatively “low-quality” outcome.³⁴

6.6 Is this Empirically Relevant?

Some of the evidence reviewed in the previous sub-section can definitely be read as indirectly supportive of our Results 1 – or at least of some of their building blocks – in that it shows us candidacy decisions responding to material and immaterial rewards, π , and opportunity costs, λ , as well as at least one anecdote where such considerations seem to have led to the election of a low-quality politician. More systematic testing of Results 1 faces at least one very serious hurdle, i.e., coming up with a comprehensive measure of π , which is a composite of material and immaterial benefits. One can in principle measure current compensation and the present value of pensions; much harder is to measure other financial rewards, such as those the politician has access to, *quo* former office holder, after leaving office; hardest of all is to measure psychological rewards and ego rents. A second major hurdle is to find an instrument for such rewards: a simple regression of p_s or p_h on π would suffer from glaring identification problems. We are currently pursuing these goals, but they are sufficiently challenging to remain outside of the scope of the present paper.

Results 2 propose a simple answer to the question “why are some countries’ political elites so much better than others?” the answer being that some countries are stuck at bad equilibria where – politics being crowded with bad politicians – potentially good candidates stay away from public life. As all explanations based on multiple-equilibria this idea is hard to test. Nevertheless we obviously think that the idea has enormous empirical appeal. Consider, for example, the countries that form the European Union. From within this set of relatively homogeneous countries the lowest values of the *International Country Risk Guide’s* corruption index are *below the World average*, while of course the highest values are the highest values in the World. Anecdotally, of course, the prestige of the political class follows these rankings closely, and plummets to dismal levels in some of the very corrupt countries, where politicians are positively reviled. In these countries it is obvious that a young man

³⁴In subsequent writings Fowler (1993) muses that “For too long, we have taken ambition as a given in American politics and encouraged citizens to do likewise. It is time to recognize that candidates are a precious resource that our democracy cannot afford to take for granted or squander” (p. 187). Our feelings exactly.

or woman of talent and integrity who contemplates a life in politics can look forward to ego rents that are meager indeed, and it is equally obvious that many choose alternative paths in order to avoid contact (and being confused) with the unsavory and mediocre characters that populate the corridors of political power.

Results 3 suggest that some of these mechanisms are indeed consciously exploited – and hence reinforced – by low-quality politicians in order to discourage entry by high-quality ones. One seemingly puzzling fact that is consistent with this idea is that the (legitimate) compensation of elected officials is often quite low, and adjusts sluggishly. More generally, this mechanism might explain, in part, why elective bodies are often so reluctant to introduce reforms whose goal is to expedite and make more effective the operation of future governments. Only time series evidence, however, could provide a formal empirical check.³⁵

7 Conclusions

We have investigated the mechanisms that lead to the selection of citizens of varying quality into political life. Low-quality citizens have a comparative advantage in holding office. 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.

³⁵Result 4 implies that honesty and competence are not necessarily positively correlated. One can certainly think of highly efficient but very corrupt countries, as well as inefficient but relatively clean ones.

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Appendix 1: Proof of Result 1.

It is obvious that each candidate votes for himself. It is also obvious that non-candidates can only condition their vote on the signal the candidates emit. Hence, a candidate's probability of election depends only on his signal. Call P_i the probability of election of a candidate who emits signal $i = s, \bar{s}$. A candidate of type j and signal i will run for office if and only if

$$P_i [\pi - y^j] - \phi \geq 0.$$

Observe that whenever a type- s , signal- s citizen (weakly) prefers to run for office, then a type- \bar{s} , signal- s citizen strictly prefers to run for office. Similarly, whenever a type- s , signal- \bar{s} citizen (weakly) prefers to run for office, then a type- \bar{s} , signal- \bar{s} citizen strictly prefers to run for office.

Call \tilde{C}_i the measure of candidates with signal $i = s, \bar{s}$. If \tilde{C}_s is nonempty, a voter who is not a candidate always votes for a (uniformly drawn) element of \tilde{C}_s over an element of $\tilde{C}_{\bar{s}}$. If voters believe that the ratio of s to \bar{s} types is (weakly) higher in \tilde{C}_i than in \tilde{C}_j , then voting for a member of \tilde{C}_i is weakly dominant. But voters cannot believe that the ratio of s to \bar{s} types is higher in $\tilde{C}_{\bar{s}}$. For, if they do, it means that some s -type, \bar{s} -signal citizens are candidates, and, therefore, *all* low-ability, low-signal citizens are candidates. Given the assumption $(1-s)\mu > 2p$, we then have $\tilde{C}_{\bar{s}} > p$. If voters vote according to their beliefs, this further implies that $P_s = 0$, so \tilde{C}_s is empty: a contradiction. When \tilde{C}_s is empty non-candidates vote for a random member of $\tilde{C}_{\bar{s}}$.

Given this voting behavior it follows that if $\tilde{C}_s \leq p$, then $P_s = 1$ and $P_{\bar{s}} = (p - \tilde{C}_s) / \tilde{C}_{\bar{s}}$; while if $\tilde{C}_s > p$, then $P_s = p / \tilde{C}_s$ and $P_{\bar{s}} = 0$.

Define $\mu_s = \sigma s \mu$, and $\mu_{\bar{s}} = (1 - \sigma)(1 - s)\mu$. Further, define C_i the measure of candidates of true type $i = s, \bar{s}$. Finally, define the following objects:

$$\begin{aligned} P_s^{\min} &= \frac{p}{\mu_s + \mu_{\bar{s}}} \\ p_s^{\max} &= \frac{\mu_s}{\mu_s + \mu_{\bar{s}}}. \end{aligned}$$

P_s^{\min} is the probability that a signal- s candidate will be elected when all signal- s candidates run for office. It is the minimum value P_s can take. p_s^{\max} is the value taken by p_s when all signal- s candidates run for office, and the maximum value that p_s can take. We now argue

that if $P_s^{\min}(\pi - \lambda) - \phi \geq 0$, then $C_s = \mu_s$ and $C_{\bar{s}} = \mu_{\bar{s}}$, so that $p_s = p_s^{\max}$. Suppose not. Then, there are some s -type, s -signal citizens who are not candidates. If these non-candidates deviated and run for office their probability of election would be $\min[1, p/\tilde{C}_s]$, which is strictly greater than P_s^{\min} . But, then, these citizens would strictly prefer to run for office, which is a contradiction.

The rest of the analysis depends on the relative size of $\mu_{\bar{s}}$ and p . Suppose first $\mu_{\bar{s}} \leq p$. Then, consider parameter values such that $P_s^{\min}(\pi - \lambda) - \phi < 0$, but $\pi - \lambda - \phi > 0$. In this region type- s , signal- s citizens must be indifferent between running and not running. If they strictly preferred running, they would all run; but then $P_s = P_s^{\min}$, which leads to a contradiction. If they all preferred not running, then we would have $P_s = 1$, which also leads to a contradiction. We must therefore have

$$\frac{p}{C_s + \mu_{\bar{s}}} [\pi - \lambda] - \phi = 0. \quad (3)$$

This condition determines C_s . Note that C_s falls from μ_s when $P_s^{\min}(\pi - \lambda) - \phi = 0$ to $p - \mu_{\bar{s}}$ when $\pi - \lambda - \phi = 0$. In this interval we also have $\tilde{C}_s \geq p$, so $p_s = C_s/\tilde{C}_s$, or

$$p_s = 1 - \frac{\mu_{\bar{s}}}{\theta p}. \quad (4)$$

For $\pi - \lambda - \phi = 0$ C_s can take any value in the interval $[0, p - \mu_{\bar{s}}]$. For any value of C_s in this interval we have $P_s = 1$. Correspondingly, there is a continuum of equilibria in p_s , $p_s \in [0, 1 - \mu_{\bar{s}}/p]$.

For $\pi - \lambda - \phi < 0$ running for office is not worth the cost for a type- s person even if $P_s = 1$, so we have $C_s = 0$. As long as $\pi - 1 - \phi > 0$, however, we have $C_{\bar{s}} \geq p$. Hence, $p_s = 0$. These observations allow one to draw Figure 1 and verify the claims in Result 1 for the $\mu_{\bar{s}} \leq p$ case.

Suppose instead that $\mu_{\bar{s}} > p$. Then equations (3) and (4) determine C_s and p_s in the region defined by $P_s^{\min}(\pi - \lambda) - \phi < 0$ and $p/\mu_{\bar{s}}(\pi - \lambda) - \phi > 0$. For expected net rewards below this value we have $p_s = 0$. Graphically the upward sloping curve hits the horizontal axis at $\mu_{\bar{s}}/p$, and there no longer is a value of $\pi - \lambda - \phi$ such that there are multiple equilibria. All the claims in Result 1 still follow, though.

Appendix 2: Proof of Result 1'.

A candidate's probability of election depends only on his signal (Appendix 1). Call P_i the probability of election of a candidate who emits signal $i = h, \bar{h}$. A politician can expect $1/p$ bribe-collecting opportunities so if he is dishonest he will collect $\bar{b} = \bar{k}/p$. A candidate of type j and signal i will run for office if and only if

$$P_i \left[\pi - \lambda + (1 - p_h + \eta^j/p)\bar{k} \right] - \phi \geq 0.$$

Whenever a type- h , signal- h citizen (weakly) prefers to run for office, then a type- \bar{h} , signal- h citizen strictly prefers to run for office. Similarly, whenever a type- h , signal- \bar{h} citizen (weakly) prefers to run for office, then a type- \bar{h} , signal- \bar{h} citizen strictly prefers to run for office.

Call \tilde{C}_i the measure of candidates with signal $i = h, \bar{h}$. If \tilde{C}_h is nonempty a voter who is not a candidate always votes for a (uniformly drawn) element of \tilde{C}_h over an element of $\tilde{C}_{\bar{h}}$. When \tilde{C}_h is empty non-candidates vote for a random member of $\tilde{C}_{\bar{h}}$ (Appendix 1). Given this voting behavior it follows that if $\tilde{C}_h \leq p$, then $P_h = 1$ and $P_{\bar{h}} = (p - \tilde{C}_h)/\tilde{C}_{\bar{h}}$; while if $\tilde{C}_h > p$, then $P_h = p/\tilde{C}_h$ and $P_{\bar{h}} = 0$.

Define $\mu_h = \sigma h \mu$, and $\mu_{\bar{h}} = (1 - \sigma)(1 - h)\mu$. Further, define C_i the measure of candidates of true type $i = h, \bar{h}$. Finally, define the following objects:

$$\begin{aligned} P_h^{\min} &= \frac{p}{\mu_h + \mu_{\bar{h}}}, \\ p_h^{\max} &= \frac{\mu_h}{\mu_h + \mu_{\bar{h}}}. \end{aligned}$$

If $P_h^{\min} \left[\pi - \lambda + (1 - p_h^{\max})\bar{k} \right] - \phi \geq 0$, then $C_h = \mu_h$ and $C_{\bar{h}} = \mu_{\bar{h}}$, so that $p_h = p_h^{\max}$ (Appendix 1).

Suppose $\mu_{\bar{h}} \leq p$. Then, consider parameter values such that $P_h^{\min} \left[\pi - \lambda + (1 - p_h^{\max})\bar{k} \right] - \phi < 0$, but $\pi - \lambda + (1 - p_h^*)\bar{k} - \phi \geq 0$, where $p_h^* = 1 - \mu_{\bar{h}}/p$, or the incidence of honest types when $\tilde{C}_h = p$. In this region type- h , signal- h citizens must be indifferent between running and not running. If they strictly preferred running, they would all run; but then $P_h = P_h^{\min}$ and $p_h = p_h^{\max}$, which leads to a contradiction. If they all preferred not running, then we would have $P_h = 1$, and $p_h = 0$, which also leads to a contradiction (since $p_h^* > 0$). We must therefore have

$$\frac{p}{C_h + \mu_{\bar{h}}} \left[\pi - \lambda + \frac{\mu_{\bar{h}}}{C_h + \mu_{\bar{h}}} \bar{k} \right] - \phi = 0. \quad (5)$$

This condition determines C_h . Note that we are using the fact that in this interval we have $\tilde{C}_h \geq p$, so $p_h = C_h/\tilde{C}_h$. When this condition holds C_h , and hence p_h , have all the properties stated in Result 1'.

The next relevant interval is the one in which $\pi - \lambda + (1 - p_h^*)\bar{k} - \phi < 0$ but $\pi - \lambda + \bar{k} - \phi \geq 0$. Here we still have an indifference condition, and p_h is determined by

$$\pi - \lambda + (1 - p_h)\bar{k} - \phi = 0,$$

or

$$p_h = \frac{1}{\bar{k}} (\pi - \lambda + \bar{k} - \phi)$$

For $\pi - \lambda + \bar{k} - \phi < 0$ running for office is not worth the cost for a type- h person even if $P_h = 1$, and $p_h = 0$, so we have $C_h = 0$. As long as $\pi - \lambda + \bar{k} - \phi > 0$, however, we have $C_h \geq p$. Hence, $p_h = 0$. These observations allow one to verify the claims in Results 1' for the $\mu_h \leq p$ case.

Suppose instead that $\mu_h > p$. Then equation (5) determine C_h (and hence p_h) in the region defined by $P_h^{\min} [\pi - \lambda + (1 - p_h^{\max})\bar{k}] - \phi < 0$, but $p/\mu_h (\pi - \lambda + \bar{k}) - \phi \geq 0$, and for lower net rewards we have $p_h = 0$. All the claims in Result 1' still follow.

Appendix 3: Proof of Result 2

Note first that for $\theta < 1$ all high-ability citizens choose private life so their utility is $\lambda - t(0)$. For $1 \leq \theta \leq (\mu_s + \mu_{\bar{s}})/p$ low-signal, high-ability citizens still prefer private life, while high-signal, high-ability citizens are indifferent between private and public life. Hence, they all enjoy utility $\lambda - t(p_s)$. Since in this range p_s is increasing in π , it is clear that the utility of all high-ability members of the initial assembly is increasing in θ . If $\bar{\theta}$ is in this range this completes the argument. If $\bar{\theta}$ is above $(\mu_s + \mu_{\bar{s}})/p$ the utility of signal- s , type- s citizens continues to be strictly increasing for θ between $(\mu_s + \mu_{\bar{s}})/p$ and $\bar{\theta}$, while the utility of signal- \bar{s} , type- s citizens is constant, leading them to side with the signal- s , type- s citizens and go along with $\bar{\theta}$.

Next, we turn to the preferred choice by signal- s , type- \bar{s} citizens. Clearly they will never prefer $\theta < 1$. For $\theta = 1$ these citizens all run for election and are assured of winning a seat, so their utility is $\pi - t(p_s) - \phi = \lambda - t(p_s)$, which – since p_s is indeterminate – varies between $\pi - t(1 - \mu_{\bar{s}}/p) - \phi$ and $\pi - t(0) - \phi$. Hence, they receive *at least* $\lambda - t(0)$. For $\theta > 1$ their

utility is

$$P_s \pi + (1 - P_s) - t(p_s) - \phi = P_s(\pi - 1) + 1 - t(p_s) - \phi$$

where p_s is (weakly) increasing in θ , and P_s is determined by the condition

$$P_s \theta = 1.$$

Hence, in this interval high-signal, low-competence citizens receive utility

$$\frac{(\lambda - 1)}{\theta} + 1 - t[p_s(\theta)] \quad (6)$$

Depending on the function t , it is completely possible for the value of θ that maximizes this function to be strictly less than $\bar{\theta}$. Furthermore, whatever the value of θ that maximizes (6), it may still very well be the case that the maximized value is less than $\lambda - t(0)$, in which case low-signal, low-competence citizens' preferred choice for θ is $\theta = 1$.

Finally, we have to discuss the preferred value of θ for low-signal, low-competence citizens. Suppose that there are no values of θ such that the entire signal- \bar{s} , type- \bar{s} population runs for office. Then these citizens' utility is always $1 - t(p_s)$ so they clearly prefer $\theta = \bar{\theta}$. The case mentioned in footnote 20 arises, instead, if there are values of θ such that the entire low-signal, low-ability population runs for office. The maximum number of candidates with low-signal and low-ability occurs when $p_s = 0$ and $\theta = 1$. If they all run they get

$$\left(1 - \frac{p}{\mu_{\bar{s}}}\right)(\lambda + \phi) + \frac{p}{\mu_{\bar{s}}}\lambda - t(0) - \phi = \lambda - \frac{p}{\mu_{\bar{s}}}\phi - t(0).$$

If one of them deviates then he receives $1 - t(0)$, which may well be less. Assume this is the case. These citizens' utility when $\theta = \bar{\theta}$ is $1 - t[p_s(\bar{\theta})]$. Again, this could easily be less than the utility at $\theta = 1$.

Appendix 4: Proof of Result 1''.

The utility experienced by a private citizen i is:

$$U^i = y^i - t(p_s) - (1 - p_h)\bar{k}. \quad (7)$$

The utility experienced by an elected public officer of type hj is $\pi(p_s, p_h) - \phi - t(p_s)$. The utility experienced by an elected public officer of type $\bar{h}j$ is $\pi(p_s, p_h) - \phi + \bar{k}/p - t(p_s)$.

The utility functions U^i can be represented in the space (p_h, p_s) by indifference curves, one set for each of the two ability types. These indifference curves are downward sloping

and, if $t(p_s)$ is convex, they are convex (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

$$\pi(p_h, p_s) - \phi = y^i - (1 - p_h)\bar{k}. \quad (8)$$

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. In the special case in which π is a constant, the OICs are vertical lines through $p_h = \left(1/\bar{k}\right) \left(\pi - \phi - y^i + \bar{k}\right)$. In the general case, the OICs are upward (downward) sloping if $\delta\pi/\delta p_h < \bar{k}$ ($\delta\pi/\delta p_h > \bar{k}$). The intuition is as follows: $\delta\pi/\delta p_h$ is the marginal increase in social status associated with an increase in p_h , while \bar{k} is the marginal increase in private utility. If social status increases with p_h by less than private utility, in order to keep a citizen indifferent between the two occupations in the face of an increase in p_h it is necessary to further increase status through an increase in p_s . We think that a realistic case is that $\delta\pi/\delta p_h > \bar{k}$ for low p_h , and $\delta\pi/\delta p_h < \bar{k}$ for high p_h . The Inada conditions stated in the text assure this. Hence, OICs for honest citizens are (weakly) downward sloping for low p_h , and upward sloping for high p_h .

OICs for dishonest individuals can be analogously introduced as the locus satisfying:

$$\pi(p_h, p_s) - \phi + \bar{k}/p = y^i - (1 - p_h)\bar{k}. \quad (9)$$

For π constant these OICs are again verticals, though now through $\left(1/\bar{k}\right) \left[\pi - \phi - y^i + \bar{k}(1 + p)/p\right]$. In the general case, they are also weakly downward first and weakly upward sloping for high values of p_h . For pairs (p_h, p_s) above her OIC, a citizen prefers office, while for points to below she prefers to be a private citizen.

Clearly there are four OICs: for honest and competent citizens (hs), dishonest but competent ($\bar{h}s$), honest but incompetent ($h\bar{s}$), and dishonest and incompetent ($\bar{h}\bar{s}$). 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. In other words, theirs is the leftmost (upmost) OIC. 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{hs} and $h\overline{s}$ prefer public office is in general ambiguous. Under our assumption that $\overline{k}/p > \lambda - 1$, whenever (p_h, p_s) is such that $h\overline{s}$ individuals (weakly) prefer to hold office then all \overline{hs} and \overline{hs} individuals strictly prefer to hold public office. In other words, the OIC for $h\overline{s}$ types is above the OICs for \overline{hs} and \overline{hs} types. Finally, the OIC of \overline{hs} types is above the one of the \overline{hs} .

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.

In Figure 4 the map of indifference curves is drawn 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, 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.

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 $h\bar{s}$ and $\bar{h}s$ types. In turn, this implies that there cannot be citizens of type $\bar{h}s$ 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 $\bar{h}s$ or a $h\bar{s}$ type.

In summary, any candidate equilibrium above the diagonal features $p_{\bar{h}s} = P_{\bar{h}s} = C_{\bar{h}s} = 0$. 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: $p_{hs} + p_{h\bar{s}} = p_h^*$, $p_{hs} + p_{\bar{h}s} = p_s^*$, and $p_{hs} + p_{h\bar{s}} + p_{\bar{h}s} = 1$.

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 $\bar{h}s$ to a losing candidate of type $h\bar{s}$. 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 $h\bar{s}$ over a candidate of type $\bar{h}s$.

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 $h\bar{s}$ 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 $\bar{h}s$ types in office. This is inconsistent with our equilibrium concept as voters would then deviate in such a way as 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{hs} 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{hs} strictly prefer to hold public office (recall our assumption on the ranking of OICs). Hence, candidates of type \overline{hs} 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 “conditionally sincere” 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{hs} 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{hs} 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{hs} . 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{hs} candidates would be in excess supply, and it would be possible to replace some of the \overline{hs} office holders (who necessarily hold office in this region). On points on the \overline{hs} 's OIC, instead, the number of \overline{hs} candidates is equal to the number of \overline{hs} 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.

Result 1'' can be verified by examining how the relevant vertical OICS shift as the parameters change.

Figure 1

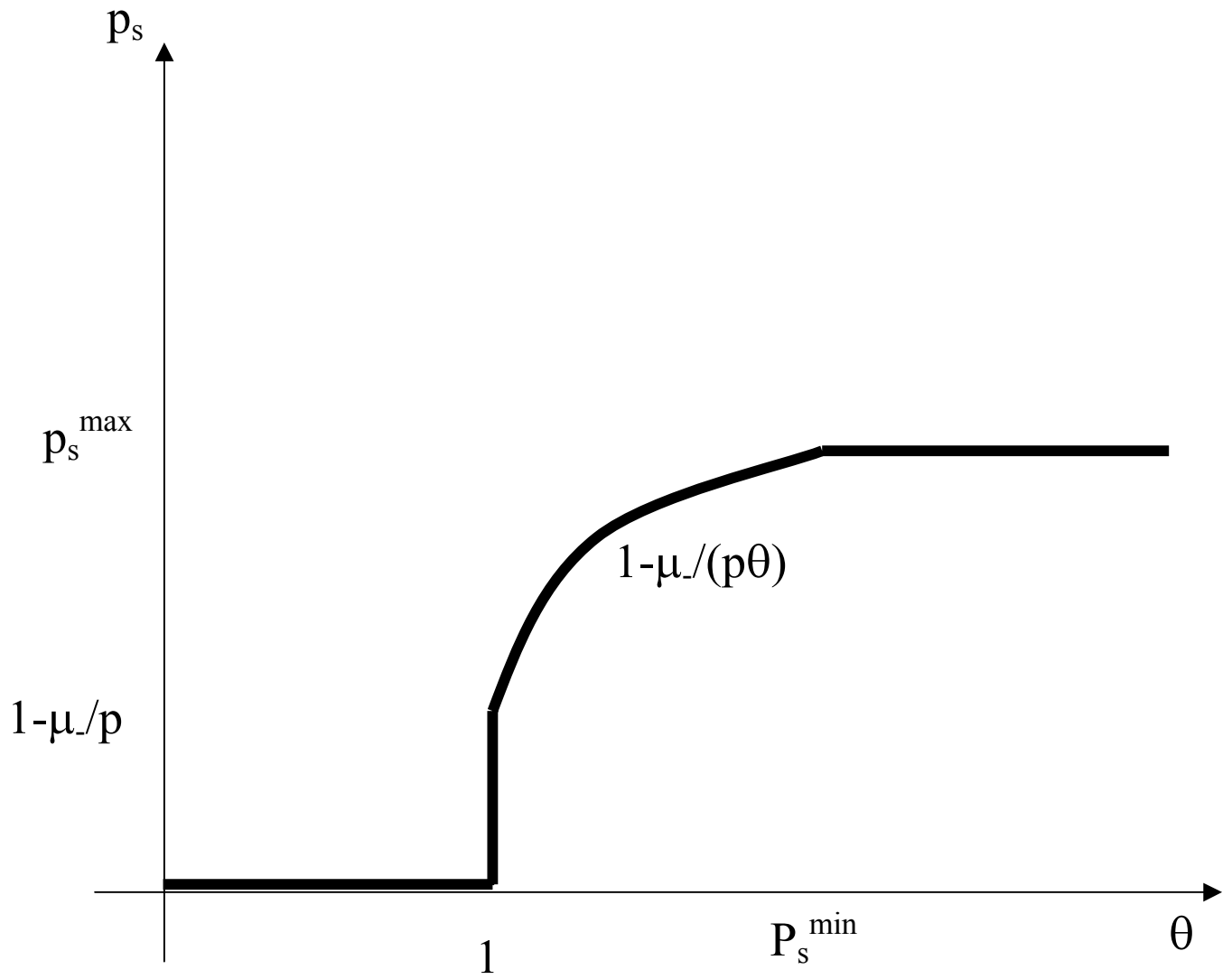
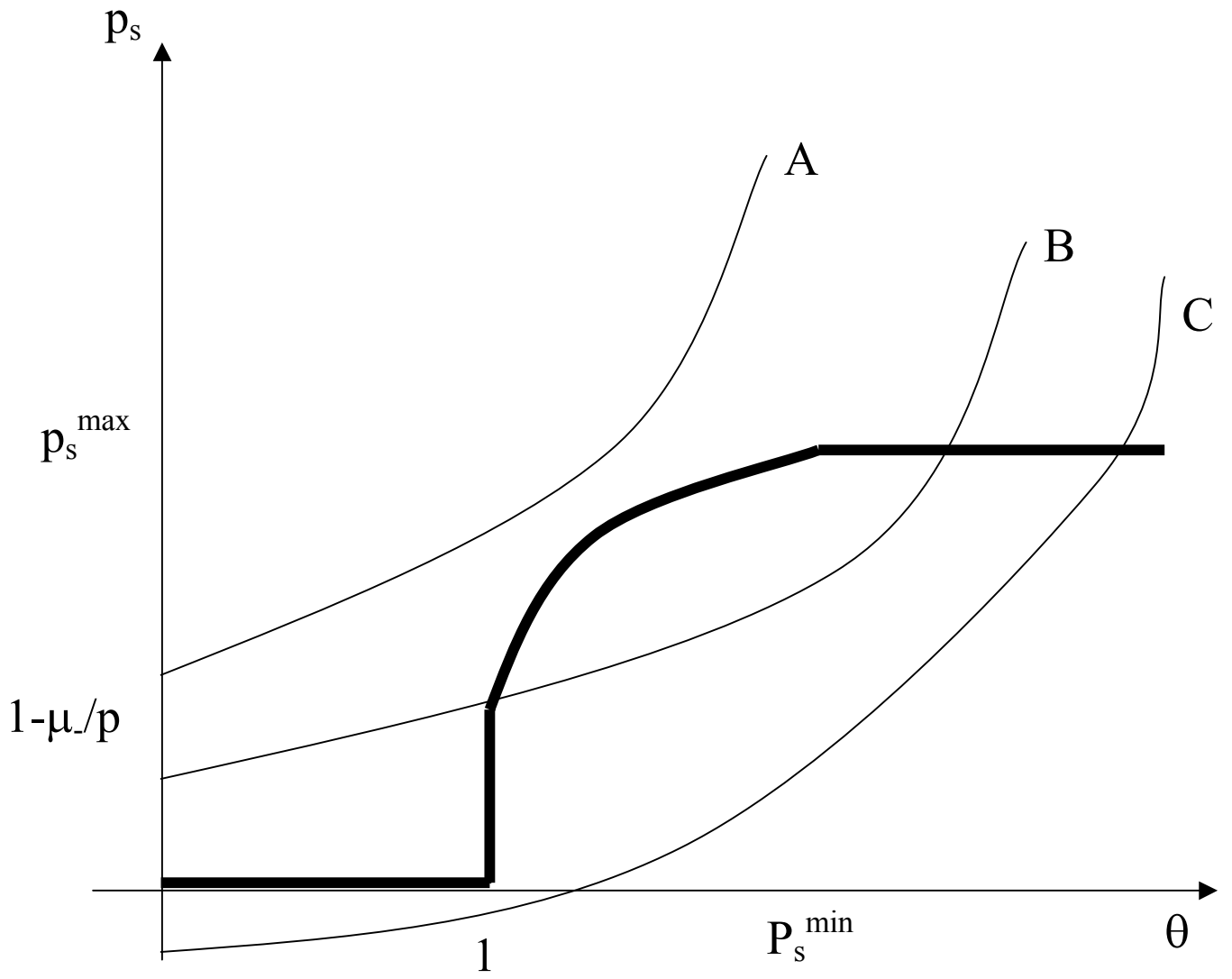


Figure 2



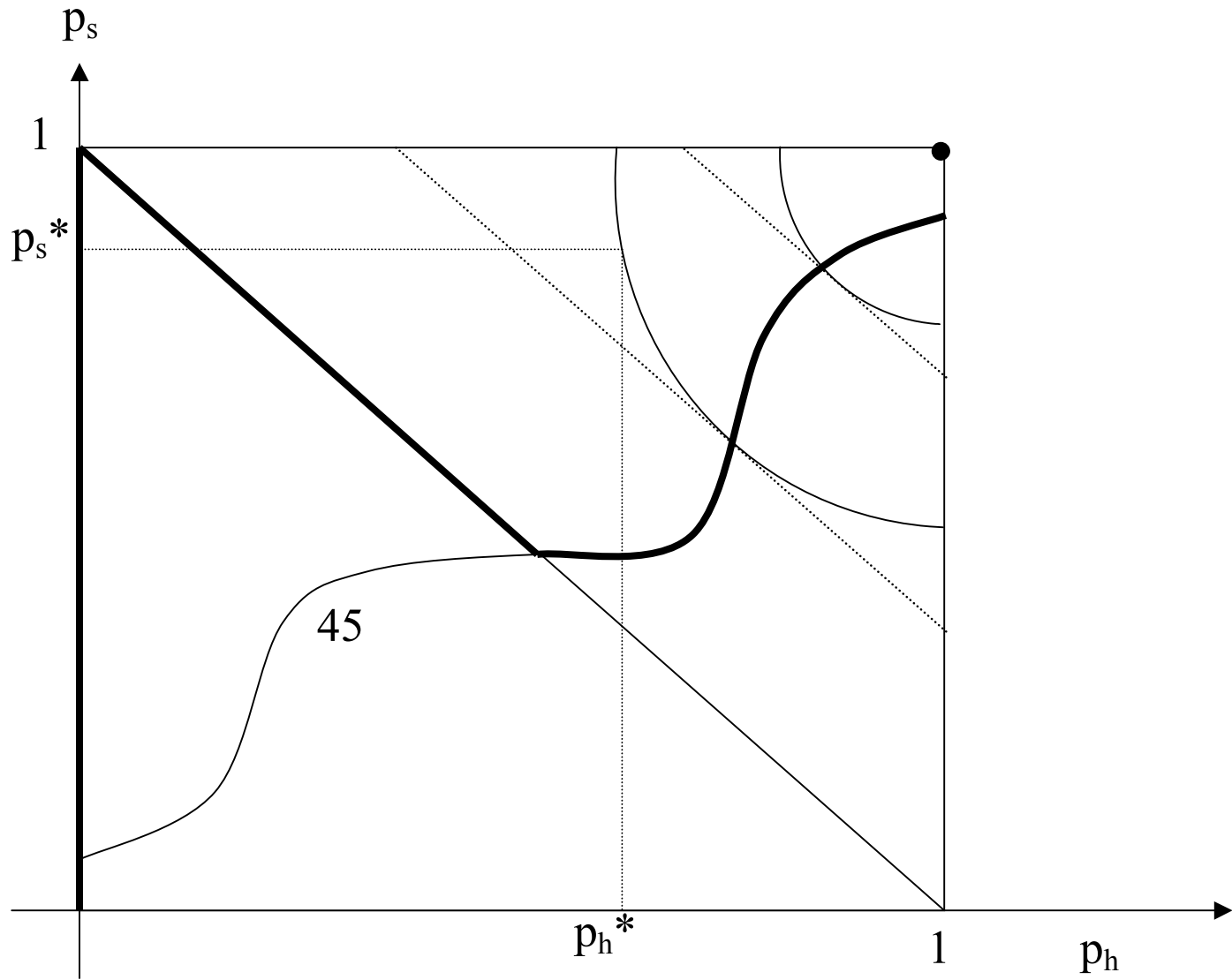


Figure 3