Destructive competition: Oil and rent seeking in Iran

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Abstract

In countries with poorly developed institutions, rent seeking may impose serious costs for the economy. Our analysis demonstrates how rent seeking distorts the economy through two channels. First, there is the direct cost of the resources wasted in the rent seeking contest. Second, rent seeking distorts firms' investment decisions, and leads to underinvestment. We conduct a case study of rent seeking in Iran in order to gain a better understanding of the phenomenon. Iran is an interesting case, both because it is a rentier economy in the oil rich Middle East, and because its political system is highly factionalized.

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1 Introduction

The literature on the phenomenon known as the "resource curse" shows that countries rich in natural resources tend to have a slower economic growth

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than countries that have smaller natural resource endowments (see, for instance, Sachs and Warner, 2001). The negative effect of natural resources on economic growth is particularly strong in countries with weak institutions. Moreover, the curse is more severe for point source resources like oil than for more dispersed natural resources like farmland (see Isham et al, 2002).

There are several possible explanations to the resource curse. One explanation is that instability in the price of natural resources leads to large fluctuations in government revenues. This may in turn lead to macroeconomic instability, which adversely affects economic growth. A second explanation is that resource rents tend to reduce the size of the tradeable sector of the economy. If technological progress is faster in this sector than in the non-tradeable sector, these rents may harm growth. This is generally referred to as the Dutch disease. A third hypothesis is that rents from natural resources may lead to corruption and rent seeking. When revenues are controlled by states with a limited degree of autonomy, the result may be a destructive competition between interest groups to obtain a share of this income.

The present article analyses the impact of power struggles on the efficiency of an oil rich economy. In particular, we focus on how the distribution of strength between competing interest groups affects economic outcomes. To illustrate the logic of rent seeking, we have chosen to focus on Iran. Iran is interesting in this context firstly because it is a rentier economy in the oil rich Middle East, and secondly because its political system is highly factionalized.

Oil revenues in Iran represent about 60 percent of government revenues and 34 percent of GDP. More than 80 percent of the country's foreign exchange earnings are due to oil exports[1]. Politically, the division of power between institutions with conflicting interests is not clearly defined. This has made rivalry and political infighting endemic in the Islamic Republic. Whereas the Shah was the undisputed leader of the Pahlavi monarchy, and was able to implement growth oriented economic policies, the Islamic Republic has been paralyzed by power struggles between various political factions. The result has been a lack of state autonomy, and poor economic growth.[2]

Oil revenues are not the country's only source of rent. The development policies applied since the 1960s have led to a massive growth in bureaucracy

[1] These numbers are from the Central Bank of the Islamic Republic of Iran, Annual Review, 1380 (2001/2002), Tehran, 2003.

[2] GDP per capita growth averaged -0.5 percent in the period 1983-1993, and 2.2 percent in the period 1993-2003. Economic growth has been stronger in recent years, mainly due to high oil prices.

and state intervention in the economy. Before the growth of the bureaucracy, most of the rent seeking was aimed at direct or indirect transfers of oil revenues. But as the state grew larger, bureaucratic interventions created rents from price distortions, taxes and subsidies, and regulations. These rents became attractive targets for rent seekers. For instance, firms would lobby for monopoly positions in the market or offer bribes to avoid taxation. Rents derived from bureaucratic interventions, which we shall refer to as regulation rents, should be conceptually distinguished from oil rents.

Standard models of rent seeking typically deal with an exogenously given rent, like oil rents. However, the rent that interest groups compete for may be affected by rent seeking itself. In our framework, the size of the regulation rent is endogenous, created by investment. The idea is as follows. In a country with weak institutions, there is an absence of credible commitment regarding future policies. Once an investment is made, bureaucrats are free to impose various types of taxes on the firm at their own will. Through lobbying activities, a firm may reduce this tax burden. A well-connected firm may even manage to reverse the financial flow, from a tax to a positive net transfer. The abilities and efforts of the actors in their competition to influence the bureaucracy, determine their net tax position.

Since private property rights over income in this situation are not well defined, a common pool problem arises. Firms realize that a share of the income generated from their investments will be taxed away by bureaucratic intervention, and respond by investing less. The distortions from rent seeking are therefore twofold. Not only do economic actors waste resources fighting over favors, but rent seeking also leads to underinvestment.

The theme of our formal model is related to Tornell and Lane (1999), who analyse the "voracity effect". This effect refers to the possibility that a windfall gain, such as increased oil revenues, may lead to intensified rent seeking, a more than proportional increase in fiscal redistribution, and lower growth. The model presented here provides a much simpler framework for analysing fiscal redistribution in a rent seeking economy. Moreover, we focus on asymmetries in political strength between interest groups and policy implications. Our paper is also related to Baland and Francois (2000) and Torvik (2002), who analyse how an increase in income from a natural resource may lead to a reallocation of human capital from productive entreprenuership to rent seeking. They demonstrate that, due to economies of scale in the productive sector, the external inflow of resources may actually lead to a lower income for the economy as a whole.

The article is organized as follows. Section 2 provides an overview of political factions in Iran, and their political and economic strengths. Section 3 presents a theoretical model of how the distribution of political influence and economic privileges between interest groups affect the intensity of rent seeking. Section 4 provides a case study of rent seeking in Iran, based on interviews and field work in the country. In section 5 we discuss how economic policy reforms in Iran may affect rent seeking. Section 6 concludes.

2 Political factions in Iran

The Iranian rent seeking economy is dominated by four main political factions. These factions can be categorized according to their positions on social and economic affairs. Liberal views on economic policy do not necessarily imply liberal views on social issues, such as veiling and segregation of men and women. Those who hold liberal views on economic policy but are in favor of tight, social control, are generally referred to as conservatives. Their economic stronghold lies within the *bazaar* (mainly imports) and the religious foundations (*bonyads*).[3] Politically, their power is due to control over the most important political institutions, including the Guardian Council, the Council of Experts, and their close association with the Leader of the Revolution.

A second important faction is what we may call pragmatic conservatives. Like the conservatives, they are in favor of a market based economy, but regarding social questions, their views are more liberal. The pragmatic conservatives have their economic base in real estate, manufacturing, and export processing zones. Political power is derived from the influence of leading personalities like Ali Akbar Hashemi Rafsanjani and Mohsen Rezai, president and vice-president of the Expediency Council, respectively.

The third influential faction is the neoconservatives. The neoconservatives are mostly a younger generation of revolutionaries, many with background in the Revolutionary Guards, who seek the re-ideologisation of Iranian politics. They defend the earlier goals of the revolution, including an author-

[3]The religious foundations are economic conglomerates with activities in sectors like finance, tourism, imports/exports and manufacturing. To promote their "revolutionary" and "altruistic" mission, the *bonyads* are exempted from taxes and government control. They also receive direct transfers through the budget. According to some estimates, the *bonyads* control as much as 40% of the non-oil economy (see Maloney, 2000).

itarian state structure, a state centered economic system, and a messianic foreign policy. Their economic power comes from smuggling, development projects and the arms industry. Politically, the neoconservatives control the 7th parliament (2004-2008) and form the core of the coercive system. Through the process of crushing student demonstrations and reformist opposition, the various branches of the police and para-military forces have gained increasing influence.

The fourth main political group is the reformists. Under the leadership of President Khatami (1997-2005), they have increased social liberties and called for democratization. Historically, the reformists were strong advocates of state led development. Today, however, this group has no uniform position on economic issues. Their economic power outside the state apparatus appears to be weak. But through their control over the government, they have exerted significant influence on the economic arena. Politically, their power is due to popular support, as manifested in the 1997 and 2001 presidential elections. Table 1 illustrates the positions of the factions.

Table 1. Main political factions

	Economic left	**Economic right**
Social left	Reformists*	Pragmatic conservatives
Social right	Neoconservatives	Conservatives

* Reformists vary in their position on economic issues.

We now turn to a formal analysis of how the distribution of political influence and economic privileges between interest groups affect the intensity of rent seeking in society.

3 The model

The number of interest groups in the model is given by N. We refer to these interest groups as firms. The firms make two sequential decisions. First, they make an investment decision. Second, they determine their amount of rent seeking.

We start by describing the rent-seeking contest. Our formulation of rent seeking is standard, as found in Nitzan (1994) and Mehlum and Moene (2001). Let R denote the size of the rent in the economy. The objective function guiding firm j's rent seeking effort is given by:

$$v_j = \rho_j R - \alpha_j q_j, \qquad \rho_j = \frac{q_j}{Q} \text{ and } Q = \sum_{i=1}^{N} q_i, \tag{1}$$

where ρ_j is the share of the rent captured by firm j, q_j is this firm's rent seeking effort, and α_j is the marginal cost of rent seeking facing the firm, capturing the firm's efficiency in rent seeking. Assuming an interior solution, the first order condition for each group is given by:

$$\frac{\partial v_j}{\partial q_j} = \frac{Q - q_j}{Q^2} R - \alpha_j = 0, \tag{2}$$

which results in an equilibrium share of rent given by:

$$\rho_j = 1 - \frac{\alpha_j Q}{R}. \tag{3}$$

Inserting (3) in (1), we find the equilibrium income of firm j, net of rent seeking expenses, as:

$$v_j = R\rho_j^2. \tag{4}$$

In equilibrium, using the fact that $\sum_{i=1}^{N} \rho_i = 1$, (3) can be expressed as:

$$\rho_j = 1 - \frac{\alpha_j (N-1)}{\bar{\alpha} N}, \tag{5}$$

where $\bar{\alpha}$ is the average level of rent seeking efficiency in the economy. Clearly, firm j's share of the rents is a negative function of its marginal rent seeking costs relative to the average level in the economy, and a negative function of the number of rent seekers. For the economy as a whole, income net of rent seeking expenses is given by:

$$\sum_{i=1}^{N} v_i = R \sum_{i=1}^{N} \rho_i^2. \tag{6}$$

If we denote the exogenously given oil rent by B, so that $R = B$ in (6), oil income net of rent seeking costs for the country as a whole can be expressed as:

$$I_B = B \sum_{i=1}^{N} \rho_i^2. \tag{7}$$

We now turn to the case of an endogenous rent, determined by the firms' investment decisions. An investment gives rise to income. Through various types of interventions, such as taxes and subsidies, bureaucrats redistribute this income between the firms. When these policies are at the discretion of the bureaucracy, property rights over income from investment are not well defined. Indeed, each firm can be seen as contributing to a common pool of income. This leads to a common pool problem, resulting in underinvestment. The common pool problem is aggravated by the fact that firms use resources trying to influence the distribution of the common pool of income.

Let k_j measures investment by firm j, and $f(k_j)$ be the income generated from this investment. We assume identical technology across firms, and make the standard assumption of positive but decreasing marginal product of capital, i.e., $f'(k_j) > 0$, $f''(k_j) < 0$. The cost of capital to firm j is r_j, which is exogenous to the model. We can think of r_j as a policy parameter, determined by an autonomous government agency outside the control of rent seeking.

The capital investment is a sunk cost for the firms at the rent seeking stage of the game. Hence, total income generated by the firms' investments, given by $Y = \sum_{i=1}^{N} f(k_i)$, represents the potential regulation rent in the economy. In practice, however, the actual regulation rent may be lower than the potential rent, for at least two reasons. First, income generated by the firms is a more dispersed source of rent than a point source oil rent. Hence, it may be impossible or exceedingly costly for the bureaucracy to access the entire, potential regulation rent. Second, property rights may protect at least a share of firms' returns from investment from the redistribution policies of the bureaucracy. In the following we assume that a share γ of Y can be transferred between firms through bureaucratic intervention. A share $(1-\gamma)$ of the non-oil sector is thus not exposed to rent seeking. The government may be able to lower γ by strengthening institutions that protect private property rights. Income generated in the non-oil sector is given by:

$$M(k) = (1-\gamma)\sum_{i=1}^{N} f(k_i), \tag{8}$$

where $k = (k_1, ..., k_N)$. The share of non-oil income that is exposed to rent seeking, and which therefore constitutes the regulation rent in the economy,

is given by:

$$A(k) = \gamma \sum_{i=1}^{N} f(k_i). \tag{9}$$

Using the fact that $R = A(k)$ together with (6), we can express the regulation rent, net of rent seeking costs, as:

$$\tilde{A}(k) = \gamma \sum_{i=1}^{N} \rho_i^2 f(k_i). \tag{10}$$

Income net of rent seeking costs from the non-oil sector of the economy can therefore be found as:

$$I_A = M(k) + \tilde{A}(k) = \sum_{i=1}^{N} \left[\left(1 - \gamma + \gamma \rho_i^2\right) f(k_i^*) \right], \tag{11}$$

where k_i^* denotes the equilibrium level of investment, to be derived below. When a firm makes its investment decision, it realized that only a share $(1-\gamma)$ of the returns to its investment is safe from various forms of "grabbing" activities from outside parties. It therefore only controls an amount $(1-\gamma) f(k_j)$ of its investment. A share γ of its investment is a contribution to the common pool of income, which is subject to rent seeking and distributed amongst the firms according to their relative influence. From (4) we see that its income from this pool of income is given by $v_j = \rho_j^2 A(k)$. Hence, firm j's objective function at the investment stage of the game can be expressed as:

$$\pi_j = (1-\gamma) f(k_j) - r_j k_j + \rho_j^2 A(k). \tag{12}$$

Maximizing (12) with respect to k_j, the first order condition can be expressed as:

$$f'(k_j) = \frac{r_j}{\gamma \rho_j^2 + (1-\gamma)}, \tag{13}$$

which defines the optimal level of investment, k_j^*, for firm j. The denominator captures the investment distortion due to rent seeking (the first term in the denominator) and the common pool problem (the second term in the denominator). In other words, if an investment generates one dollar of income, part of this dollar will be taxed away by the redistributive polices and part of it will be taxed away due to increased rent seeking.

If one group, j, say, has all political control, we see from (13) that $\rho_j = 1 \Rightarrow f'(k_j) = r_j$. For any $i \neq j$, the first order condition would in this case be given by $f'(k_i) = r_i/(1-\gamma)$, which implies underinvestment since these firms only keep a share $(1-\gamma)$ of the income generated from investment. Hence, with one firm having full control at the rent seeking stage of the game, there will be no resource wasting rent seeking contest, but as long as $\gamma > 0$, there will still be underinvestment. If $\gamma = 0$, there are no regulation rents, $f'(k_j) = r_j$. An increase in γ leads to a reduction in investment and therefore a reduction in net income, I_A.

4 Numerical examples and discussion

To illustrate the properties of the model, we simplify by considering the case of two firms, firm 1 and firm 2. The share of the rent accruing to firm 1 is given by ρ, and to firm 2 by $(1-\rho)$. The production technology is given by $f(k_i) = \ln k_i$.

4.1 Exogenous versus endogenous rent

Figure 1 illustrates the effect of rent seeking with an endogenous and exogenous rent. The horizontal axis measures ρ, the relative strength of firm 1 in the rent seeking contest, which from (5) we observe is a function of the distribution of rent seeking costs between the firms. The two firms are assumed to have identical capital costs, i.e., $r_1 = r_2 = r$. Given this cost of capital, in the absence of rent seeking, investment creates an income given by the Y-line. If $\gamma = 1$, which can be interpreted as a situation with very weak political institutions, Y also gives the potential for transfers between firms, and is therefore in this case identical to the regulatory rent. Income net of rent seeking is given by I_A, with the subscript A indicating that the rent is an endogenously determined regulatory rent. The superscripts indicate the value of γ, so that the $I_A^{1/2}$-curve shows the case of $\gamma = 1/2$, and so on. If $\gamma = 0$, of course, $I_A^0 = Y$. The loss in income due to regulatory rent seeking is given by $(Y - I_A)$. Clearly, net income from the non-oil economy falls with γ.

The I_B-line shows net income from the exogenous oil rent. In the figure, potential income from oil, i.e., the oil rent, is given by Y, identical to potential income from the non-oil economy. The amount of oil rent dissipation is

given by $(Y - I_B)$. We note that for a given rent Y, the income loss from rent seeking is larger if investment decisions are endogenous, i.e., $I_A^1 < I_B$. Hence, while the challenges of handling an oil rent has received a lot of attention in the literature, our analysis shows that, everything else equal, the destructive competition for regulatory rents may be even more damaging for the economy.

An improvement in private property rights protection, as captured by a reduction in γ, increases the net income due to investment. For sufficiently good protection of investors' profits, rent dissipation may be less serious for the regulation rent than for the oil rent. For instance, $I_A^1 < I_A^{1/2} < I_B$ for any ρ. However, reducing γ, we see that $I_A^{1/4} > I_B$ for intermediate values of ρ, and $I_A^{1/4} < I_B$ for a more unbalanced rent seeking competition. Intuitively, when only a small share of the returns from investment are subject to rent seeking, firms' investment decisions are relatively insensitive to changes in ρ and thereby insensitive to changes in the intensity of rent seeking.

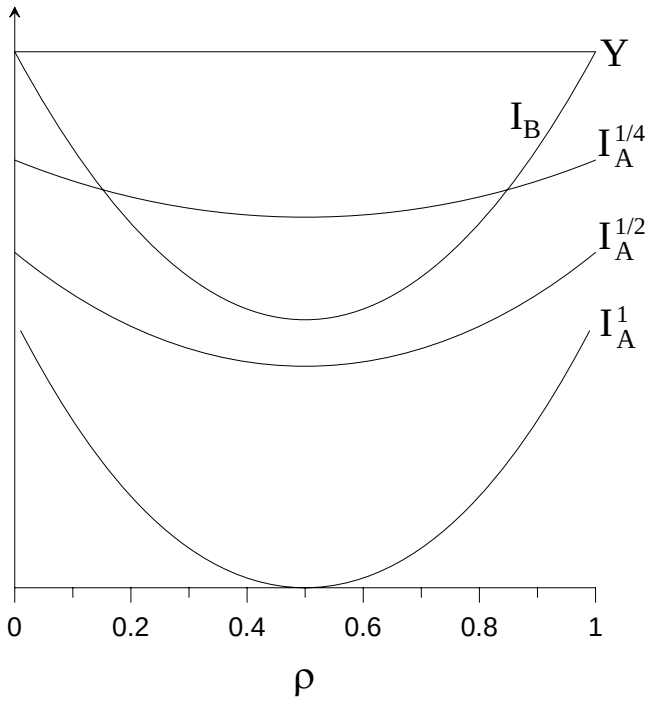

Figure 1: Exogenous versus endogenous rents

From Figure 1 we also see that net income reaches its lowest level for $\rho = 0.5$, i.e., when the two parties have equal strength in the rent seeking contest. With equal opportunities in investment, as given by identical capital costs, equal strength in rent seeking is achieved when their political influence is the same, i.e., when $\alpha_1 = \alpha_2$. The observation that rent dissipation is at its largest when the interest groups are equally strong, is a standard result in the rent seeking literature. In Iran, the power balance between the political factions has always been very tight. No single group has ever been able to outplay the others and gain a power monopoly. In light of the theoretical predictions, destructive competition in Iran can be expected to be fierce.

Figure 2 below shows total net income for a country with an oil rent of Y and a potential non-oil income of equal size. The quality of institutions is assumed to be $\gamma = 1/2$. The upper curve gives $I_A^{1/2} + I_B$. Oil revenues clearly increase the potential income of the country. This is captured by the shift in the income potential line from the dashed Y to the solid $2Y$ line.

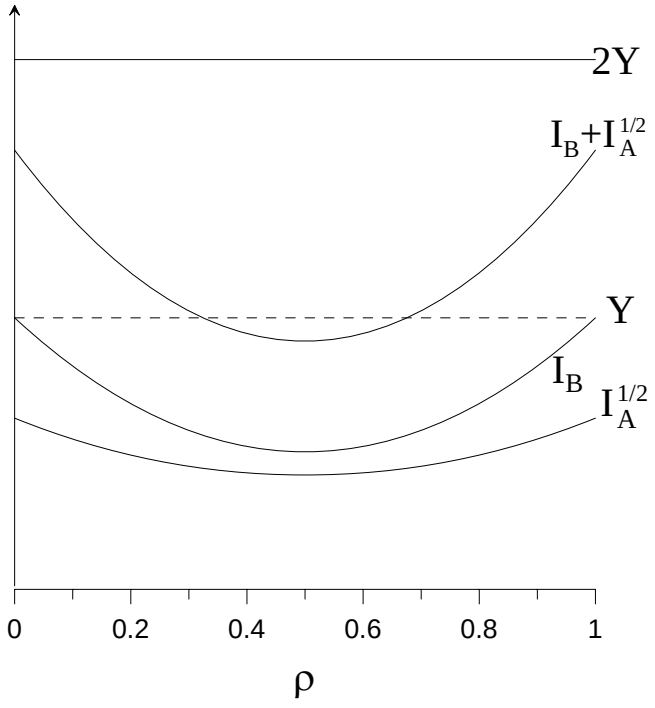

Figure 2: Exogenous and endogenous rents

4.2 Economic policy reform

We consider two types of economic policy reform, one targeted at the capital market, for instance by deregulation of the banking sector, and one broad based reform, seeking to strengthen the protection of property rights.

Consider first the capital market reform. With the capital cost being identical for both firms, lowering this cost leads to an increase in the income potential from investment. In Figure 3 this is captured by a shift from the Y-line to the Y'-line. The net income line shifts upward from $I_A^{1/2}$ to $I_A'^{1/2}$. Part of the effect of the reform on income will be crowded out by rent seeking, as evident from the fact that the increase in net income is much smaller than the increase in potential income.

Consider next a reform that strengthens property rights, captured by a reduction in γ. This leads to a shift from $I_A^{1/2}$ to $I_A^{1/4}$. In specific case illustrated in Figure 3, we see that strengthening property rights is more effective in increasing net income relative to the targeted credit market reform for intermediate values of ρ, more precisely for $\rho \in (\rho_a, \rho_b)$. Outside this interval, lowering the interest rate is more efficient.

Intuitively, for intermediate values of ρ, rent seeking is very intense. A policy reform aimed at reducing rent seeking, which is what strengthening property rights does, is then very effective. This should be contrasted with a reduction in interest rates, which stimulates more investment. When rent seeking is fierce, much of the increased income potential from this reform will be wasted in intensified destructive competition. On the other hand, when ρ is closer to one of the extremes, rent seeking is less intense. It may then be more fruitful to introduce a policy that creates a larger potential income.

Given that policy competition in Iran has been very intense in recent years, our analysis shows that institutional reforms that provide greater security for firms' investments are important to improve economic output. Policy reforms that seek to stimulate the income potential of the economy, like deregulation of the banking sector, may well have more limited effect. Much of the gain from the latter kind of reform will be dissipated through an increase in destructive competition.

4.3 Asymmetry in capital costs

In the numerical examples so far, the two firms have been assumed to have identical capital costs. Consider now the case of asymmetry between firms in

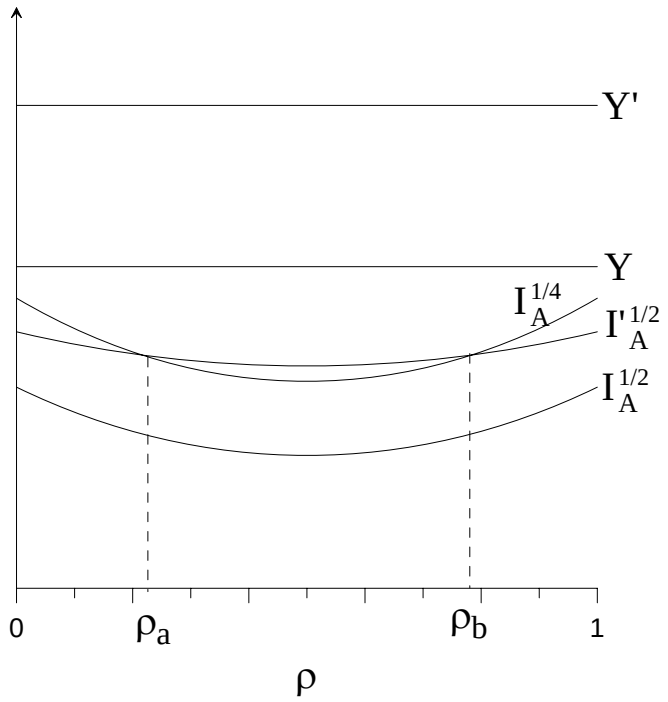

Figure 3: Credit market versus property rights policies

terms of their capital costs, keeping everything else as above. Assume that differences in the capital cost are due to political decisions, with one firm receiving subsidized credit and the other not. Let firm 1 be the privileged firm in this respect, so that $r_1 < r_2$. In Figure 4, net income with asymmetric capital costs is given by the I'_A-curve, while the I_A-curve shows the case of identical capital costs. In the figure, the potential income is the same in both cases.

We see from Figure 4 that $I_A > I'_A$ for $\rho < 0.5$. In this range of ρ, the firm receiving subsidized loans, firm 1, is the firm with a lower rent seeking efficiency. Intuitively, when the economic advantage is balanced by a disadvantage in the rent seeking contest, the balance of power between the two firms leads to intense rent seeking. For $\rho > 0.5$, net income is higher with the capital market distortion, i.e., $I_A < I'_A$. In this case, firm 1 has an advantage both in the capital market and in the rent seeking contest, and this imbalance of power between the two firms reduces rent seeking and

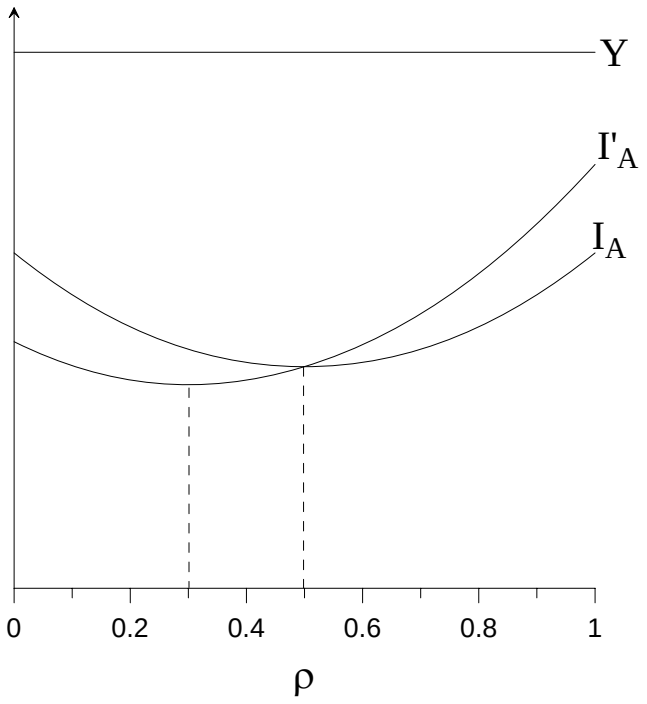

Figure 4: Capital cost asymmetry

economic waste.

We also see that the net income associated with maximum rent seeking is lower with the capital market distortion than without it, i.e., $I'_A(\rho = 0.3) < I_A(\rho = 0.5)$. Intuitively, for low values of ρ, most of the investment is undertaken by the firm facing the higher capital cost, and hence the level of investment in the economy is low.

If differences in interest rates reflect political decisions, it is reasonable to assume that there exists a negative link between a firm's influence in the rent seeking contest and the interest it pays on its loans. An influential firm is likely to have more easy access both to cheap loans and to privileges associated with rent seeking. If this is the case, we are likely to be at some point where $\rho > 0.5$, implying that the credit market distortion is good for the economy. An interesting implication of the model is thus that liberalization of credit markets, implying a harmonization of interest rates, may well reduce the net income of the economy. It does so by creating a larger degree

of balance between the two interest groups, thus intensifying rent seeking. An important insight from the present analysis is therefore that policies that "level the playing field" between the rent seeking groups is likely to be counterproductive.

5 Channels for rent seeking in Iran

There are several channels for rent seeking in Iran. Not all of these are related to oil. According to the World Bank (2003), Iran has one of the most concentrated industry structures in the world. There are also pervasive price distortions in the economy. Both of these factors create regulatory rents.

The most important channels for distributing oil rents are development projects and subsidized loans. One way to create rents from development projects such as dams, roads, and hospitals, is for the bureaucrats running the project to make a generous estimation of the project's costs. The difference between the official cost of the project and the actual cost may then be split between the contractor and the bureaucrats.

Concerning subsidized loans, these are typically administered by state development banks to promote investment projects in peripheral regions. Well-connected entrepreneurs can get access to such loans, and use the money for completely other purposes than those intended. Thus, subsidized loans for raising chicken in the remote region of Baluchistan, for instance, may well end up as property investments in Tehran.[4]

The regulatory rents are a reflection of the extent of state intervention in the economy. Due to a lack of transparency, taxes can be avoided and regulations bypassed. For instance, in Tehran, the Mayor's office has been selling permissions to exceed the legal number of floors in housing projects. In one of our interviews, we were informed that the entrepreneur paid an extra 120 000 USD to expand his building from two to five floors. Competition for positions in the Mayor's office and similar jobs in the bureaucracy, is fierce. Similarly, firms spend resources to court bureaucrats in order to obtain privileges and favors.

[4]The subsidy element, and therefore the rent, can be substantial. Currently, the Bank of Industry and Mining offers an interest rate of 11 percent. For talented rent seekers, this rate may be negotiated down to 7 percent. With an inflation rate in today's Iran of approximately 16 percent, loans carrying a nominal interest rate of 7 percent give a negative real interest rate of 9 percent.

Another regulatory rent is derived from trade barriers. Tariffs create a wedge between world prices and domestic prices, and thus a premium for those who can avoid the tariff. Avoiding tariffs can be achieved through lobbying or through smuggling. Thirdly, there are monopolies in the imports and distribution of basic consumer goods such as sugar, tea, rice, and tobacco. While there is no legal foundation for these monopolies, they are held by quasi-statal actors, and de facto sanctioned by the state, and can thus reasonably be considered as regulatory rents.

The negative impacts of rent seeking on the economy are obvious. Costs and prices are higher than necessary, delays are frequent, and quality is often poor. As way of illustration, consider the following case.

5.1 The airport

The building of the Imam Khomeini airport in Tehran started in the 1960s, with the purpose of servicing international flights, leaving national flights to the smaller Mehrabad airport. Inaugurated in May 2004 in the presence of the President and other government officials, the celebration came to an end when divisions from the Revolutionary Guard interfered. After the first flight had arrived, they blocked the runway with 30 minibuses, forcing an Iran Air flight from Dubai to pull up and return. The airplane later landed in Isfahan.[5] The airport has since been closed.

The background for the interference by the Revolutionary Guards was as follows. A Turkish-led consortium, *Tepe-Akfen-Vie* (TAV), had won the tender for running the airport. A company headed by the Revolutionary Guards had also participated in this tender, but lost. Protesting against the government's decision, they claimed that the Turkish presence at the airport represented a security risk. The real motive behind their reaction, however, appears to have been different. At Mehrabad airport, the Revolutionary Guards have their own terminal, where smuggled goods can be brought into the country. With international flights now moving to the new airport, they demand similar facilities there. The government, being dominated by reformists, opposed their demands and chose the Turkish company. This is when the Revolutionary Guards decided to react.

The Revolutionary Guards is an actor with great economic and political

[5] See www.iran-press-service.com, May 8, 2004, "Tehran new international airport shut by the army".

power in Iran. They form the core of the country's security system, and are heavily armed. Economically, they are engaged in various large scale development projects, like building roads, dams, etc. The weapon industry is under their control. In addition, they control much of the country's illegal trade.

The struggle for control over the airport illustrates in a clear way the losses from rent seeking. A large airport has been built and is ready for use. But because of a power struggle, it cannot be utilized.[6]

5.2 The petroleum fund

Another illustration of rent dissipation in Iran is given by the fate of the petroleum fund. Since the debt crisis in 1993, stabilizing the flow of oil revenues to the economy has been a major policy concern. The Rafsanjani government (1989-1997) established a foreign exchange reserve account (*hesab-e zakhire-ye arzi*) to protect the economy from fluctuations in the oil price. The intention was to invest the oil fund in international capital markets. However, due to low oil prices in the second half of the 1990s, the size of the account was insignificant. With the rise in oil prices from 1999, savings picked up. But now the third development plan announced that half of the account should be spent on private investment projects inside the country. The responsibility of administrating this activity was given to the Plan and Budget Organization (*sazmane barname va budje*), later renamed to The Plan and Management Organization (*sazmane barname va mudiriat*). Both the size of the account administered by this organization and the guidelines for allocating subsidized credit to private investment projects are unclear. Hence, the possibilities of abuse are significant.

In the elections of February 2004, the reformists lost their majority in the Parliament. Knowing that their conservative rivals would take over control over the Parliament by June 2004, they started emptying the remaining fifty percent of the foreign exchange reserve. It should be noted that the emptying of the oil fund came at a time when the oil prices were historically high. Under normal circumstances, this should imply an accumulation of funds, not their depletion.

[6] According to the Chairman of the State Aviation Organization, Hassan Hajalifard, about 244 billion toman has been spent on the project, see Iran International Monthly Magazine no. 29, May 2004, pages 96-99, www.netiran.com

The experience with the oil stabilization fund illustrates the problem of sheltering oil revenues from political infighting. Eager to promote their own interests and opposing those of rival groups, the different factions have strong incentives to spend the oil revenues. The fund has thus failed to stabilize the economy.

6 Policy reform

Several economic policy reforms have been undertaken since 1989. The major goals of the first development plan (1989-1994) were the unification of the exchange rate system, liberalization of the financial system, privatization of state owned companies, reduction of subsidies, and deregulation of foreign trade. Most of these reforms, however, were not implemented according to the plan. For instance, in 1992, the exchange rate was unified. Liberalized imports combined with low oil prices led to increased trade deficits and to the accumulation of USD 23 billion in foreign debt. As a consequence, the riyal plummeted and the government re-imposed the system of multiple exchange rates. The import barriers that had been lifted in the early 1990s were reinstalled.

This example shows that policy reform in Iran is sensitive to fluctuations in the oil price. When the oil price is high, the government deregulates the economy, whereas a low oil price generally gives the opposite result. In the first case, the supply of foreign exchange to the economy is high, reducing the price of imports. The volume of imports can increase without accumulation of foreign debt. In the latter case, the local currency depreciates and the price of imports therefore increases. In addition to weakening the current account, the depreciated currency increases the cost of domestic production. The manufacturing sector in Iran is highly dependent on imported intermediates and capital equipment, and the production is largely for the local market. In order to protect local industry and reduce the spending of foreign exchange, the policy response to lower oil prices is typically increased tariff barriers and introduction of currency rationing.

Rent seeking is also affected by fluctuations in the oil price. The standard assumption is that rent seeking increases with a rise in the oil price, since the size of the oil rent goes up. Inversely, a drop in the oil price should lead to less rent seeking. Interestingly, however, in Iran this is not necessarily so. Since the policy response to a lower oil price is more regulation, rent seeking

directed towards regulation rents is likely to increase. When oil prices go up, the rent-creating regulations are lifted, but at the same the amount of oil rent goes up. The degree of rent seeking in the economy may therefore be relatively unaffected by changes in oil revenues, though the type of rent seeking changes.

According to the logic of our model, there are two ways of reducing rent seeking in the economy. Firstly, by one of the competing groups gaining full control over the state apparatus. In this case, there will no longer be room for destructive competition over rents. Such a solution would replicate the situation in Indonesia under Suharto, where an omnipotent leader monopolized corruption and generated economic growth. In the long run, however, this may not be the optimal solution, since political hegemony tends to reduce innovation.

The second way of removing rent seeking is by eliminating the power of rent seeking groups and establishing an autonomous state. This can take place through a process of democratization, where greater transparency and accountability reduce the scope for rent seeking. An important lesson from the growth literature is that sound institutions are essential for economic development. By professionally managing the oil rent and creating opportunities for all, the destructive competition that has plagued the Iranian economy for decades can turn constructive.

Of these two scenarios, we believe the second one to be the more realistic outcome. The Islamic Republic has been haunted by internal power struggles since its creation in 1979. No single leader or faction seems to have the strength to take complete control. The destructive competition between various political actors will most likely continue. The only force that can challenge this deadlock is a push for democratization from below.

7 Concluding comments

Countries richly endowed with natural resources often have low growth rates. One explanation to the "natural resource curse" is rent seeking. The present article has analysed rent seeking both from a theoretical angle, and from an applied angle, using Iran as a case. Our theoretical analysis has demonstrated that not only oil rents, but also regulatory rents, may create rent seeking. Indeed, by reducing the incentive for investment, regulatory rents created by discretionary bureaucratic interventions in the market, may have an even

more damaging effect on the economy than oil rents.

The power balance between the political factions in Iran has always been very tight. The theoretical analysis demonstrates that rent seeking under such conditions can be expected to be fierce, with significant, negative effects on the economy. In this environment of intense rent seeking, institutional reforms that provide greater security for firms' investments may be more productive than policy reforms that seek to stimulate the income potential of the economy, like capital market deregulation. Indeed, much of the potential gain from deregulation can be expected to disappear through intensified destructive competition.

Not only may policy reforms such as liberalization of credit markets have limited effect. Our analysis has demonstrated that such reforms may in fact be counterproductive. Policies that equalize the economic power base of the rent seeking factions may well lead to intensified rent seeking and thereby reduced net income for the economy.

Another interesting observation relates to the effect of changes in oil prices on rent seeking. Intuitively, one would expect that a rise in oil prices would trigger more rent seeking, as the size of the oil rent increases, and likewise, a drop in the oil price should lead to less rent seeking. However, this may not necessarily be the case. Since the policy response to a lower oil price typically is more regulation, rent seeking directed towards regulation rents is likely to increase. When oil prices go up, the rent-creating regulations are lifted, but at the same the amount of oil rent goes up. While affecting the type of rent seeking in the economy, the total amount of rent seeking may well be relatively unaffected by changes in oil revenues.

How can the destructive competition characterizing Iran's political and economic arenas turn productive? One possibility is that one group gains a dominant position in the political system. In Iran , however, no single leader or faction seems to have the strength to take complete control. It appears to us that the only force that can challenge the current political and economic deadlock is a push for democratization from below. With an increasingly impatient population, demanding political reform, the power of the present rent seekers may be in for a fall.

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