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CHECKS AND BALANCES, RENT-SEEKING AND ECONOMIC DEVELOPMENT

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Checks and Balances, Rent-seeking and Economic Development

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If economic policies in developing countries, such as those that result in rent-seeking, are deficient, but not worse than in developed countries, policy reform may only constitute a partial response to the problems of economic development. This paper argues, however, that policies may be systematically worse in developing than in developed countries and, more importantly, that this may be due to the quality of the political and legal institutions through which policies are made.

A crucial distinction is made between states with institutions that ensure the credibility of the decisions of state officials, by making it costly for them to renege, and states without such institutions. Effective legislatures, independent judiciaries, professionalized bureaucracies and elections are all institutions that make it costly for an executive branch official to reverse policy abruptly. The claim is made, and supported by a description of the decision making process of the Peruvian state, that institutional arrangements such as these are largely absent in developing countries.

Economic agents spend resources to make credible agreements with the state (to reduce the probability that state officials will renege on agreements), to obtain rents from the state, and to avoid expropriation. In those states with credibility-enhancing institutions, firms can achieve greater credibility, fewer rents and less expropriation than can firms in non-credible states, with the same expenditure of resources. This framework permits three conclusions to be made about the nature of firm expenditures on firm relationships with the state. The first, intuitive, result is that expenditures on creating the conditions of credibility and avoiding expropriation are less, and expenditures on productive inputs are greater, by firms operating in a credible state than by firms in a non-credible state. Second, at very low levels of credibility, the risk that the state will renege on its promises to distribute rents outweighs the permeability of the state to the rent-seeking enterprise, so the resources allocated to rent-seeking by firms are actually less in the state without credibility-enhancing institutions. However, when state officials in such a state are somewhat more credible, but still less so than in the credible state, relatively more resources are dedicated to rent-seeking.

The third conclusion is drawn from a different analysis. In non-credible states, non-institutional mechanisms are used to enforce agreements between state officials and firms. The most productive entrepreneurs do not necessarily have the ability to make these agreements at lowest cost (kinship or friendship ties, a history of repeated exchanges, etc.). This suggests that less efficient firms will enter the market in less credible states. These three findings support the conclusion that rent-seeking is systematically more harmful in developing than in developed countries, and that policies aimed at strengthening the institutions of developing countries may play a crucial role in their economic development.

Checks and Balances, Rent-seeking and Economic Development

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Abstract: Rent-seeking is known to be pervasive in developing countries, but a causal relationship between rent-seeking and underdevelopment has not been established. This paper describes how the credibility of agreements between the state and entrepreneurs regarding rents and security from expropriation affects the extent of and damage caused by rent-seeking. To the extent that the government decisions of developing countries exhibit less credibility than those of developed countries, the analysis establishes a systematic, though variable, connection between rent-seeking and economic underdevelopment.

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Checks and Balances, Rent-seeking and Economic Development[1]

In recent articles, Murphy, Shleifer and Vishny (1991, 1993) have widened the debate concerning the costliness of rent-seeking by demonstrating how rent-seeking can lead to dynamic as well as static losses. Although their work recalls an underlying motivation for concern about rent-seeking, its effect on economic development,[2] research in rent-seeking has not yet explained why it would be more destructive in some countries than in others. That is, why do the prevalence and effects of rent-seeking vary among countries? Since rent-seeking is fundamentally a political phenomenon, a logical place to look for such an explanation is the underlying political institutions that shape incentives to seek and grant rents. One important function of such institutions is to ensure the credibility of the rent-seeking agreement. In this paper, several arguments are explored that suggest that the credibility of government decisions, including those through which rents are allocated, is a crucial determinant of the extent and harmfulness of rent-seeking.

Typically in the literature on rent-seeking, the credibility of government grants of rights to rents is taken for granted. The work of Murphy, Shleifer and Vishny (1993), for example, which focuses on the threat that rent-seeking poses to the security of property rights, assumes that rent-seeking agreements themselves are immune to threats of government expropriation. The asymmetrical treatment of credibility, however, may not be appropriate. One of the characteristics of developing countries, for example, is that their institutional structures rarely endow their state decision makers with a great deal of credibility on any decision that they make, including those regarding rents. This

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[1] I have received helpful comments from Christopher Clague.

[2] Krueger (1974) and Bhagwati and Srinivassan (1982) make arguments linking rent-seeking and development.

assertion is supported below with a short summary of a policy making episode in Peru under Alan Garcia. The lack of credibility naturally deters production and innovation, since firms are concerned about expropriation. It also has an impact on incentives to make agreements regarding politically-generated rents. This paper therefore abandons the assumption that rent-seeking agreements are necessarily credible and develops conditions under which rent-seeking might be more extensive, and why the distortions it engenders might be greater, when the state is not credible than when it is.

Two effects of credibility on rent-seeking are analyzed here. First, many of the same institutions that ensure credibility also make rent-seeking more difficult. That is, the rent-seeking agreement is more secure when institutions reinforce government credibility, but the costs of reaching such an agreement are higher. This tradeoff will be examined below. The second effect is the distortion that arises in matching the most efficient entrepreneurs with projects with the highest economic rates of return. This distortion occurs because entrepreneurs are not equally well-endowed with the personal assets necessary to make self-enforcing agreements with non-credible states.

Rent-seeking and Economic Development

Earlier work on the effects of rent-seeking focused on the static losses arising from the misallocation of resources. Estimates of the size of these losses depend, among other things, on the whether the amounts spent on rent-seeking are regarded as transfer payments or wasted resources (Tullock (1967) and Posner (1975) adopt the latter assumption) and on the risk aversion of the competitors in the rent-seeking process.[3] If the resources expended in rent-seeking were solely transfers (such as bribes), then, only in exceptional circumstances, as Varian (1987) demonstrates, would the static

[3] Two comprehensive surveys of the rent-seeking literature are Buchanan, Tollison and Tullock (1980) and Rowley, Tollison and Tullock (1988).

deadweight losses that arise in general equilibrium add up to an amount equal to or greater than the total costs spent in the pursuit of rent-seeking (or monopoly).

Murphy, Shleifer and Vishny (1991) identify dynamic costs of rent-seeking, and explicitly model conditions under which rent-seeking might systematically retard economic growth. They begin with the assumptions that there are increasing returns to entrepreneurial ability, and that productivity growth in the economy depends on the ability of the most able entrepreneur in the productive sector. When rent-seeking is particularly lucrative, they argue, the most able entrepreneurs are drawn from productive economic activities to non-productive rent-seeking. Growth drops because technology advances only at the rate set by the less efficient entrepreneur. They present empirical support for their argument by showing that the study of law (a proxy for the pursuit of rent-seeking activity) is, in some cases, inversely correlated with economic growth.

The question that this work has not addressed is, under what conditions might rent-seeking be worse, or have worse effects? In particular, might rent-seeking be one cause of economic underdevelopment? The work of Krueger (1974) and others suggests that rent-seeking is prevalent in developing countries, and contains startling estimates of the amount of rent-seeking that goes on in them. These estimates do not provide evidence, however, that growth has been particularly handicapped in those countries relative to others because of rent-seeking, nor does this work provide an explanation for why rent-seeking might be expected to be worse in developing countries.

Other empirical work that examines the effect of rent-seeking on growth has generated mixed results. The arguments below provide an explanation for two unexpected findings of this research. Murphy, Shleifer and Vishny (1991) obtain significantly stronger results on the effect of the study of law on growth when they exclude from their sample those countries with fewer than 10,000 college students. Countries of sub-Saharan Africa are likely to be overrepresented in the group of excluded observations, implying that rent-seeking exhibits less of an effect on growth among the poorest countries in the world. The second implication is the finding by Gallagher (1991) that rent-seeking in the countries of sub-Saharan Africa exhibits a positive, although not significant, relationship with the degree of political pluralism; he also finds that rent-seeking is insignificantly related to growth. The analysis below suggests one explanation for these findings. The institutions that endow states with credibility also make rents more costly to pursue. The extreme lack of credibility of government decisions in those countries creates a disincentive for rent-seeking that outweighs the low costs of rent-seeking in such a non-credible environment.

Rent-seeking and Credibility

Rent-seeking agreements specify that the state extend certain privileges in return for some form of payment to the state officials who make the decision regarding the privileges.[4] Officials and entrepreneurs only make these agreements if they are credible. The simultaneous exchange of favors and payment is one way to achieve credibility. In this arrangement, no party is exposed to opportunistic behavior by another. However, rents are often promised in the future in return for payment made in the present. This is the essence of the political campaign contribution, for example, or the grant of a long-term mining or railroad concession in exchange for immediate payments to a particular official. Such agreements must have an enforcement mechanism if they are to be viable.

States can achieve credibility in a number of ways. These include due process guarantees (enforced by an independent judiciary, for example), checks and balances, and informal or ideological restraints on arbitrary and capricious behavior by decision makers. Without restraints on their ability to change policies, decision makers are less credible than they otherwise would be, as are their decisions. James Madison recognized that the absence of restraints would be problematic for the security of property rights, and

[4] This definition encompasses the many forms of rent-seeking detailed in Bhagwati and Srinivasan (1982), including efforts to secure tariff protection, monopoly rights, and the removal of the protections enjoyed by others.

therefore of entrepreneurial endeavor, as have scholars subsequently. Some of these scholars have drawn explicit lessons for economic development from the analysis of government credibility.[5]

Intense research has focused on the non-cooperative game, a rigorous manifestation of the credibility problem. This literature explores the conditions under which self-enforcing agreements can be reached between individuals in an institution-free environment. Typically, when these individuals undertake repeated exchanges, and are uncertain about when the final exchange will occur, equilibria exist in which the incentive presented by future exchange opportunities is sufficient to motivate compliance with the terms of the current exchange.[6]

The emphasis on reputation generated by this literature should not distract attention from the multitude of other mechanisms that are employed to make agreements self-enforcing, however. For example, exchanges that are not naturally simultaneous can be modified so that they become so. Instead of paying in advance for the right to the rents, the recipient of the rents can pay continuously for the privilege for as long as the privilege is maintained. This arrangement is often difficult to achieve, for example when large up-front expenditures are required in order to conduct the economic activity upon which the rents are based.[7] Alternatively, partners in the exchange can be chosen

[5] Levy and Spiller (1993) examine the effects of government credibility on telecommunications regulation in a group of developed and developing countries. Cukierman, Webb and Neypati (1991) examine the independence of central banks. Others have addressed the issue of checks and balances and due process directly. North and Weingast (1989), Grofman and Wittman (1989) and Olson (1992) have all provided a modern perspective on the Madisonian point that institutions are key to government credibility. North and Weingast, in addition, provide evidence from the Glorious Revolution on the economic impact of credibility-enhancing institutional change, and find that interest rates paid by the sovereign dramatically dropped when the sovereign's hands were tied as a consequence of the revolution.

[6] See, for example, Kreps and Wilson (1982), Milgrom and Roberts (1982) and Axelrod (1984).

[7] For example, railroads are extraordinarily vulnerable to changes in the rules of the game, but the large up-front investments that railroad entrepreneurs must make weaken their ability to depend on continuous payments to policy makers to protect the rents upon which they based their investment decision. Having

exclusively from among friends, relatives or members of the same religious or ethnic group. These mechanisms may succeed either because, in the context of these relationships, individuals engage in repeat dealings that form the basis for self-enforcing agreements, or because exchanges among such individuals are accompanied by feelings of altruism that promote compliance.

These mechanisms are not usually available to most people in a society. In the case of repeated dealings, not all potential participants to an exchange are capable of offering assurances that future dealings with them will be sufficiently likely and profitable such that the loss of them as a punishment for reneging would be enough to deter reneging. Similarly, potential exchange partners have different levels of access to family, ethnic or religious ties that may allow exchanges to be enforceable. Udry has found credit transactions in northern Nigerian villages to be extremely informal; collateral plays only a slight role in them. These transactions, however, are almost exclusively between members of the same village or family.[8] Outsiders are unable to collect the information and take advantage of the enforcement mechanisms that allow these transactions to go on inside the family or village. Difficulties such as these, which raise the costs of transactions between private economic actors, are present as well in rent-seeking and political exchanges.

Institutions also can make it costly or impossible for contracting parties to renege on agreements that they have reached. Institutional enforcement has the advantage that it is available at lower cost to a broader segment of society than are alternative mechanisms that permit self-enforcing agreements to be reached. Typically, in considering institutional solutions to the problem of credibility, the state is suggested as the ideal third party enforcer. Indeed, contract enforcement is one of the principal functions of the

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already provided the railroad, they can be held up at any time by opportunistic policy makers. See Keefer (1991).

[8] See Udry (1990). For a description of the role of repeated exchange in politics, see Snyder (1992).

state. In the case of Nigerian credit transactions, outsiders certainly have the option of extending credit in return for collateral. However, the outsider's right to foreclose on collateral belonging to a defaulting borrower is unlikely to be perfect. When the state does not provide this service at sufficiently low cost, outsiders cannot enter and informal markets predominate.

The enforcement issue is considerably more complicated when state officials are parties to exchanges. Rent-seeking agreements are difficult to arrange with state officials who control both the rents and the means to enforce the agreements through which rents are distributed. There are a multitude of mechanisms to control state reneging, however. They share the characteristic that no single state official can commit to or renege on an agreement to which the state is a party. Institutions that require multiple decision makers to approve official actions, and avenues of appeal that are distinct from the channels of decision making, are all manifestations of this characteristic.[9] Checks and balances, federalism, due process in administrative procedures and an independent judiciary all constitute such credibility-enhancing institutions.[10] They are, more than coincidentally, largely absent in developing countries.

Access to these institutions is less dependent on personal relationships. As a consequence, more entrepreneurs enjoy the possibility of ensuring the credibility of agreements with the state than would be the case in their absence. The fact that institutional solutions to the problem of credibility are more widely available does not exclude the use of non-institutional mechanisms. It does mean, however, that the costs

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[9] Congleton (1983) shows that when committees grant rents, rent-seeking expenditures fall. This procedure for granting rents is likely to be more credible than when single officials are in charge of the process. Congleton's argument is different, however, and focuses on the gaming behavior of rent applicants and committee members, which reduces the losses that arise from competitive spending to acquire rents.

[10] A more extensive discussion of the role of these institutions can be found in Keefer (1991).

of credibility borne by those who do not enjoy access to such non-institutional solutions are lower.

An Example of the Lack of Credibility in LDC Government Decision Making: Peru

A systematic investigation of the degree of credibility of the state in developing countries relative to developed countries remains to be undertaken. However, it is difficult to identify the developing country in which the judiciary functions independently, or at all, and in which executive branch decision makers operate within the confines of regularized administrative procedures, public scrutiny and legal restraint.

Even developing countries that have, apparently, democratic institutions, in which the legislature seems to erect imposing obstacles to executive branch decrees, exhibit significant institutional deficiencies that are not generally present in developed countries. First, as the following description of the Peruvian legislative process suggests, even if one were to grant the effectiveness of the legislative check in those countries, it is clear that the decision making procedures of the executive branch in these countries offer great latitude for arbitrary and capricious action. Second, even when the legislatures in these countries are able to throw up barriers to executive action, the lack of an institutional structure capable of shaping plausible counter-proposals and of negotiating cohesively with the executive branch has meant that this check, on those occasions when it is exercised, produces deadlock rather than simply policy movement at a slower rate.[11] Finally, it is not at all clear that the legislative check really exists; many of the liberalizing reforms that have been taken in countries such as Mexico and Argentina have

[11]Shepsle (1988) provides a concise history of the institutional structure of the U.S. House of Representatives that illuminates those characteristics of the House that have permitted it to be a positive actor in the policy making process. How well these characteristics would operate in a fragmented legislature in a parliamentary setting is still a subject for research; however, it seems plausible that specialized committees with agenda control, veto power and the resources to develop alternative proposals would improve the operation of even these legislatures.

been promulgated without explicit legislative approval. All of these defects are in addition to the nearly uniform absence of a well-functioning, independent judiciary.

One example from Peruvian executive branch decision making clarifies the extent to which state officials are unconstrained in developing countries.[12] A perennial issue in developing countries (and elsewhere) is the extent to which workers should be granted permanent tenure rights to their jobs. In 1985 and 1986, the Peruvian Congress debated a law that would grant lifetime tenure after a three month probationary period, a reduction from the three year probation period then in place. While this debate lasted, and even after the law was passed on May 31, 1986, the executive branch issued a series of decrees that were in mutual conflict and in conflict with the law and judicial rulings. On October 4, 1985, the Minister of Agriculture, who held the Labor portfolio while the Minister of Labor was abroad, issued a decree that authorized firms to hire a class of workers who would not be eligible for tenure. This decree was drafted neither in the ministries of Agriculture or Labor, but in the Ministry of Finance.

When the Minister of Labor returned, he immediately issued a decree overturning the October 4 decree. He issued another, on November 28, that provided tax benefits to those firms that created new, permanent jobs. Finally, on July 29, 1986, after Congress' tenure law passed, a new Minister of Labor issued a decree called the Emergency Employment Program (PROEM), permitting firms to contract workers on a fixed term basis, exempt from the requirements of the tenure law. This decree, once again, had been drafted in the Ministry of Finance. The decree was not withdrawn even after two judicial rulings in 1988 rejecting its validity. Nevertheless, in this atmosphere of uncertainty, few firms have hired workers under the PROEM, concerned as they are that the terms of the decree are unenforceable and subject to rapid and unanticipated change.

[12] This decision making episode is one of twelve cases that was collected by the Instituto Libertad y Democracia, Lima, Peru in 1987-88.

This episode highlights several institutional lacunae. First, the ease and rapidity with which ministries issued these decrees are relatively uncommon in developed countries. Even in Britain, not noted for the transparency of its government nor the independent initiatives of its Parliament, major policy changes are usually presaged by widely disseminated white and green papers. Second, the highly improvisational process of decision making impedes any attempt to bring contrary pressure to bear on the policy, and offers public officials substantial discretion to commit or renege on agreements. Third, the judiciary, for a variety of reasons ranging from a lack of independence to a lack of resources, was ignored. Fourth, the costs of negotiation between the executive branch and the Peruvian Congress were sufficiently high so that no attempt was made to integrate ministry proposals into the tenure law. Finally, there were apparently inadequate incentives for the President to step in and demand consistency from his Cabinet. The outcome, evidently, was considerable and unpredictable variation in government policy that reinforced the reluctance of producers to adopt more labor-intensive production processes.

Profit Maximization, Credibility and the Resources Spent on Rent-seeking

One particular avenue through which these institutional shortcomings reduce economic activity is in their effect on rent-seeking. The following discussion suggests two ways in which poor institutions might increase the social costs of rent-seeking. First, when the institutions that enhance the credibility of state officials do not exist, more resources may be devoted to rent-seeking as a fraction of total economic activity. Second, when institutions are inadequate, rent-seeking encourages less efficient entrepreneurs to displace more efficient entrepreneurs in productive economic endeavors.[13]

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[13] A third channel of influence, which is not explored here, is that in the absence of credibility, the resources derived from rent-seeking are more likely to be invested outside the country, joining other

Institutions that make state decisions credible and that protect property rights to productive assets also raise the costs of rent-seeking. In countries with adequate institutions, decisions regarding rents and their first cousin, expropriation, are made by multiple entities, or according to unambiguous rules, or with substantial transparency. All of these characteristics raise the costs to rent-seekers. The concurrence of multiple entities requires rent-seekers to persuade a larger number of individuals and agencies before a decision to obtain a given amount of rents can be made. Unambiguous rules put an absolute limit on the maximum rents that they receive, or make rent-seeking procedures clear. Transparency lowers the costs to opponents in the rent-seeking game of registering their opposition, by lowering their information costs.

The Peruvian example demonstrated an environment in which decrees could be issued without the concurrence of multiple entities, jurisdiction over specific policy areas was highly unstable and ambiguous, and the process of policy making itself was remarkably opaque. These conditions made rent-seeking easier, but at the same time reduced the credibility of rent agreements.

All of this suggests that the costs of rent-seeking depend inversely on the institutions available to protect property rights to productive assets. Murphy, Shleifer and Vishny (1993) assume that where property rights are well-protected, rent-seeking is necessarily less profitable, and that where property rights are unprotected, rent-seeking is necessarily more profitable. In fact, the profitability of rent-seeking depends not only on the amount of rents that can be extracted, but also on the credibility of the government decision that grants them.

The relationship between state credibility and rent-seeking can be examined by looking at the decision-making of two firms, one in a credible state and the other in a non-credible state. Each firm confronts the possibility of government expropriation and

forms of capital flight, than they are in societies where rent-seeking is carried out within the context of institutionally-assured state credibility.

each can pursue rents. Firms can influence the likelihood of expropriation and of receiving rents by expending resources, but the costs and benefits of expending these resources differ in the two cases.

Entrepreneurs can invest resources r in order to raise $\rho(r)$, the probability that the state official will not renege on any agreement (including both rent-seeking and non-expropriation) with the entrepreneur ($0 < \rho(r) < 1$). Resources spent to increase the credibility of exchanges with state officials, consequently, benefit both agreements that shield activities from expropriation and those that allocate rents. It is useful to keep in mind that the allocation of rents to one entrepreneur generally means the "expropriation" of some other economic agent. Resources spent to establish credible relationships with state officials include the costs of wining and dining those officials, locating company offices near the seat of government, hiring less-qualified relatives of government officials, and so on.

In addition, the entrepreneur must spend resources specific to each transaction to persuade the state official either not to expropriate or to provide rents. The threat of expropriation can be incrementally reduced as more resources are promised to the state official. This relationship is given by $\phi(b_1)$, $0 < \phi < 1$; as payments to officials grow, so also does the fraction of the entrepreneur's economic activity that is immune from expropriation, provided that the officials abide by the agreement (that is, depending on the magnitude of $\rho(r)$). . The rents that the entrepreneur can obtain depend on payments of b_2, according to the schedule given by the function $R(b_2)$, $R > 0$. Expenditures of b_1 and b_2 do not guarantee that expropriation will not happen or that the rents will actually be provided. They constitute the terms of the agreement with the official; official compliance with these terms depends on $\rho(r)$.

Entrepreneurs can operate in two possible environments. In one, there are institutions that ensure the credibility of the state; in the other, these institutions are absent and the state is not credible. The problem of the entrepreneur, then, depending on the state that he confronts, is to maximize one of the following expressions, in which "c" designates the entrepreneur facing the credible state and "NC" identifies the entrepreneur confronting the non-credible state.

Non-credible state: $\pi^{nc} = \rho^{nc}(r^{nc})[\phi^{nc}(b_1^{nc})pf(\mathbf{x}^{nc}) + R^{nc}(b_2^{nc})] - \mathbf{wx}^{nc} - r^{nc} - b_1^{nc} - b_2^{nc};$

Credible state: $\pi^{c} = \rho^{c}(r^{c})[\phi^{c}(b_1^{c})pf(\mathbf{x}^{c}) + R^{c}(b_2^{c})] - \mathbf{wx}^{c} - r^{c} - b_1^{c} - b_2^{c};$

The following list summarizes the components of the model.

r: resources spent by the entrepreneur to establish the basis for credible exchanges with state officials.

$\rho(r)$: the probability that the official will comply with the terms of any agreement with the entrepreneur.

b_1: Resources expended to avoid expropriation.

$\phi(b_1)$: The fraction of the entrepreneur's economic activity that is immune from expropriation.

b_2: Resources expended to procure rents.

$R(b_2)$: The rents obtained from the expenditure of any amount of b_2.

As usual, p is the price of this competitive firm's output, $f(\mathbf{x})$ is a well-behaved production function, concave in the vector of inputs, **x**, and **wx** is the cost of those inputs, where **w** is a vector of factor prices. The remaining functions are also assumed to be concave.

Rent-seeking is often modelled as a parasitical process or a tax--rents are available only so long as there is productive economic activity that is conducted outside of the political marketplace (see, for example, Murphy, Shleifer, Vishny (1993)). Under this interpretation of rents, in the above model R would be the rent-seeker's share, α, of the total rents in the society, βY, where Y is total production in the society and where $0 < \beta < 1$ is the fraction of total production that is diverted to rent-seeking. Rents would therefore depend on total productive activity. The total βY could also be thought of as the sum over all firms of $(1 - \phi(b_1))pf$, the amount of each firm's that is production vulnerable to expropriation. The approach is taken here is the same as this, if it is assumed that the firm takes as given the actions of other actors and their reactions to the firm's expenditures of b_1, b_2 and r. The analysis, therefore, abstracts somewhat from the relationship between expenditures on avoiding expropriation and the amount of *R* available.[14]

The formulation adopted here, however, allows for a clearer presentation of both the credibility issue and of the nature of the decision making process of individual firms. First, the issue of credibility of agreements with the state extends both to rent-seeking and expropriation-avoiding expenditures, which is made clear in the model. Second, while from a global perspective, the revenues from rent-seeking must be paid for by other producers or consumers, this burden is not distributed equally, and depends on the ability of each to establish credible agreements with the state, and the resources that they expend to avoid expropriation. The model here allows these decisions to be viewed explicitly.

Firms may decide not to pursue agreements with state officials. Assuming firms receive no rents if they do not spend resources to obtain them ($R(0) = 0$), their payoffs to engaging in economic activity without political action are:

Credible State: $\pi = \rho^c(0)\phi^c(0)pf(\mathbf{x}) - \mathbf{wx}$

Non-Credible State: $\pi = \rho^{nc}(0)\phi^{nc}(0)pf(\mathbf{x}) - \mathbf{wx}$

However, since $\rho^c(0) > \rho^{nc}(0)$ and $\phi^c(0) > \phi^{nc}(0)$--that is, the risk of expropriation when no political investments are made is greater in the non-credible than in the credible case, the alternative of production without the umbrella of an agreement with state officials is less profitable in the non-credible than in the credible case.

[14] It does not abstract from the relationship between these two entirely, however. See Assumptions 1.1.

Assumptions of the Model

There are, more generally, several reasonable assumptions that can be made regarding the relative values of the various functions under the credible and non-credible state. For any given values of r, b_1 and b_2, the following relationships are assumed to hold.

Assumptions 1.1) $\rho^c > \rho^{nc}$ $\phi^c > \phi^{nc}$;

Assumption 1.2) $R^{c}_{b_2} < R^{nc}_{b_2}$ (subscripts indicate derivatives).

Assumptions 1.1 assert that, for any given level of expenditures on enhancing credibility, the state with adequate institutions is less likely to renege on agreements than the state without these institutions (the non-credible state). Similarly, because the decision to expropriate in a credible state requires the concurrence of multiple entities or individuals, any given level of expenditures, b_1, to avoid expropriation by the state results in greater protection under a credible state than a non-credible state. Assumption 1.2 says that the marginal productivity of expenditures to secure rents is greater in the non-credible than in the credible state. This assumption follows from the discussion above, suggesting that rent-seeking is more costly in the credible than the non-credible state. The effects of relaxing this assumption is explored below.

When are Rent-seeking Expenditures Greater?

The firm's problem in both the credible and non-credible cases is to maximize profits with respect to x, r, b_1 and b_2, unless the costs of political activity are such that it chooses not to produce at all, or not to engage in political activity. Maximization produces the following first order conditions, a solution to which is assured by the concavity assumed for the various functions.

2.1) $\rho(r)\phi(b_1)pf_x(x) = w$

2.2) $\rho_r(r)\phi(b_1)pf(x) + \rho_r(r)R(b_2) = 1$

2.3) $\rho(r)\phi_{b_1}(b_1)pf(x) = 1$

2.4) $\rho(r)R_{b_2}(b_2) = 1$

These conditions allow for the examination of two questions: are expenditures on production greater or less when the state is not credible? and, are expenditures to influence government decision making (r, b_1 and b_2) greater or less when the state is not credible than when it is credible? The first proposition suggests, not surprisingly, that some combination of the following must be true when the state is less credible: expenditures on production are less, expenditures on establishing the bases for credibility (r) are greater, and expenditures on insulating assets from expropriation are greater.

Proposition One

Assume that the credible and non-credible firms employ the same production process and must pay the same prices for inputs.[15] Then by condition (2.1) some combination of the following must be true: expenditures on establishing the bases for credibility (r), and on reducing exposure to expropriation (b_1) are less, and expenditures on productive inputs (**x**) are greater, in the credible than in the non-credible case.

Proof: If the credible and non-credible firms pay the same wage, then in equilibrium, $\rho^{nc}(r^{nc})\phi^{nc}(b_1^{nc})pf_{\mathbf{x}}(x) = \rho^{c}(r^{c})\phi^{c}(b_1^{c})pf_{\mathbf{x}}(x)$. However, by Assumptions 1.1,

$\rho^{nc}(r) < \rho^{c}(r)$ and $\phi^{nc}(b_1) < \phi^{c}(b_1)$ for all r and b_1. For the equality to hold, then, given the concavity of all three functions, at least one of the following inequalities must be true:

$r^c < r^{nc}$ so that $\rho^{nc} \geq \rho^c$;
$b_1^c < b_1^{nc}$ so that $\phi^{nc} \geq \phi^c$; or,

$\mathbf{x}^c > \mathbf{x}^{nc}$ so that $f_{\mathbf{x}}^{nc}(x) \geq f_{\mathbf{x}}^{c}(x)$.

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[15] If input prices under the non-credible state are greater, the results of Proposition One are strengthened. If they are less, the results are weakened. It is unlikely that capital is cheaper in low credibility countries. Moreover, even wages to labor, when adjusted for productivity, may be higher in low credibility countries, despite their poverty relative to high credibility countries.

This result does not directly bear on rent-seeking, expenditures on which are given by b_2. It does reinforce the crucial point that at any given level of rent-seeking there is likely to be less economic activity in the non-credible than the credible state. This would create the impression that rent-seeking activity is more harmful in developing countries than in developed countries, when in fact it is the credibility of the state that is suppressing development.

Rent-seeking expenditures themselves may also be greater in countries lacking credible institutions. However, this is not necessarily the case. Although it is more difficult to obtain rents in the credible state, they are more secure once they are obtained, while the reverse is true in the non-credible case--rents are easier to obtain, but the probability that the government will renege on the rent-seeking agreement is higher. Condition (2.4) illustrates the ambiguity. For any given level of r, $\rho(r)$ is greater in the credible case than in the non-credible, while for any given level of b_2, $R_{b_2}(b_2)$ is less. The difference in expected rents between the two states, therefore, is uncertain. Proposition Two provides a concise statement of the conditions under which rent-seeking expenditures in non-credible countries are greater than in credible countries.

Proposition Two

Rent-seeking expenditures, b_2, in the credible state may be greater than, less than or equal to those in the non-credible state, depending on the costs of rent-seeking relative to the credibility of agreements in the two states, as summarized in the following cases:

Case One:

If $\dfrac{R^{nc}_{b_2}(b^{nc}_2)}{R^{c}_{b_2}(b^{nc}_2)} > \dfrac{\rho^c(r^{nc})}{\rho^{nc}(r^{nc})}$, then at least one of the following must be true: $b^{nc}_2 > b^{c}_2$ or

$r^{nc} > r^c$.

Case Two:

If $\dfrac{R^{nc}_{b_2}(b^{nc}_2)}{R^{c}_{b_2}(b^{nc}_2)} < \dfrac{\rho^c(r^{nc})}{\rho^{nc}(r^{nc})}$, then at least one of the following must be true: $b^{nc}_2 < b^c_2$ or

$r^{nc} < r^c$.

Case Three:

If $\dfrac{R^{nc}_{b_2}(b^{nc}_2)}{R^{c}_{b_2}(b^{nc}_2)} = \dfrac{\rho^c(r^{nc})}{\rho^{nc}(r^{nc})}$, then $b^{nc}_2 \geq b^c_2$ and $r^c \leq r^{nc}$ or $b^{nc}_2 \leq b^c_2$ and $r^c \geq r^{nc}$.

Proof: By Condition 2.1, in equilibrium $\rho^c(r^c)R^{c}_{b_2}(b^c_2) = 1 = \rho^{nc}(r^{nc})R^{nc}_{b_2}(b^{nc}_2)$.

Substitute the solution for the firm in the non-credible state into the solution for the credible state. Generate the relevant ratios that are used in the three cases. If the relative ratios are as in Case One, then the conclusion of Case One immediately follows, provided the functions are concave. The logic of the remaining two cases is the same.

Under the conditions of Case One, rent-seeking is likely to be absolutely larger under a non-credible institutional regime than under a credible regime. Case One says that if the ease of rent-seeking (given by $R^{nc}_{b_2}$) in the non-credible state sufficiently outweighs the costs of non-credibility (given by ρ^{nc}), then rent-seeking expenditures are likely to be higher in the non-credible state, with all of the extra costs and distortions that such expenditures entail.

Case One is less likely to hold where the state is particularly non-credible and ρ^{nc} is high. This might be the case with a weak dictator--a leader who can grant rents without seeking the concurrence of any other individual or entity, but whose ability to stay in power or to prevent others from usurping the rents that have been granted to another individual is limited. In this case, the ease of rent-seeking does not compensate the costs of lack of credibility, and one would expect fewer expenditures on rents. Instead, in this environment, one would expect substantial state-ownership, since the state can only be trusted not to renege on itself.

Murphy, Shleifer and Vishny (1991) describe one type of world in which rent-seeking is especially prevalent. In this world "official" rent-seeking sectors, such as the government or the army, divert substantial rents to officials in those sectors, creating incentives for talented individuals to channel their efforts into obtaining membership in these sectors. The argument in this paper is that such a world arises naturally when the state is not credible. One cannot presume that rent-seeking expenditures are greater in such an environment, however, or that the most talented individuals automatically gravitate to the rent-seeking activity, without taking into account the ease with which individuals can make self-enforcing agreements with government officials. If it is difficult to make such exchanges, or the exchanges are not credible, then less rent-seeking may take place than expected, and the most talented individuals may be excluded. Ironically, as the next section discusses, given that the state is not credible, it may be more efficient to have the most talented individuals engage in rent-seeking.

As credibility increases, moving from a weak dictator to a strong one, the difficulties of obtaining rents do not increase, but the rent agreements are more credible. Under these conditions, an increase in credibility actually leads to an increase in rent-seeking. However, as institutions begin to restrain the power of the executive, the ease of obtaining rents may fall faster than the increase in credibility. In this case, the increase in credibility would be accompanied by a reduction in rent-seeking expenditures.

These predictions are consistent with some of the empirical results on rent-seeking in developing countries. Murphy, Shleifer and Vishny (1991) predict that the proportion of students enrolled in (productive) engineering majors has a positive effect on growth, while those enrolled in (rent-seeking) law programs has a negative effect.

They find evidence in support of this prediction, but their results are much stronger when they exclude 36 countries with fewer than 10,000 college students. This group of countries presumably includes most countries of sub-Saharan Africa, which are among the least credible and provide the poorest protection for property rights. Growth in the number of lawyers in these countries does not necessarily represent lower-cost rent-seeking, but rather more credible rental agreements. Increased credibility would be associated with increased growth, despite the increased rent-seeking. This would explain why the results of Murphy, Shleifer and Vishny strengthen when they remove these countries from their sample.[16]

The findings of Gallagher (1990) are similarly puzzling. He discovers that rents as a percentage of GDP in a sample of African countries are *positively*, although insignificantly, related to political pluralism. His index of political pluralism can be loosely taken as a proxy for the presence of institutions that endow the state with credibility. With this assumption in mind, his results suggest that an increase in credibility leads to an increase in rents among the countries he examines.[17] To the extent that the quantity of rents are correlated with expenditures on rent-seeking, his findings are consistent with the conclusions of the model, that over some low range of credibility, rent-seeking expenditures are likely to rise with an increase in credibility.[18]

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[16] It might be concluded from the analysis of Murphy, Shleifer and Vishny (1993), in which rent-seeking agreements are assumed to be credible, that sub-Saharan Africa is closer to subsistence than any other region because the returns to rent-seeking are so lucrative relative to the returns to productive economic activity. However, this conclusion seems to be inconsistent with the empirical findings in their 1991 paper, which may imply that African economic growth is directly, and not inversely, proportional to the level of rent-seeking.

[17] See Gallagher (1991), p. 119. It is difficult to extend his methodology to a broader sample of countries because his measure of rent-seeking concentrates on major policy areas in the African context and are not easily applied to industrialized countries without substantially underestimating rents. Most regulations and non-tariff trade barriers, for example, are omitted from his calculations, which are benign assumptions for an African sample, but are less so for more economically developed countries.

[18] These results might make the Mobutus of the world seem especially puzzling. However, in a non-credible state, one would expect state officials to receive most of the rents directly. Therefore, the fact

However, rent-seeking expenditures, even when they are not absolutely greater in non-credible than credible states, are likely to constitute a large fraction of total economic activity, because the near-complete absence of credibility so severely suppresses productive activities that are disassociated with rent-seeking. The distortions that such rent-seeking expenditures engender, then, are proportionately more severe, even when the expenditures themselves are less. This is demonstrated in Proposition Three.

Proposition Three

In equilibrium, at least one of the following inequalities is true: expenditures to avoid expropriation (b_1) are less, expenditures on economic inputs (x) are greater and expenditures on rent-seeking (b_2) are less in the credible than in the non-credible state.

Proof: By conditions 2.1 and 2.4, the following is true in equilibrium for any firm: $\phi(b_1) = \frac{wR_{b_2}(b_2)}{f_x(x)}$. However, by assumptions 1.1 and 1.2, $\phi^c > \phi^{nc}$ for all b_1 and $R^c_{b_2} < R^{nc}_{b_2}$ for all b_2. The production functions in each regime are assumed to be identical. If the solutions from the non-credible case are substituted into the equation for the credible case, the following inequality results: $\phi^c(b_1^{nc}) > \frac{wR^c_{b_2}(b_2^{nc})}{f_x(x^{nc})}$. In order to restore equilibrium, by the concavity of the respective functions, at least one of the following inequalities must hold: $b_1^{nc} > b_1^c$, $b_2^{nc} > b_2^c$, or $x^{nc} < x^c$.

If the latter two inequalities hold, then the distortions created by rent-seeking expenditures must be greater, relative to the amount of productive economic activity, in non-credible than in credible states, even when the absolute values of rent-seeking expenditures are less in the non-credible states.

that the top leader becomes rich from rent-seeking does not necessarily imply either that rent-seeking expenditures are large relatively to other countries, or that the total rents taken in the society are large.

The analysis obscures another, somewhat obvious, consequence of the lack of credibility, which is that the costs imposed by the lack of credibility reduce the number of firms that are inclined to engage in production. For some entrepreneurs, profits from their activity are insufficient to offset the costs of making credible agreements in the non-credible environment. Of this group of entrepreneurs, some choose not to engage in production at all, but would have in a credible state. This reinforces the conclusion that expenditures on rent-seeking are likely to be a greater fraction of total economic activity in the non-credible state.

The strength of the conclusions in Propositions Two and Three are greater to the extent that the assumption $R^{c}_{b_2} < R^{nc}_{b_2}$ for all b_2 holds, but the assumption is neither a necessary nor sufficient condition for the propositions to hold, given Assumptions 1.1. The formal analysis has also suppressed the relationship between ϕ and ρ, on the one hand, and R_{b_2}, on the other. These are driven in part by the same institutional framework. When institutions make the threat of expropriation higher, they lower the costs of rent-seeking. As credibility increases, then, ϕ , $\rho$and R_{b_2} all increase. If the security of the rent-seeking agreements increases faster than their costs, then rent-seeking expenditures go up faster. If they increase more slowly, rent-seeking expenditures may decline. The empirical evidence, merely suggestive though it may be, provides some support for the assertion that, beginning from a situation of anarchy, increasing state credibility first leads to an increase and then to a decrease in rent-seeking, as the security of rent agreements with the state first increases faster, and then more slowly, than the costs of making those agreements.

Rent-seeking and the Efficiency of Production

The previous sections demonstrate that when the state is not credible, there is less economic activity. They also describe the circumstances under which the lack of state credibility can induce entrepreneurs to pursue rent-seeking more intensively. This section explores an additional cost that arises when the state is not credible. In the absence of state credibility, less efficient producers may displace the more efficient in those economic activities that benefit from government-granted rents, because the more efficient entrepreneurs may not be able to make self-enforcing agreements with officials to obtain those rents. Under most plausible conditions, this raises the social costs of rent-seeking.

When the state is credible, more efficient entrepreneurs who are denied an opportunity to obtain political rents can undertake alternative endeavors in which the pure economic (as opposed to the sum of economic and politically-generated) rates of return could actually be higher than in the activity associated with rent-seeking. Under these circumstances (which mirror the assumptions employed by Murphy, Shleifer and Vishny (1991, 1993)), the denial of rent-seeking opportunities to the most efficient entrepreneur increases output and growth. However, when entrepreneurs are denied rent-seeking opportunities because they cannot make credible agreements with the state, the economic consequences can be quite different.

In the non-credible world, some of the more efficient entrepreneurs do not have the personal assets (kinship or friendship ties or a history of repeated dealings with state officials, etc.) to make credible agreements with the state. Because the market for these assets is highly imperfect, it is not necessarily true that the most efficient producer, despite his willingness to bid the most, can actually acquire them. State officials are likely to grant rents to less efficient producers as a consequence of the bargaining disadvantage borne by the more efficient producer, allowing the less efficient producers to take over the economic activities associated with those rents.[19] The two cases

[19] This effect is only diluted if the winner of the rents contracts with the more efficient producer to manage production. However, this requires credible agreements between the inefficient and efficient producers that may be no more likely than self-enforcing agreements between the state and other the more efficient producer.

analyzed below describe the conditions under which this substitution leads to more or fewer efficiency losses in the non-credible than in the credible state.

Assume that there are two projects, one with a high economic (as opposed to total) rate of return and one with a low economic rate of return, indexed by *h* and *l*. Each project can be undertaken either by a more or less efficient producer, indexed by ***e*** or ***n***. The economic rates of return to these projects are given by x_j^i, where i =(*e*, *n*), and j = (*h*, *l*). The state can either be credible or non-credible. Assume that the rents to the projects, provided that the entrepreneur can obtain them, are the same in the credible and non-credible state. The rents are given by r_k where *k* indexes whether the project is the high or low (*h* or *l*) economic return project. The total rate of return to a project, then, is given by (x + r).

In the absence of assets such as kinship ties, entrepreneurs in the non-credible world must engage in economic activities without the benefit of rent-seeking and without agreements with the state that protect their assets from expropriation. The opportunities open to them are therefore likely to have lower total rates of return than those available to entrepreneurs able to make self-enforcing agreements with state officials. It is clear that projects with high political returns are in the exclusive domain of those with the ability to make self-enforcing agreements with state officials. However, even projects with high economic rates of return are likely to be denied to entrepreneurs unable to make self-enforcing agreements. The assets necessary to undertake economic activities with high rates of return are likely to be more valuable and more vulnerable to expropriation than the assets of other, less lucrative activities. Self-enforcing agreements are therefore more necessary for such activities.

In the credible world, the most efficient producer pursues those activities that have the highest total rate of return. In the non-credible world, only those equipped with the necessary political assets are able to pursue the highest total return projects, because only they can make the agreements with the state necessary to obtain rents and to protect high value assets from expropriation. As a state becomes less credible, the personal characteristics necessary for making self-enforcing agreements become more important, and the fraction of efficient firms that are excluded is likely to rise.[20]

For simplicity, the analysis deals only with two firms. The efficient firm is assumed to lack the assets needed to make self-enforcing agreements with state officials in the non-credible world. In addition, it is assumed here that the efficient producer actually undertakes some project in the non-credible state, although in countries that lack credible institutions many efficient producers simply do not enter the market. It is straightforward to demonstrate the conditions under which the losses to rent-seeking are greater in the non-credible world.

Case One: $x_h + r_h \geq x_l + r_l$

When the rents attached to the low economic rate of return project (project *l*) do not exceed the rents from project *h*, or exceed them by less than the difference $(x_h - x_l)$, then the project with the highest economic rate of return also has the highest total rate of return. In the credible state, under this condition, rent-seeking creates no distortions in the matching of high-efficiency producers to projects with high economic returns.

In the non-credible state, however, the high efficiency producer undertakes the low return project, and the low efficiency producer, who possesses political assets, undertakes the high return project. The losses that are incurred from this particular distortion are of two kinds. Static losses arise when $x_h^e - x_h^n > x_l^e - x_l^n$, that is, when the efficiency losses from the less efficient producer operating in project *h* are greater than the efficiency gains from the more efficient producer operating in project *l*. This is likely to be the case. For example, the difference in economic rates of return between the most

[20] To the extent that none do, credibility does not influence the efficiency of rent-seeking in the sense described in this section.

and least efficient software producer is surely much greater than the difference between the most and least efficient steel company.

Dynamic losses are also incurred, in the sense that Murphy, Shleifer and Vishny (1991, 1993) describe. Economic growth is slower when the most efficient (innovative) individuals are drawn away from those industries where innovation has the greatest payoff. In their analysis, individuals choose between rent-seeking and productive activity, so they describe the diversion of individuals away from productive activity to rent-seeking. Here, where firms and individuals undertake rent-seeking in conjunction with their productive activity, losses arise when higher political returns in industries with low returns to innovation draw away the most innovative entrepreneurs from those industries in which there are high returns to innovation, but lower total returns.

Case Two: $x_h + r_h \leq x_l + r_l$

In Case Two, rents to the low return project are sufficiently large such that total returns to the low economic return project are greater than the total returns to the high economic return project. In the credible state, then, the most efficient producer actually undertakes the project *l*, creating losses parallel to those described for the non-credible state in Case One. In the non-credible state, on the other hand, the inefficient producer with the ability to make credible agreements undertakes project *l*. The efficient producer pursues the project with lower total returns, project *h* in this case.

Under the conditions of Case Two, then, fewer distortions arise in the non-credible state, in the sense that the non-credible state correctly matches the efficiency levels of the producers with the economic rates of return of the projects. This paradoxical result, however, depends on a particular distribution and size of rents that seems less plausible: the highest rents are associated with the least profitable industries, and those rents are sufficient to make investments in those industries more lucrative than investments in other industries. Even if rent-seeking characterized industries that are struggling more than those that thrive, it is far from clear that the rents that struggling industries obtain are sufficient to make such industries regularly more profitable than the others. Protection for the steel industry has not endowed it with particularly high total rates of return relative to other, less protected industries. In general, then, it is probable that the distortions that rent-seeking creates by mismatching firms and projects are worse when the state is not credible.

Conclusion

The connection between rent-seeking and economic underdevelopment has long been implicit in many discussions of rent-seeking and development. This paper explicitly links these concepts by introducing the credibility of the state into the analysis. The paper begins with the key premise that the institutions that endow states with credibility affect both the costs and security of political agreements. In the particular case of agreements between firms and state officials, the paper presents several conclusions.

First, the extent to which rent-seeking expenditures rise or fall depends on the costs of obtaining rents and the credibility of the agreements that are made. Under plausible assumptions, political institutions that affect government credibility affect investment in rent-seeking in ways that mirror empirical observation. Where states are sufficiently anarchic, the insecurity of rent agreements outweighs the ease of rent-seeking; further decreases in credibility lead to decreases in economic activity of any kind, including rent-seeking. Under these conditions, consistent with evidence regarding rent-seeking in Africa, an increase in credibility would lead to an increase in rent-seeking and in growth. However, at some point as credibility increases, the increased costs of rent-seeking may outweigh the increased security of the rents obtained, and rent-seeking expenditures can decline.

The second conclusion of the paper is that state-granted privileges are likely to be more costly, "per privilege", in non-credible than in credible states. In non-credible states, it is more likely that the most efficient entrepreneur will not engage in activities with the highest rates of return, including those that involve rent-seeking, because of an inability to make self-enforcing agreements with state officials. In a credible environment there would be no barriers to such an individual. Provided that the activity with the most rent-seeking also has the highest total rate of return in the credible environment, the most efficient individual would engage in it, incurring the lowest efficiency losses. Under these, likely, circumstances, rent-seeking is more costly in the non-credible environment--the environment that characterizes most developing countries. These various arguments, then, provide an analytical foundation for the intuitive connection between rent-seeking and underdevelopment; this foundation is the credibility of the state.

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