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Inclusiveness and the Exchange of Political Support for Rent

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ABSTRACT

In this paper, governments maximize their political support, obtained by creating wealth and also by creating rent. Starting from a support maximum, economic reforms are feasible only when combined with political reforms that make the economic changes support-increasing. A competitive economy with low rent seeking and low protectionism maximizes support only when inclusiveness, as defined here, is high. When support is maximized, political stability depends on the sensitivity of support to changes in rent and wealth, and the quest for support causes inclusiveness to change. Depending on comparative political advantage, it can become either the road to serfdom or the road to an inclusive society. The approach here contrasts with selectorate theory in which political advantage depends on the size of a 'winning coalition.'

JEL Classifications: D72, H00, H19.

Key Words: Rent Seeking, inclusiveness, political support, economic/political linkage, comparative political advantage.

Inclusiveness and the Exchange of Political Support for Rent

'Democracy is the worst possible form of government—except of course for those other forms that have been tried from time to time.'

--Winston Churchill

I. Introduction

This article is about the trade-off between wealth creation and rent creation as sources of political support, using an approach that differs from those based on the idea of a 'winning coalition.' In three classic papers, Tullock [1967], Krueger [1974], and Posner [1975] identified rent seeking as a major cause of poor economic performance. More recent studies show a negative effect of rent seeking on growth [Del Rosal 2011, pp. 316-17; Murphy, Shleifer, and Vishny 1991], and rent seeking is linked to economic and social ills such as corruption, protectionism, low socio-economic mobility, inequality before the law, secrecy in government, and the 'middle income trap [Gill and Kharas 2007].'

Here 'rent' refers to distributional rent, which arises from restrictions on supply, and 'rent seeking' refers to competition for these rents by rent seekers who offer political support in return. Support takes the form of money, resources, information, image building, suppression of dissent, intimidation of rivals, etc. Depending on conditions, rent seekers may include special interests, public officials, or police and military. Each government is assumed to maximize its support, which is the key to political power, and to use its leverage over the creation and allocation of rent to this end.

The property of a political system that deters rent seeking is 'inclusiveness,' indexed by ψ. If insiders are those who receive distributional rent and outsiders are all others, ψ is the share of outsiders in government support when support is maximized. If ψ is low, secrecy, rent seeking, and protectionism will be high, as will be the value of political power and the cost of losing power. Political reforms that raise ψ will lower rent seeking and the value of political power, while raising efficiency. In *Why Nations Fail*, Acemoglu and Robinson [2012] also associate inclusiveness with efficiency, albeit without defining inclusiveness in a quantifiable way (pp. 74-75; 80-81). Because the quest for political support links the economic and political systems, differences in the former are often rooted in differences in the latter. If we start from a political support maximum, economic reforms are feasible only if combined with political reforms that make the economic changes support-increasing.

This paper makes two contributions. First, it derives a general support function, U, with inclusive and non-inclusive elements, and ψ as parameter. It shows how changes in ψ imply changes in economic, social, and political outcomes, which gives a way of measuring ψ. It also gives institutional requirements for inclusiveness to be high—in particular, it explores the role of institutions of restraint—and gives conditions under which rent seeking thrives and under which it fails as a source of political support. Second, it enquires into the stability of ψ and asks how the quest for support causes ψ to change. Depending on comparative political advantage—whether a government can gain support by making political reforms that raise or lower ψ—this quest can become either the road to an inclusive society or the road to serfdom. The approach here contrasts with the selectorate theory of Bueno de Mesquita, Smith, Siverson, and Morrow [2003], in which political advantage depends on the size of a minimal 'winning coalition.' Criticisms of Bueno de Mesquita et. al. suggest the approach of this paper as an alternative.

Thus we first set out a model of political support maximization and show how inclusiveness affects this maximum. Sections on the institutional requirements of high inclusiveness, on comparative political advantage and its determinants, and on the selectorate theory of Bueno de Mesquita et. al. follow. A final section summarizes and concludes. A glossary defines the symbols used here, and an appendix solves an extended basic rent-seeking model, which is the starting point for this paper.

II. Basic Concepts

Here wealth creation will mean production of useful output, Y, which indexes aggregate present plus expected future consumption, the latter measured in present value. Suppose we have an economy producing useful output and rent seeking. Let $(A^*_1 \ldots A^*_N)$ be the equilibrium rent-seeking outputs of the N active rent seekers, which sum to $A^* = \Sigma_k A^*_k$ and let $(G^*_1 \ldots G^*_N)$ be their equilibrium profits from rent seeking, which sum to $G^* = \Sigma_k G^*_k$. Let Y be the output of useful products valued in competitive prices and ψ index inclusiveness. Then A^* indexes political support provided or financed by rent seekers in return for rents, and $(Y - G^*)$ is the part of Y that is not rent-seeking profit. We take Y as numeraire.

An actual or potential government is assumed to maximize its support, indexed by U, on the assumption that every other entity contending for power does likewise. The support of each entity depends on expected values of the variables above that would hold if that entity were to become the government. Given the choices available, a government will divide G^* into $(G^*_1 \ldots G^*_N)$ and A^* into $(A^*_1 \ldots A^*_N)$, and will distribute $(Y - G^*)$ in a way that maximizes U for any given G^*, A^*, Y, and ψ, assuming rent seekers to be profit maximizers who reach a Nash equilibrium, as described in the appendix. U can then be written as $U = u[(Y - G^*), G^*, A^*; \psi]$, where u is assumed to be a second-order continuous, strictly quasi-concave function that is non-decreasing in A^*, G^*, and $(Y - G^*)$, with marginal support values u_{A^*}, u_{G^*}, and $u_{(Y-G^*)}$.

If V^*_k is the distributional rent received by rent seeker k, for $k = (1 \ldots N)$, and P_{A^*} is the price in units of Y of political support provided or financed by rent seekers, $P_{A^*}A^*_k + G^*_k = V^*_k$, since $P_{A^*}A^*_k$ is the cost of A^*_k in units of Y. Letting $V^* = \Sigma_k V^*_k$ be total distributional rent, we have:

$$V^* = G^* + P_{A^*}A^*. \qquad (1).$$

Let GDP $= P_{A^*}A^* + Y = V^* + (Y - G^*)$ be gross domestic product or national income, the sum of expenditures or of incomes in the rent-seeking and useful output sectors. Then $(Y - G^*)$ is also GDP or national income net of distributional rent, $(\text{GDP} - V^*) = (Y - G^*)$, as well as the income from producing Y, and V^* is the income from producing A^*.

There are two kinds of efficiency loss from rent seeking. The direct loss is the Y that is not produced because some inputs are producing A^* instead. The indirect loss is from the allocative and X-inefficiency within Y that results from the restrictions on supply and other interventions used to generate the rent that pays for A^*—see Comanor and Leibenstein [1969]. The appearance of this inefficiency is equivalent to a fall in Y valued in the former competitive prices, and we define $Y^i_{A^*}$ be the indirect change in Y from the increase in V^* when A^* increases by a unit and $MC^i_{A^*} = -Y^i_{A^*}$ to be the marginal indirect cost of this increase.

Let Y, A^*, and ψ be fixed. Then the support-maximizing division of any Y into $(Y - G^*)$ and G^* occurs where $u_{G^*} = u_{(Y - G^*)}$ if $G^* > 0$. When each Y is divided in a support-maximizing way, G^* becomes a function of Y, A^* and ψ, and $u[(Y - G^*), A^*, G^*; \psi]$ becomes $U = U(Y, A^*; \psi)$. Thus:

$$U = u[(Y - G^*), G^*, A^*; \psi] = U(Y, A^*; \psi) \text{ and } u_{G^*} = u_{(Y - G^*)} = U_Y \qquad (2).$$

at the support maximum when $G^* > 0$. For simplicity, (2) ignores the error that arises because a change in G^* is also a change in V^*, which has an indirect effect on Y. As we shall see, however, if support continues to be maximized, a change in A^* along a production frontier entails a change in G^* in the same direction. We define $MC^i_{A^*}$ to include the indirect effects on Y of both sources of change in V^*—that is, of the entire change in V^* when A^* increases by a unit.

III. The Opportunity Cost of Rent Seeking

Let TR be the production frontier in A^* and Y with marginal rate of transformation $MRT = A^*_L/(Y_L + MC^i_{A^*}A^*_L)$ when A^* is plotted on the vertical axis, where A^*_L and Y_L are the marginal products of labor in A^* and Y. Here Y_L is the marginal direct cost of transferring a unit of L from Y to A^*, and $MC^i_{A^*}A^*_L$ is the marginal indirect cost. In the short run we assume diminishing returns to labor in both sectors and in the long run different factor proportions in the two sectors, along with constant returns to scale. As a result, TR is strictly concave from below in both the long and short runs when $MC^i_{A^*}$ is non-decreasing in A^*.

Let the U-subscript denote support-maximizing value and let (Y_U, A^*_U) be the point on TR that maximizes $U(Y, A^*; \psi)$. Then the first-order condition for an internal maximum of U is:

$$MRS = U_Y/U_{A^*} = (P_{A^*})^{-1} = MRT = A^*_L/(Y_L + MC^i_{A^*}A^*_L), \qquad (3).$$

where MRS is the marginal rate of substitution of Y for A^*. If $U_Y/U_{A^*} > MRT$ everywhere along TR, U is maximized at E_M, defined as the point where $A^* = G^* = 0$ and Y reaches its maximum value, say Y^M. This is the only efficient point on TR.

Because $V^* = \text{GDP} - (Y - G^*)$ valued in units of Y is finite, there can be no support maximum where $MRT = 0$, since P_{A^*} and V^* would then be infinite because of (2). Let Y^m be the output where V^* reaches its feasible maximum, say $(V^*)^m$, and let $(A^*)^m$ and $(G^*)^m$ be the corresponding values of A^* and G^*. As shown below, when the isoquants of U change, V^*_U, A^*_U, and G^*_U all change in the same direction. Thus $(A^*)^m$ and $(G^*)^m$ are also the maximum values of A^*_U and G^*_U along any TR, and Y^m is the minimum value of Y_U. If $Y < Y^m$, U will be lower than at E_m where E_m is the point $(Y^m, (A^*)^m)$. Thus all possible support maxima lie between E_m and E_M. At E_m, GDP valued in units of Y also reaches its feasible maximum along TR, owing to the strict concavity of TR from below. However, this perverse behavior is solely the result of including distributional rent in GDP since $(Y - G^*) = (\text{GDP} - V^*)$ reaches its maximum at E_M. Subtracting distributional rent makes all the difference, and (GDP – V^*) is a better measure than GDP of aggregate economic performance.

Figure 1(a) below shows a support maximum at E_M, Figure 1(b) shows a maximum at E_m, and Figure 1(c) shows an intermediate maximum. The portion of TR to the left of E_m is omitted in each of these graphs because the support maximum cannot lie there. Suppose a political change causes the isoquants of U to become flatter, thereby lowering MRS and raising $(MRS)^{-1}$, the demand price of A^*, at each (Y,A^*). From the theory of convex sets, this causes A^*_U to rise and Y_U to fall along any given TR. The demand for political support from rent seekers rises, and the demand for Y falls.

Likewise, suppose that TR becomes steeper for any given support function, U, in the sense that MRT rises (and $(MRT)^{-1}$, the supply price of A^*, falls) at each ratio, A^*/Y. Then A^*_U/Y_U again rises, as long as the substitution effect of this shift determines the direction of change. Finally, suppose that labor and capital are complements in each sector in the sense that an increase in one raises the marginal product of the other. Then an economy with a relatively steep short-run TR—implying a comparative economic advantage in rent

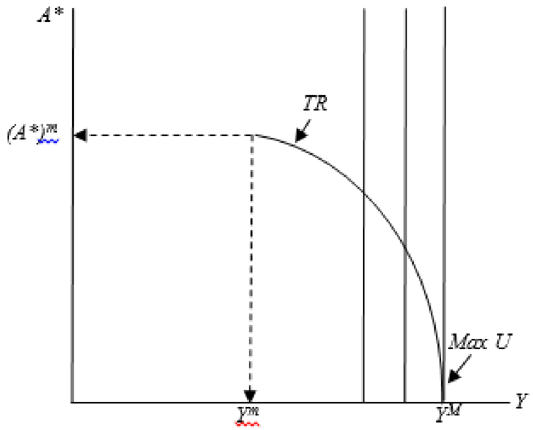

Figure 1(a)

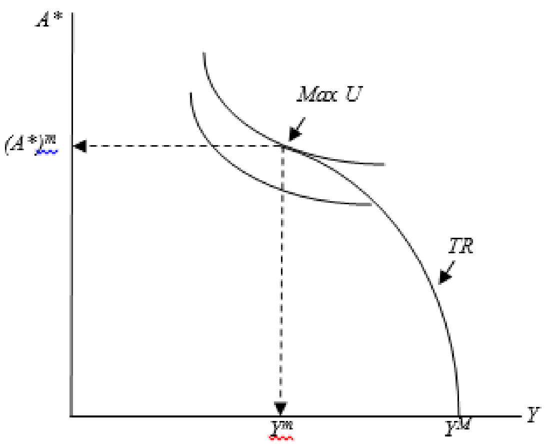

Figure 1(b)

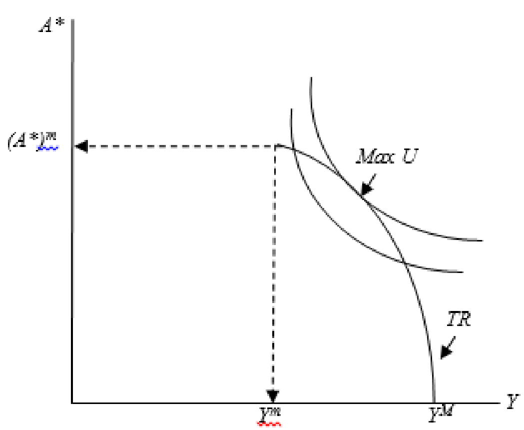

Figure 1(c)

seeking vs. useful output—is one that is well endowed with capital specialized to rent seeking, reflecting a high past demand for rent-seeking support. As we shall see, this implies low past values of ψ.

When the isoquants of U become flatter—as in the shift from U^B to U^C in Figure 2(a)—and this change persists, a multi-fold increase in A^*_U/Y_U occurs. In the short run, the rise in the demand price of A^* moves the support maximum up a given short-run TR to a higher A^*_U and lower Y_U—eg., from B to C in Figure 2(a). In the long run, the share of total capital specialized to A^* rises, which lowers the supply price of A^*, causing short-run TR to shift, eg., from TR_2 to TR_1 in Figure 2(b). This leads to a second increase in A^*_U/Y_U, from C to D. As will be shown, further changes to the political system are then likely that make the isoquants of U flatter still, giving rise to further rounds of increases in A^*_U/Y_U. Inclusiveness determines how flat or steep the isoquants of U will be.

IV. The Effect of Inclusiveness on the Exchange of Political Support for Rent

In a *non*-inclusive political system, government extracts rent from outsiders and transfers this to insiders—or gives insiders the means to do this—in return for political support or the means of support. Thus insiders are rent seekers whose support depends on the distributional rent they receive, whereas the support of outsiders depends on the income that remains after rents have been extracted. As will be shown, when ψ is low, V^*_U will be high, implying relatively strong restrictions on supply that produce relatively high rents. When ψ is high, V^*_U will be low, and markets will be more competitive.

Government's total support, U, is assumed to depend on ψ and to be a non-decreasing function of the support, U^I, from rent seeking and the support, U^O, from useful output. Assumptions (a) and (b) then determine U: (a). U^O is assumed to be an increasing function of (GDP – V^*) = (Y – G^*), the income from producing Y, with marginal support value $U^O_{(Y-G^*)}$. For simplicity, we assume that U^O is also outsider support. U^I is assumed to be a non-decreasing function of sA^*. Here $s(G^*,A^*)$ is government's expected share of total rent-seeking support, A^*, with $s_{G^*} \geq 0$ and $s_{A^*} \leq 0$, since an increase in A^* spreads a given G^*

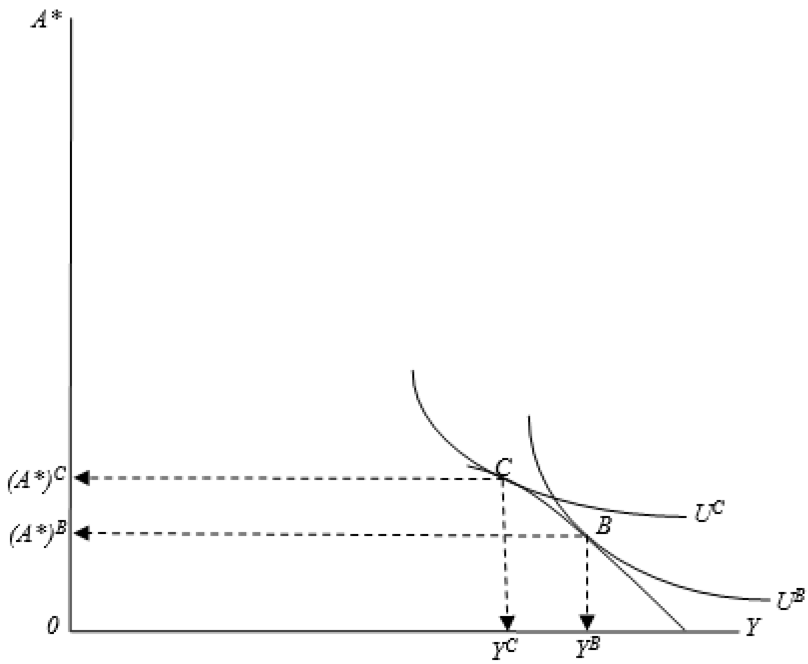

Figure 2(a)

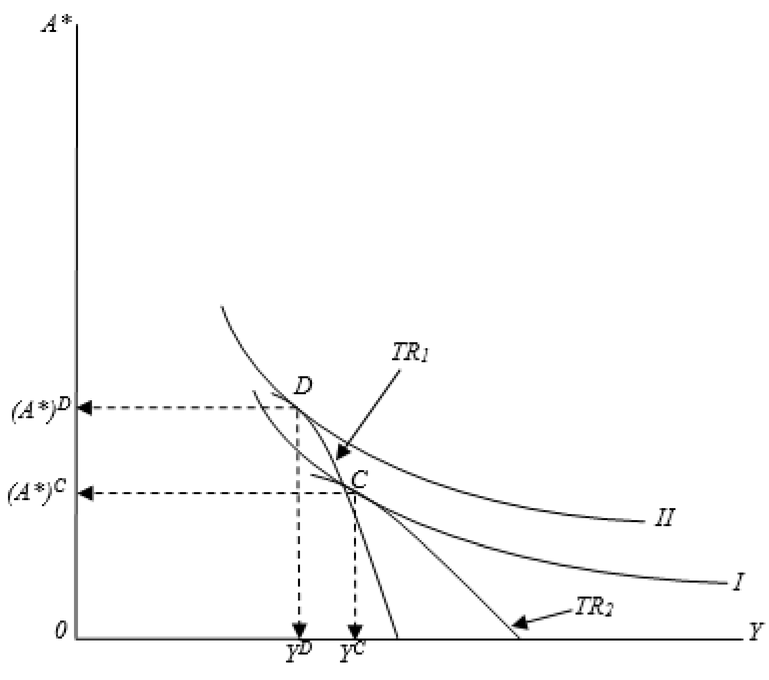

Figure 2(b)

over more units of A^*. U^I is also assumed to be non-decreasing in A^* and G^* with marginal products, $U^I_{A^*} = U^{II}(s + s_{A^*}A^*)$ and $U^I_{G^*} = U^{II}(s_{G^*}A^*)$, where $U^{II} \geq 0$ is the increase in U^I when sA^* increases by a unit. $U^I_{A^*} \geq 0$ implies a loyalty requirement, $\varepsilon_{sA^*} = (s_{A^*}A^*/s) \leq 1$, at the support maximum. When A^* rises by x percent, s can fall by no more than x percent. (b). Let inclusiveness, ψ, index a government's reliance on outsiders for support, interpreted as the share of U attributable to U^O when U is maximized. Let $(1 - \psi)$ index its reliance on insiders. Then ψ depends only on the political system.

For any given ψ, (a) and (b) imply that U is Cobb-Douglas in U^I and U^O:

$$U = u[(Y - G^*), G^*, A^*; \psi] = [U^O(Y - G^*)]^{\psi}[U^I(G^*,A^*)]^{(1 - \psi)}. \quad (4).$$

When $\psi = 1$, $U = U^O$ and $A^*_U = G^*_U = V^*_U = 0$. The support maximum is at E_M where $(Y_U - G^*_U) = Y_U = Y^M$, the maximum value of Y and of $Y - G^*$ on TR. The political system with highest inclusiveness is also the maximally efficient economic system with highest useful output for any given TR. If $\psi = 0$, $U = U^I$, implying $U_Y = 0$. From (2) and (3), P_{A^*} and V^*_U would then be infinite. Thus ψ varies between ψ_m and one, where $\psi_m > 0$ is the value of ψ that gives a support maximum at E_m, the point of maximum rent extraction. Since the ability to extract rent is limited, U always depends on over-all economic performance, and is never from rent alone, although the weight of $Y - G^*$ is increasing in ψ. Using (4), we can write (3) as:

$$U_Y/U_{A^*} = u_{G^*}/u_{A^*} = U^I_{G^*}/U^I_{A^*} = (P_{A^*})^{-1} = MRT = A^*_L/(Y_L + MC^i_{A^*}A^*_L), \quad (3a).$$

at the support maximum when $G^* > 0$, since $U_Y/U_{A^*} = U^I_{G^*}/U^I_{A^*}$ then holds.

A final assumption is (c). There are non-increasing returns to $(Y - G^*)$ in U^O in the sense that the second partial derivative, $U^O_{(Y - G^*)(Y - G^*)}$, is non-positive. Also G^* and A^* show diminishing returns and complementarity in U^I, in that the second partials, $U^I_{G^*G^*}$ and $U^I_{A^*A^*}$, are negative and the mixed partial, $U^I_{G^*A^*} = U^I_{A^*G^*}$, is positive. As a result, U^I is strictly quasi-concave. A government uses increases in G^* to give rent seekers stronger incentives to support it, thereby raising U^I and $U^I_{A^*}$ at each A^*.

When $\psi < 1$, (4) implies that the ratio of $u_{(Y - G^*)}$ to u_{G^*} is given by:

$$u_{(Y-G^*)}/u_{G^*} = [\psi/(1-\psi)](U^I/U^O)(U^O_{(Y-G^*)}/U^I_{G^*}). \qquad (5).$$

Since $u_{G^*} = u_{(Y-G^*)}$ is necessary for dividing Y into $(Y - G^*)$ and G^* in a support-maximizing way, suppose that $u_{G^*} = u_{(Y-G^*)}$ holds initially at each (Y,A^*). As a result, $MRS = U^I_{G^*}/U^I_{A^*}$. A fall in ψ then lowers $u_{(Y-G^*)}/u_{G^*}$ at each point $((Y-G^*), G^*, A^*)$. By assumption (c) this requires G^* to rise and $(Y-G^*)$ to fall at each (Y,A^*) in order to restore equality. In turn, the increase in G^* causes $U^I_{G^*}/U^I_{A^*}$ to fall, while the decrease in $(Y-G^*)$ does not affect $U^I_{G^*}/U^I_{A^*}$. Thus a decrease in ψ lowers MRS at each (Y,A^*), while an increase in ψ raises MRS.

The new support maximum following a fall in ψ must therefore be where MRT is lower (where TR is flatter) than at the old maximum. As a result, A^*_U must rise, and Y_U must fall—the most basic effect of a fall in ψ. The isoquants of U become flatter in (Y,A^*) space, as in the shift from U^B to U^C in Figure 2(a), raising the demand price, $(MRS)^{-1}$, of A^*. It follows that Y_U is increasing and A^*_U is decreasing in ψ. Despite the fall in Y_U, G^*_U also rises when ψ falls, for otherwise the support-maximizing value of $U^I_{G^*}/U^I_{A^*}$ would rise, by assumption (c). Both G^*_U and A^*_U are positive when and only when $\psi < 1$. In the classical solution [Krueger 1974; Posner 1975], $G^*_U = 0$ owing to perfect competition between rent seekers. Here, however, increases in G^* have support value, and G^* is therefore positive—implying that rent seekers enjoy some protection from competition—when A^* is positive.

Because A^*_U and G^*_U are decreasing in ψ, while Y_U and MRT_U are increasing, V^*_U is also decreasing in ψ. As governments rely more on insiders for support, they need more distributional rent, which requires them to become more protectionist. Thus V^*_U, A^*_U, and G^*_U are positively correlated along any given TR. Since A^* has rising supply price, GDP_U valued in units of Y is decreasing in ψ and is maximized at E_m, the point of maximum rent seeking. Because $\text{GDP} = P_{A^*}A^* + Y = (MRT)^{-1}A^* + Y$ when (3) holds, we get:

$$d(\text{GDP}_U)/d\psi = dY_U/d\psi + A^*_U[d((MRT_U)^{-1})/d\psi] + (MRT_U)^{-1}[dA^*_U/d\psi] = A^*_U[d((MRT_U)^{-1})/d\psi] < 0, \qquad (6).$$

since $(MRT_U)^{-1}dA^*_U = -dY_U$ along any TR. If two economies, I and II, have the same TR frontiers, but rent seeking is higher in II, GDP will be higher in II and Y will be higher in I, owing to the strict concavity of TR from below.

Over time, a persistently high investment in rent seeking relative to that in useful output makes TR steeper at any given A^*/Y, which decreases P_{A^*}, offsetting the increase in A^* as TR shifts outward. Here ψ is low, and the growth of Y will be low because Y has a low investment priority. The net result is a low growth of GDP = $P_{A^*}A^* + Y$, which sooner or later leads to relatively low GDP, if ψ remains low, as the effect of slow growth owing to the outward shift of TR eventually overcomes the effect of GDP being relatively high on any given TR. If $\psi = \psi_m$, this is apt to be a low-income trap for outsiders, whereas if ψ remains above ψ_m, it could be a middle-income trap, since what constitutes 'middle income' is itself rising over time.

Let $X^V = V^*/\text{GDP} = 1 - [(Y - G^*)/\text{GDP}]$ be the share of V^* in GDP. Then $X^V{}_U$ is decreasing in ψ along any given TR since it is decreasing in $(Y_U - G^*_U)$ and increasing in GDP_U. A good estimate of how nations rank in terms of their shares of distributional rent in GDP is also a good estimate of their inverse ranking in terms of ψ—especially when ψ is constant over time—since past values of ψ determine the shape of short-run TR by determining how investment is divided between the A^* and Y sectors.

The relatively high value of $X^V{}_U$ when ψ is low also has implications for the political and socio-economic environments in which decisions are made. First, the transfer of large rents from outsiders to insiders limits the extent to which a government can be impartial between the two groups and, in particular, subordinate itself to an impersonal rule of law that treats them equally. Second, rent seekers will try to preserve their privileges into the future—to gain ownership of them, in effect. This constrains equal opportunity and upward socio-economic mobility.

Third governments become more protectionist as ψ falls. Investments that raise Y_U but lower V^*_U by intensifying competitive pressures on existing rents become more and more likely to lower U. These include investment in innovation and in new product R&D. Since increases in A^* imply increases in rent and in the supply restrictions that generate this rent, they crowd out innovation and new product development by lowering the return on such investment, reinforcing the low- or middle-income trap. Finally, as ψ falls and the political influence of outsiders wanes, insiders gain greater control over the distributions of income and wealth. This implies growing insecurity of private and other non-state property rights held by outsiders, which further discourages innovation and new product R&D, except for projects that government explicitly approves. Further discouragement results from the 'dictator's dilemma' described below.

Define corruption as the use of public office for personal gain. Then a polity with low inclusiveness will have relatively high levels of corruption and secrecy. Corruption is a form of rent seeking, and when ψ is low, governments will award positions with opportunities for corruption in return for political support. The support of a corrupt official or other insider is then more valuable to government than when ψ is high, while the support of outsiders who bear the cost of corruption is less valuable. Widespread corruption also gives a ruler grounds for purging insiders he wants to replace [Hillman and Schnytzer 1986].

When ψ is low, a government will be secretive, in order to conceal the loss of ($Y_U - G^*_U$) from rent seeking and extraction of rent. This loss increases as ψ falls, raising the incentive to hide the loss. Thus we would expect ψ to correlate positively with transparency in government across nations. This gives a way of determining how nations rank in terms of ψ.

V. Inclusiveness and Competition for Political Support

A political system is stable when there is no tendency for ψ to change. This stability depends on the sensitivity of political support to changes in rent and in useful output, albeit in a different way when ψ is high then when ψ is low. To see this, note that when $\psi < 1$, $MRS = U^I_{G^*}/U^I_{A^*} = (s_{G^*}A^*)/(s_{A^*}A^* + s)$ at the support maximum. If A^*_U is high, MRT will be low at the support maximum, and the same has to be true of MRS since $MRS = MRT$ must hold. Given the loyalty requirement above, s_{A^*}/s and s_{G^*}/s must then be tiny in numerical value, so that s is highly insensitive to changes in G^* and A^*, implying a low level of competition for insider support, which also increases s. If s is too sensitive to such changes, $MRS = MRT$ can hold only if A^*_U is low, and if ψ is low as well, U will be moderate to low. This is a potential Achilles heel of a polity with low inclusiveness, since it can open the door to a government that wants to raise inclusiveness. Even over the range of values of $A^* < A^*_U$, the constraint, $V^*_U \leq (V^*)^m$, limits how sensitive s can be to changes in G^* and A^* without forcing A^*_U to be low.

However, an absence of effective competition for insider support and the resulting absence of choice for insiders could make s high at low values of G^* and A^* and insensitive enough to changes in these variables to allow the support-maximizing value of A^* to be high. As a result, $U^I = sA^*$ will be high, and Y_U and U^O will be low along any given TR. A low level of ψ is then necessary for U to be high, and a political system with low inclusiveness will be stable. Conversely, a higher degree of competition for the support of both insiders and outsiders can cause U to be increasing in ψ. Such competition can cause A^*_U and G^*_U and therefore U^I to be relatively low and Y_U to be relatively high. There is an important caveat, however. If political power is highly fragmented among competing political parties, at least one potential government may find that $U^I > U^O$ will hold, should it come to power. This gives it an incentive to make political changes that lower ψ, on which more below.

Thus a stable government when ψ is high requires competition for political power, but not too much, while a stable government when ψ is low requires sharp limits on such competition. A political system is most vulnerable to these requirements following a change in ψ. When ψ remains constant, they become easier to meet over time. If ψ remains high, an economy will develop a comparative economic advantage in Y vis-à-vis A^* by accumulating capital specialized to Y. This makes TR flatter by lowering MRT at each A^*/Y. In turn this makes a highly inclusive polity easier to sustain since it makes $MRS = MRT$ easier to achieve at low values of A^*/Y. Likewise, if ψ remains low, an economy will develop a comparative economic advantage in A^* vis-à-vis Y by accumulating capital specialized to A^*. A comparative economic advantage in A^* makes $MRS = MRT$ easier to achieve at high values of A^*/Y, thereby making low inclusiveness easier to sustain.

VI. Institutional Requirements for Inclusiveness to be High

A 'liberal' democracy combines institutions of representation, which translate popular preferences into government policy, with institutions of restraint—such as an independent and impartial police and judiciary and a free press—that uphold basic rights and freedoms and limit government abuse of its power [Rodrik (1), 2014]. By upholding transparency and impartiality, such institutions make it harder for rent seeking to raise political support, forcing greater reliance on aggregate economic performance; they also make the link between policy and performance more evident. An autocracy may lack both kinds of institutions, whereas 'illiberal' democracies lack effective institutions of restraint.

These institutions are the backbone of an inclusive political system [Zakaria 1997]. As Rodrik notes, they can result from competition for power when such competition causes power to rotate among competing political entities. This motivates creation of institutions that protect defeated governments and their supporters from abuse of power by their successors. Effective institutions of restraint lower the cost to government leaders and their supporters of losing or otherwise leaving power, which leads to governments ruling for shorter periods of time on average when ψ is high than when ψ is low. Greater restrictions on the use of political power resulting from institutions of restraint also make power less valuable when ψ is high, which further lowers the penalty for losing power. When ψ is high, losers of political competition are more willing to leave political office voluntarily, which helps to establish conditions for institutionalizing political competition in periodic and peaceful elections that enable power sharing via rotation of power over time.

Institutions of restraint constrain the actions of governments and strong special interests and raise the cost of maintaining secrecy. Thus they are likely to face attempts to erode their effectiveness. To survive and remain effective, these institutions therefore need at least one politically powerful patron, such as a strong political party, that gains support from their presence and actions and is therefore more likely to hold power. This patron may lose support on occasion, owing to decisions of an impartial judge or to revelations of an investigative journalist, but would have lower support still if it tried to undermine these institutions. Effective institutions of restraint do not always require democracy. Suppose that external pressures or opportunities make it impossible for a government to survive unless it maintains an efficient economy, eg., because of military competition or because it is part of a free-trade bloc. Then even a dictator has an incentive to promote effective institutions of restraint, and ψ will be high.

Because U is always increasing in (Y – G*), complete inclusiveness (ψ = 1) occurs when increases in A* are unable to raise U. Then a government can only maximize its support by maximizing (Y – G*) = (GDP – V*) and Y at E_M. Since effective institutions of restraint usually support electoral competition with universal suffrage, secret ballots, free and fair elections, and political support measured in votes, suppose these conditions hold and that voters vote to maximize their expected incomes valued in units of Y. Then a crucial variable is the cost to voters, C^g, of monitoring their alternatives well enough to choose efficiently among them. Rent seeking will fail if C^g is always low, regardless of A* and G*, and if the utility gained from monitoring is high enough that becoming an informed voter is consistent with utility maximization. In this context, one function of institutions of restraint is to supply low cost information that is useful in making political choices—that is, to keep C^g low. Empirically, a low probability that politicians will be able to extract rent in secret is a key to limiting rent extraction in a democracy [Chang, Golden, and Hill, 2010].

Suppose again that voters vote to maximize their expected incomes and that political support is measured in votes. From what was said above, a low value of ψ in a democracy then implies some combination of the following, each of which lowers the sensitivity of U^O to changes in (Y – G*): (1). Voting is denied or coerced or otherwise not free and fair, ballots are not secret, and/or suffrage is not universal. An example is illiberal democracy in which repression and/or illegitimate voting are used to alter election outcomes. (2). Voting is not informed because C^g is too high. A high cost of becoming informed allows politicians to court outsider votes by using the politics of identity, deflecting blame for economic malaise toward people of different nationalities, ethnicities, religions, ideologies, and cultures, etc. [Rodrik (2)2014]. Outsiders may also be led to over-estimate their wealth—eg., via creation of asset price bubbles that are not perceived as such—resulting in a high demand for Y via the wealth effect. The bursting of these bubbles then leads to a fall in perceived wealth and thus in demand, causing a recession to follow the boom.

VII. Comparative Political Advantage

Different governments bring different skill sets to producing political support. Some are relatively good at inspiring insider loyalty while others are more charismatic and persuasive with large numbers of voters. An actual or potential government will be said to have a comparative political advantage in U^I at any point on TR if $U^I > U^O$ holds there. It has a comparative advantage in U^O if $U^O > U^I$. A government with a comparative political advantage in U^I can raise its support if it is able to change the political system in a way that lowers ψ. A government with a comparative political advantage in U^O can gain support by raising ψ. Comparative political advantage depends on initial supply conditions—specifically on comparative economic advantage—and on whether a support-maximizing government is better at competing for the support of insiders or for the support of outsiders. Comparative economic advantage reflects past investments and thus past values of ψ.

Suppose that ψ is midway between one and ψ_m when a government with a comparative political advantage in U^I comes to power. If such a government is able to lower ψ, A^*_U and G^*_U will rise, and Y_U will fall, which strengthens the original comparative advantage by raising U^I and lowering U^O. In absence of external pressures or opportunities or of non-co-operative behavior by outsiders—in the form of strikes, passive resistance, riots, demonstrations, armed uprisings, etc.—that lowers U, the incentive to lower ψ grows stronger until $\psi = \psi_m$ is reached. The incentive to accumulate capital specialized to rent seeking also rises as ψ falls. A prior comparative economic advantage in rent seeking makes a comparative political advantage in U^I more likely, and a prior comparative political advantage in U^I leads to accumulation of rent-seeking specialized capital, which makes a comparative economic advantage in rent seeking more likely. Comparative political and comparative economic advantage reinforce one another.

If a government has a comparative advantage in U^O when ψ is mid-range, the incentive to keep raising ψ will grow stronger as ψ rises until $\psi = 1$ holds, unless external pressures/opportunities or non-co-operation by insiders prevents this. Thus the quest for political support can become either the road to serfdom ($\psi = \psi_m$) or the road to an inclusive society ($\psi = 1$), depending on where initial comparative political advantage lies. Political and economic systems that are initially similar can become quite different in consequence. If $U^I = U^O$, when ψ is mid-range, no comparative political advantage exists there, but equally no stable equilibrium, since a slight change of ψ will create a comparative advantage in U^I or U^O.

To incorporate a government's ability to compete for support into (4), let 'inherent' loyalty be defined as loyalty that stems from shared attributes, values, goals, experiences—more generally, from factors other than G^*. We rewrite s as $s = s(\lambda, G^*, A^*)$. For any given G^* and A^*, λ indexes the ability of a government to compete for insiders' support, which depends in particular on how effectively it can command inherent loyalty from insiders. Thus s is increasing in λ, as is U when $\psi < 1$, and for any given A^* and G^*, different governments may have different values of λ, eg., because some rulers inspire greater inherent loyalty than others. However, there is also a trade-off between loyalty and competence. When a given government raises the weight of inherent loyalty as a success criterion for insiders, thereby choosing a higher value of λ, the weight of competence is assumed to fall. Such an increase therefore shifts TR inward by an amount that is likely to become smaller as V^* rises, since the protections and restrictions that create rent lower the demands on managerial and administrative ability.

Let TR now be the production frontier in λ, A^*, and Y and assume that (2) holds. Then the first-order conditions for maximizing U, besides (3a), are that the marginal rates of substitution between λ and A^* and between λ and Y should equal the corresponding marginal rates of transformation. In addition λ is assumed to be a substitute for G^* and a complement with A^* in the sense that increases in λ lower s_{G^*} and raise s_{A^*}. Thus besides increasing the support-maximizing values of s and U when $\psi < 1$, they lower $MRS = U^I_{G^*}/U^I_{A^*} = (s_{G^*}A^*)/(s_{A^*}A^* + s)$. Increases in λ de-sensitize s to changes in G^* and A^*. When λ is low, a ruler is unable to dominate competition for insider loyalties, and U will be low when ψ is low. This can also be an opportunity for a government with a comparative political advantage in U^O to take power and raise ψ.

By contrast, consider a case ruled out by the assumption that U^O is increasing in $(Y - G^*)$. Assume instead that U^O is non-decreasing in $(Y - G^*)$, and suppose that λ is so high that U^I eventually becomes completely insensitive to further increases in G^* and A^*. If lack of political competition also makes U^O insensitive to further increases in $(Y - G^*)$, U will reach a maximum at a point inside TR. A government able to command this much loyalty can also implement policies that are wasteful, in the sense of keeping the economy inside TR—eg., by subjecting it to ideological constraints—or which enrich government members at the expense of the rest of society without losing support in consequence.

Let θ index a government's ability to compete for outsiders' support at any given $Y - G^*$. Once again different potential governments may have different values of θ for any given $Y - G^*$. We rewrite U^O as $U^O(\theta; (Y - G^*))$, where $U^O{}_{(Y - G^*)}$ is assumed to be increasing in θ. An increase in θ makes U^O more sensitive to changes in $(Y - G^*)$, making a comparative political advantage in U^O more likely, while an increase in λ makes a comparative political advantage in U^I more likely.

Finally, suppose that non-co-operation by insiders trying to preserve their support value and rents is able to lower U. Then a government with a comparative political advantage in U^O can gain support by accepting a negotiated outcome, $\psi_N < 1$. Likewise if non-co-operation by outsiders is able to lower U, it will force a government with a comparative political advantage in U^I to accept a negotiated outcome, $\psi_B > \psi_m$. When non-co-operative behavior is a threat, the political system represents a bargaining outcome between insiders and outsiders, in which insiders negotiate to maximize U^I, since this determines their wellbeing in the new system, and outsiders negotiate to maximize U^O.

Because any government is likely to have a comparative political advantage in either U^I or U^O, efforts by governments to raise their support will move ψ away from mid-range toward either ψ_m or one unless external pressures/opportunities or non-co-operative behavior prevents this. A government with a comparative political advantage in U^I could face an opposition for which U^I would be even higher at ψ_m, but a government in power can often nullify this advantage by co-opting elements of opposition platforms or by repressing potential opposition leaders. A government with a comparative advantage in U^O may also be able to co-opt popular planks in opposition platforms.

If ψ has long been close to one, $U^O > U^I$ is likely to hold for each major contender for power since a strong comparative economic advantage in Y is likely. An exception could arise, however, if political support became highly fragmented or monopolized. Likewise, suppose ψ is close to ψ_m and initially stable, but that a change of ruler then leads to growing competition for insider loyalties, which causes s to fall and to become more sensitive to changes in A^* and G^*. Because loyalty based on shared attributes, values, or experiences is often hard to transfer from one ruler to another, a change of ruler often lowers λ, at least in the short run. This increases competition for power and makes purges more likely when a new ruler appears.

It also provides a potential opening for a government with a comparative advantage in U^O that wants to raise ψ. The outlook for such a government improves if external opportunities or constraints put upward pressure on ψ by raising the importance of economic efficiency to a government's survival. When ψ is low, the de-emphasis of competence as an insider success criterion makes current insiders less able to carry out reforms needed to make the economy more competitive, less able to be good administrators or managers in a competitive economy, and therefore more likely to resist these reforms. Efficiency then requires new blood.

VIII. A Contrasting View of Political Support

A contrasting view of political support is that of Bueno de Mesquita, Smith, Siverson, and Morrow [2003]. They argue that governments are more powerful and longer lasting in political systems that allow them to hold power with fewer supporters. Let S be the size of the 'selectorate,' or set of individuals with power to choose the government, and let W be the size of the 'winning coalition' or minimum number of members of S whose support will enable a government to hold power. Both W and S are computed as shares of the population, and members of the selectorate are considered to be interchangeable—any member is a clone of any other. The Bueno de Mesquita et. al. thesis then says that political power is a decreasing function of W/S. In fact, little changes if we replace W/S by W alone [Clarke and Stone 2008, p. 388, note 1].

Government power and longevity are high when W/S is low because members of W are then easy to replace. They have little bargaining power, and their loyalty therefore comes at low cost. Absolute advantage based on a low W/S replaces comparative political advantage. Rulers always prefer a W/S that is low, since a low W/S makes the cost to government of staying in power low, in terms of the private goods that it must provide in order to retain enough support. Because there is no need to reward or take into account the welfare of anyone outside W, the worst social outcome also occurs when W/S is low. In particular, the output of public goods is then low, and there is no incentive to keep GDP or GDP – V^* high. This outcome is similar to the case above in which λ is so high that U^I becomes completely insensitive to changes in A^* and G^*. The latter is, however, a special case.

The Bueno de Mesquita et. al. thesis has not gone unchallenged—see, eg., Clarke and Stone [2008] and Gallagher and Hanson [2015]. (See as well the reply by Morrow, Bueno de Mesquita, Siverson, and Smith [2008] to Clarke and Stone.) Consider an autocracy, where political power is more valuable than in a liberal democracy and where the absence of effective institutions of restraint raises the cost of losing a struggle for power. Actual or potential rulers are thus willing to incur higher costs to gain or hold on to power. They may have to do this because more often than not power in such a polity changes hands in non-co-operative ways, and the multiple threats of power loss are costly to identify and evaluate. Two-thirds of all leadership changes under autocracy result from non-co-operation—coup, regime change, assassination, popular uprising, or foreign intervention [Svolik 2012, p. 5; see also Gallagher and Hanson, p. 374].

The vulnerability of a polity to non-co-operative leadership change may well rise as the share of population not in W rises, which is to say as W falls. (Alternatively, such a change may become more likely as $(S - W)/S$, the fraction of members of the selectorate not included in W, rises, which is to say as W/S falls.) In these conditions, rulers will *not* prefer the smallest possible W (or W/S) unless the danger of a non-co-operative leadership change is low enough to ignore.

Thus it is a higher cost of losing power plus uncertainty as to where the threat is coming from that accounts for the greater longevity of government under autocracy. Uncertainty results from the 'dictator's dilemma.' Since an autocrat punishes criticism of his government, he does not know how much support he has among different elements of the population [Wintrobe 1998, esp. ch. 2]. Acquiring this information is costly. He also has an incentive to restrict freedom of association and to control the movement of people, as well as their ability to communicate and to gain access to information more generally, which discourages entrepreneurship and innovation, potentially weakening such a government.

To be secure in power, a dictator needs the support of many people other than those who belong to a specific 'winning coalition.' The desirability of solving the dictator's dilemma and of securing support from all who can threaten a dictator's power also raise the need for rent. It helps to turn the limit on feasible rent extraction into a binding constraint on the amount of support that can be bought with rent, unless non-co-operative behavior by outsiders or external pressures/opportunities impose an even tighter constraint. This ensures a positive share in government support for GDP net of distributional rent and thus for outsiders. It leads to a government support function like (4) and to the results of this paper, given support maximization.

In addition, it is likely that the support of some members of a selectorate will be more valuable than the support of others, and that the former will be harder to replace, putting them in a position to command high prices for their support. The ability to inspire inherent loyalty then becomes a stabilizing force in a non-inclusive polity and skill differences play a role in comparative political advantage. A government that is poor at commanding the loyalty of a relatively small elite—and which must therefore pay a high price for its support—but which is charismatic with large numbers of voters might well prefer W to be large. Its choice will also depend on conditions of supply. In a society well endowed with effective institutions of restraint plus the human capital needed to operate these, a government can more easily gain from raising GDP – V^* and less easily gain from raising V^* than when these institutions are absent.

Like ψ, W and S are not directly observable. Therefore Bueno de Mesquita et. al. use proxies, which they admit are 'crude.' Arguably, these proxies capture differences between polities besides differences in W/S [Bueno de Mesquita et. al., pp. 133-40; Gallagher and Hanson, pp. 374-76]. Despite the argument in Morrow et. al., this raises the possibility that at least some of the claimed predictive power of differences in W/S in terms of political outcomes [Bueno de Mesquita et. al., chs. 4,5,7] is really predictive power of other kinds of differences between political systems. Moreover, whereas Bueno de Mesquita et. al. focus on the nature of political decision-making, the focus in this paper is on the results of political decisions. Different processes can yield similar results. If efficiency is essential to the survival of a government, for example, ψ is likely to be high even under autocracy, since societies that are more inclusive are also more efficient.

IX. Summary and Conclusion

No matter how desirable economic reforms may be on other grounds, they will be adopted only if they raise a government's political support. A competitive economy with low rent seeking and low protectionism will maximize support only when 'inclusiveness' (ψ), as defined above, is high. For any given production frontier (TR), an increase in ψ implies a rise in useful output (Y_U) and a fall in rent seeking (A^*_U), rent-seeking profit (G^*_U), and distributional rent (V^*_U). Even when ψ is at its feasible minimum, however, a government's support will depend on macro-economic performance, as measured by GDP net of distributional rent, although to a lesser degree than when ψ is high. A government can never rely on rent alone. If inclusiveness is low, however, high rates of innovation and new product development are likely to be inconsistent with support maximization, as is a high degree of openness/transparency in government.

Comparative economic advantage, as reflected in the economy's endowment of rent-seeking specialized capital relative to capital specialized to useful output, also helps to determine the support-maximizing outcome. These endowments depend on past demands for A^*_U and Y_U and thus past values of ψ. The greater is an economy's comparative economic advantage in A^*, the more likely is its government to have a comparative political advantage in U^I and likewise for Y and U^O. When ψ remains constant over time, a build-up of comparative economic advantage makes the political system more stable.

The backbone of an inclusive polity is a set of effective institutions of restraint that limit a government's abuse of its power and make the political system more impartial and transparent, thereby making it harder for a government to gain support from rent seeking. These institutions also lower the cost of losing political power as well as the value of such power. As a result, losers are more willing to leave office voluntarily, and governments tend to be shorter-lived than when ψ is low. In turn, this allows competition for power to become institutionalized in periodic elections, which enables peaceful power sharing between political parties over time via rotation of power. The positive correlation between transparency and ψ also gives a way of ranking nations according to ψ.

The quest for support also causes ψ to change. Depending on comparative political advantage, ψ has a tendency to migrate toward either the inclusive or the non-inclusive end of the political spectrum, unless non-co-operative behavior by insiders or outsiders or external pressures or opportunities prevent this. Thus the best way to get to an inclusive polity is to have a government come to power with a comparative political advantage in U^O. The key that opens the door to such a government is strong competition for insider loyalties that causes a low level of inherent loyalty, and/or poor macro-economic performance causing GDP net of distributional rent to be low. Either can de-stabilize the government of a non-inclusive polity. Political fragmentation can also de-stabilize an inclusive polity, but such a polity can more easily combine competition for power with stable government.

Rent seeking can become the road to serfdom, not just because of efficiency issues, but also because a high level of rent seeking signals secrecy in government, inequality before the law, corruption, and unequal treatment of insiders and outsiders in the form of barriers that constrain social mobility and perpetuate greater economic opportunity for some than for others. The inclusiveness of a political system reflects the very nature of the society in which it is embedded.

APPENDIX: The Extended Basic Rent-Seeking Model and Solution

In this appendix, we assume the economy to be at a fixed point on *TR* where *MRT* is set equal to one for simplicity. This fixes the price of rent-seeking output at one. The model used here is an extended version of Tullock [1980]. For any given ψ, a government creates rents with a total value of V and allocates them among N profit-maximizing and risk neutral rent seekers $(1\ldots N)$. Rent seeker k spends A_k and receives in return an expected rent of $V_k = P_kV$, where P_k is k's share of V, for $k = (1\ldots N)$, with $\Sigma_k A_k = A$, $\Sigma_k V_k = V$, and $\Sigma_k P_k = 1$. Summation here is always from one to N, where N is assumed to be large and each P_k to be small. Each V_k is assumed to be a non-decreasing function of A_k and a non-increasing function of A_j, for each $j \neq k$. Rent seekers compete for rents by influencing the decisions of a support-maximizing government as to their creation and allocation. For j, $k = (1\ldots N)$, the relative expected rents for any j and k are given by:

$$V_j/V_k = P_j/P_k = W_jA_j^{Rj}/W_kA_k^{Rk}, \qquad \text{(A1).}$$

Here $(W_1\ldots W_N)$ are constant weights, and $(R_1\ldots R_N)$ are 'effectiveness' coefficients, also assumed to be constant for simplicity. When $A_k = A_j = 1$, $V_j/V_k = W_j/W_k$, whereas at the profit maximum, R_k is nearly the percentage increase in V_k caused by a one percent increase in A_k. Thus relative weights give relative rents when each A_k is the same and low—and therefore measure access to rent—whereas R_k indexes how effectively increases in A_k cause V_k to rise at the profit maximum. The parameters, $(W_1\ldots W_N\ldots)$ and $(R_1\ldots R_N)$, reflect the value of entry and expansion of each rent seeker to the government. For any would-be rent seeker, $k > N$, who is excluded from rent seeking, $V_k = 0$ and thus $W_k = P_k = 0$.

Since $\Sigma_j V_j = V$ or $\Sigma_j P_j = 1$, P_k is given by:

$$P_k = W_kA_k^{Rk}/A^R, \qquad \text{(A2).}$$

for $k = (1\ldots N)$, where $A^R = \Sigma_j W_j A_j^{Rj}$. Each A_k is set to maximize $G_k = P_k V - A_k = V_k - A_k$, for given values of every A_j such that $j \nparallel k$. Thus rent-seeking competition leads to a Nash equilibrium with costs $(A^*_1\ldots A^*_N)$ and expected profits $(G^*_1\ldots G^*_N)$ for the N active rent seekers, where stars denote equilibrium values. The first-order condition for this maximization is $G_{kk} = 0$ or $V_{kk} = P_{kk}V + P_k V^{kk} = 1$, where G_{kk}, V_{kk}, P_{kk}, and V^{kk} are the increases in G_k, V_k, P_k, and V caused by a unit increase in A_k. From (A2), $P_{kk} = P_k(R_k(1 - P_k)/A_k)$, and the first-order condition becomes $V_k[(R_k(1 - P_k)/A_k) + V^{kk}/V] = 1$. Here V^{kk}/V is minuscule, the amount of rent created by a unit increase in rent seeking divided by all of the rent in the economy. Ignoring this term gives $V_k[(R_k(1 - P_k)/A_k)] = 1$ and thus $A^*_k = [V^*_k R_k(1 - P^*_k)]$.

Also $G^*_k = V^*_k[1 - R_k(1 - P^*_k)]$, and $V^*_{kk}(A^*_k/V^*_k) = R_k(1 - P^*_k)$, which nearly equals R_k, since P^*_k is small. Thus R_k measures returns to scale, or the percentage increase in V^*_k caused by a one percent increase in A^*_k. Ignoring $(1 - P^*_k)$, which nearly equals one, the requirement, $G^*_k \geq 0$, implies $R_k \leq 1$, for each $k = (1\ldots N)$, or $V^*_{kk}(A^*_k/V^*_k) \leq 1$. Thus non-increasing returns to scale prevail in equilibrium. Since $V^*_{kk} = 1$, R_k also nearly equals A^*_k/V^*_k.

When each W_k and R_k are the same, we get the classical case in which all rent is dissipated. To see this, note that $A^*_k = [R_k P^*_k(1 - P^*_k)]V^*$ implies the solution:

$$P^*_1 = P^*_2 = \ldots = P^*_N = 1/N. \qquad \text{(A3).}$$

$$A^*_1 = A^*_2 = \ldots = A^*_N = V^*R^*(N - 1)/N^2. \qquad \text{(A4).}$$

$$A^* = \Sigma_k A^*_k = V^*R^*(N - 1)/N, \qquad \text{(A5).}$$

where R^* is the common value of $(R_1\ldots R_N)$. Because of free entry and exit, the classical outcome is $R^* = N/(N - 1)$ and $A^* = V^*$ or $G^* = 0$. Because R^* nearly equals one, constant returns to scale prevail.

Here the outcome differs from the classical result because $G^*_U > 0$ when $\psi < 1$. This implies entry barriers into rent seeking and brings us to the case in which the weights and/or the effectiveness coefficients vary from one rent seeker to another. Would-be rent seekers whose entry is denied—that is, all $k > N$—have zero weights, as shown above. For $k \leq N$, $A^* = \Sigma_k A^*_k = \Sigma_k[R_k V^*_k(1 - P^*_k)] = V^*R^*[1 - 1/N - N\sigma^2_p]$, where

R^* is defined more generally as the weighted average of $(R_1 \ldots R_N)$ given by $R^* = \Sigma_k[R_k P^*_k(1 - P^*_k)]/\Sigma_k[P^*_k(1 - P^*_k)]$ and σ^2_p is the variance of $(P^*_1 \ldots P^*_N)$. This gives:

$$A^*_k = [V^*_k R_k(1 - P^*_k)]. \quad \text{(A6).}$$

$$A^* = \Sigma_k(A^*_k) = V^*R^*[(N-1)/N - N\sigma^2_p]. \quad \text{(A7).}$$

$$G^*_k = V^*_k[1 - R_k(1 - P^*_k)]. \quad \text{(A8).}$$

$$G^* = V^* - A^* = V^*[1 - R^*[(N-1)/N - N\sigma^2_p]]. \quad \text{(A9).}$$

When N is large, $(N-1)/N$ is nearly one and $N\sigma^2_p$ is small since σ^2_p is on the order of $1/N^2$. A^* then nearly equals V^*R^* and $R^* < 1$ if $G^* > 0$. Thus decreasing returns to scale prevail here.

NOTE

*I am indebted to Sarah Aboul-Magd for drawing the diagrams.

GLOSSARY OF SYMBOLS IN ORDER OF APPEARANCE

ψ	Inclusiveness
U	Government support function.
Y	Useful output.
N	Equilibrium number of active rent seekers.
$(G^*_1 \ldots G^*_N)$	Equilibrium profits of individual rent seekers.
$(A^*_1 \ldots A^*_N)$	Equilibrium amounts of rent seeking by individual rent seekers.
A^*	Equilibrium total amount of rent seeking.
G^*	Equilibrium total profit from rent seeking.
$Y - G^* = \text{GDP} - V^*$	Useful output (Y) net of rent-seeking profit equals GDP net of distributional rent.
$(V^*_1 \ldots V^*_N)$	Individual equilibrium rents of the N active rent seekers.
V^*	Total equilibrium rent.
P_{A^*}	Price of A^* in units of Y.
$MC^i_{A^*}$	Marginal indirect cost of A^*.
TR	Production frontier in A^* and Y.
MRT	Marginal rate of transformation along TR.
Y_L, A^*_L	Marginal product of labor in Y and A.
U-subscript	Denotes support-maximizing value.
MRS	Marginal rate of substitution of Y for A^*.
Y^M	Maximum value of Y.
E_M	The point at which $A^* = 0$ and $Y = Y^M$.
Y^m	Minimum value of Y_U.
$(A^*)^m$, $(G^*)^m$	Maximum values of A^*_U and G^*_U.
$(V^*)^m$	Maximum feasible rent.

E_m	The point, $(Y^m, (A^*)^m)$ of maximum rent extraction.
U^O	Index of government support from useful output as a function of $(Y - G^*)$.
U^I	Index of government support from rent seeking, $U^I = sA^*$, where s is government's share of A^*. Here, $s = s(G^*, A^*)$, then $s = s(\lambda, G^*, A^*)$.
U^{II}	First derivative of U^I.
ε_{sA^*}	$\varepsilon_{sA^*} = -(s_{A^*}A^*/s)$ is the elasticity of s with respect to A^*.
X^V	Share of V^* in GDP.
C^g	Cost of becoming an informed voter.
λ	Government's ability to compete for insiders' support.
θ	Government's ability to compete for outsiders' support.
ψ_N, ψ_B	Negotiated levels of ψ under the threat of non-co-operation.
$U_{d\lambda}, U_{i\lambda}$	Marginal direct and indirect changes in U owing to a unit increase in λ.
S, W	The 'selectorate' and 'winning coalition' in selectorate theory.
P_k	Rent seeker k's share of V.
$(\omega_1 \ldots \omega_N)$	Weights of individual rent seekers.
$(R_1 \ldots R_N)$	Effectiveness coefficients of individual rent seekers.
A^R	$A^R = \Sigma_j \omega_j (A_j)^{Rj}$.
R^*	Equilibrium average rent-seeking effectiveness.
σ^2_p	Variance of $(P^*_1 \ldots P^*_N)$.

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